

5. Cost Estimation Borne by the Recipient Country

	Million Pesos	Equivalent in Million Yen
1 LAND ACQUISITION AND PREPARATION	0.84	2.3
a) Land Acquisition	0.22	
b) Land Leveling	0.07	
c) Fencing	0.55	
2 IMPROVEMENT OF ACCESS ROAD	1.41	3.9
3 REMOVAL OF COLLAPSED BRIDGE	0.96	2.8
4 INLAND TRANSPORTATION OF EQUIPMENT	0.50	1.4
5 TAXES	33.70	94.7
a) Custom Duty and Import Processing Fee	8.81	
b) VAT for Imported Equipment / Materials	21.75	
c) VAT for Local Equipment / Materials	2.27	
d) VAT for Installation Work of Equipment	0.87	
TOTAL	37.41	105.1

Amount of Customs Duty, VAT, and Other Taxes

	Million Pesos
1 Custom Duty, Import Processing Fee, etc	8.810
(1) Custom Duty	7.481
(2) Brokerage Fee	0.180% of DVE 0.376
(3) Arrastre Charge	0.220% of DVE 0.459
(4) Wharfage Fee	0.100% of DVE 0.209
(5) Custom Document Stamp	0.004% of DVE 0.008
(6) Import Processing Fee	0.003% of DVE 0.006
(7) Bank Charge	0.130% of DVE 0.271
DVE: Dutiable Value of Equipment	208.72 million pesos
Total of Custom Duty, Imported Processing Fee, DVE, etc.	217.530
2 VAT for Imported Equipment and Materials (10% of above 217.530 million pesos)	21.753
3 VAT and other tax for Local Equipment/Materials	2.271
(1) Local Equipment	2.249
(2) Local Materials (10 % of Material Cost 0.224 million pesos)	0.022
4 VAT for Installation Work of Equipment (10 % of Installation Cost 8.721 million pesos)	0.872
5 Total of 1 to 4	33.706

6. Other Relevant Data

6-1 Topographic Map

6-2 Soil Observation Data

6-3 Geological Data(Boring)












6-4 Soil Analysis Data

6-5 Project Effect

6-1 Topographic Map

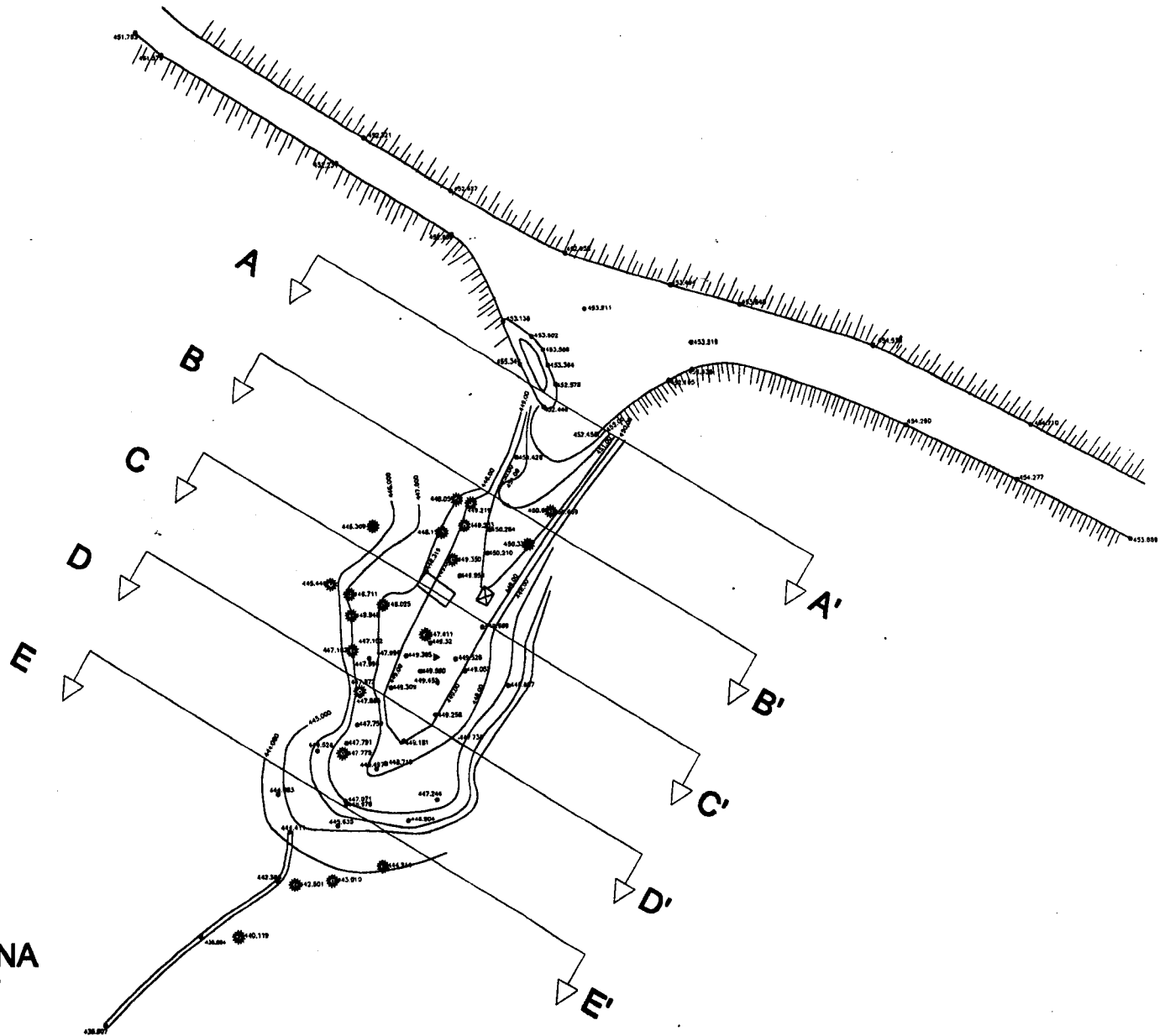


LEGEND:

-  SLOPPING GROUND UPWARD
-  SLOPPING GROUND DOWNWARD
-  FOOT TRAIL
-  MOUNDS
-  REST HOUSE
-  TEST PIT LOCATION
-  CONTOUR LINE
-  EXISTING TREE
-  DIRT ROAD
-  SPOT ELEVATION
-  450 TEMPORARY BENCH MARK







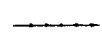
TOPOGRAPHY OF MT. CAMPANA

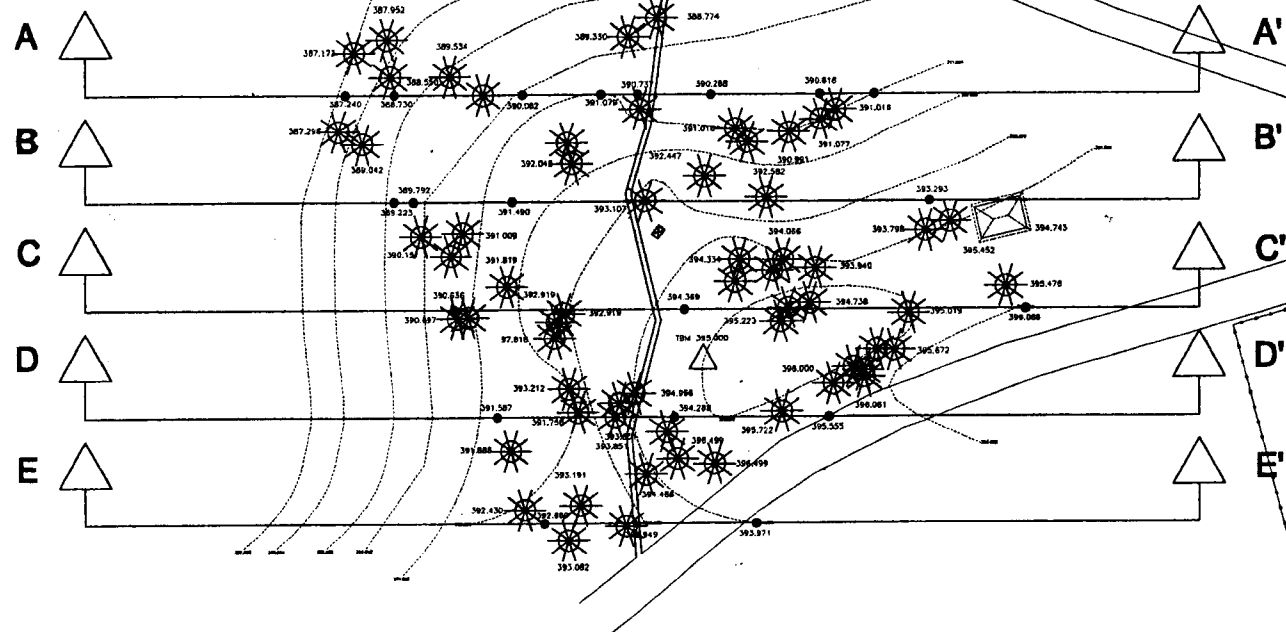
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CONSULTANTS	PROJECT TITLE	DRAWING NO.
CTI ENGINEERING INTERNATIONAL CO., LTD IN ASSOCIATION WITH WOODFIELDS CONSULTANTS, INC.	SUBMITTED BY: C.V. ABALOS, JR.	MT. CAMPANA PLAN 4-01
	SUMMERED BY: C.V. ABALOS, JR.	
	DRAWN BY: P.T. CENTENO	
	CHECKED BY:	
THE BASIC DESIGN STUDY ON THE PROJECT FOR REHABILITATION OF THE FLOOD CONTROL OPERATION AND WARNING SYSTEM IN METRO MANILA.		

LEGEND:

-  EXISTING TREE
-  CONTOUR LINE
-  EXISTING HOUSE
-  SPOT ELEVATION
-  TEMPORARY BENCH MARK
-  ROAD LAYOUT
-  PROPERTY FENCE











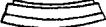

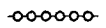














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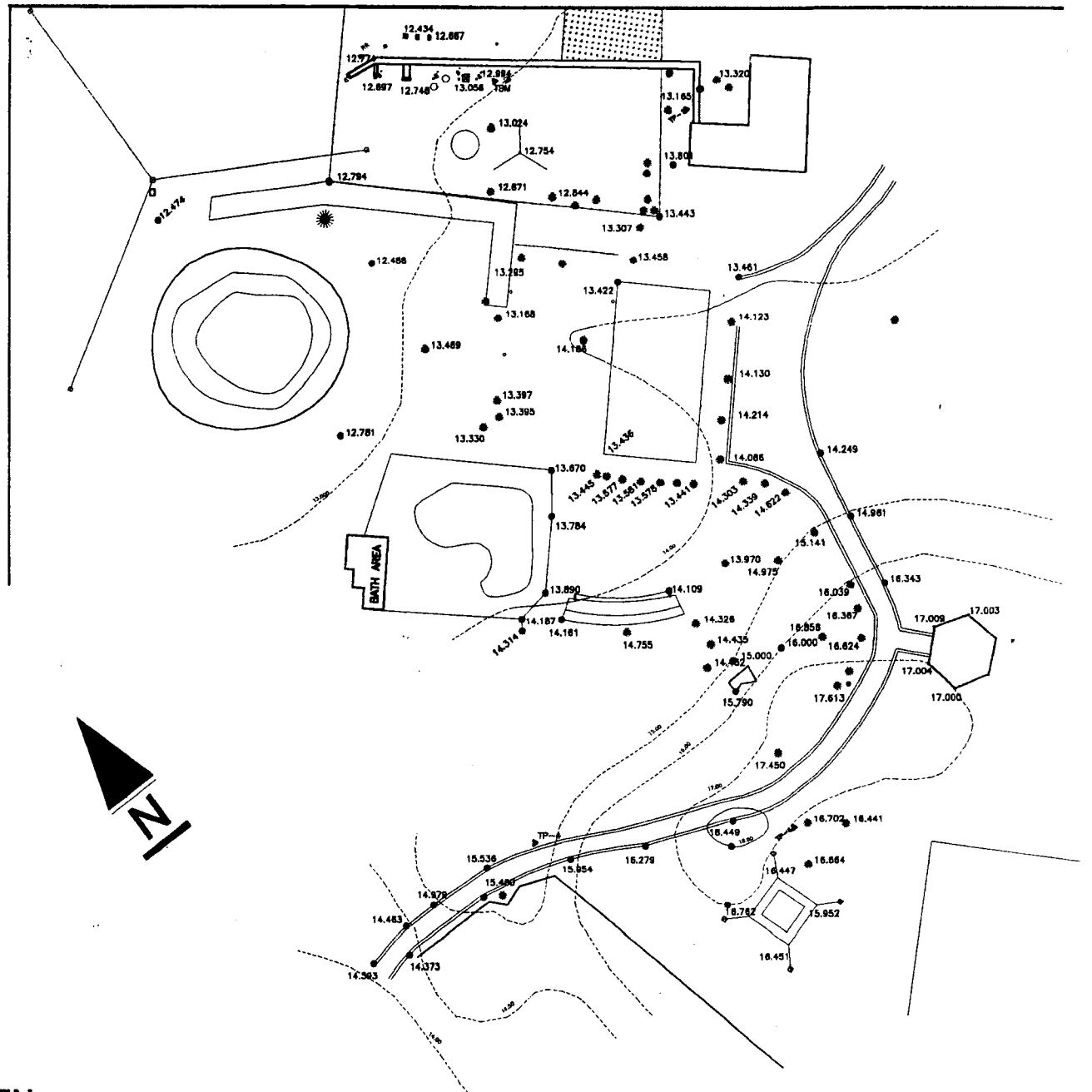
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CONSULTANTS		PROJECT TITLE	DRAWING NO.
CTI ENGINEERING INTERNATIONAL CO., LTD IN ASSOCIATION WITH WOODFIELDS CONSULTANTS, INC.		SUBMITTED BY:	MT. ARIES PLAN 5-01
		SUPPLIED BY:	
		DRAWN BY:	
		CHECKED BY:	
		THE BASIC DESIGN STUDY ON THE PROJECT FOR REHABILITATION OF THE FLOOD CONTROL OPERATION AND WARNING SYSTEM IN METRO MANILA.	

LEGEND :

-  EXISTING POND
-  ANTENNA WITH GUY WIRE
-  OFFICE BUILDING
-  BASKETBALL COURT
-  TURNING POINT
-  BENCH MARK
-  TOWER TRANSMISSION
-  ROAD LAYOUT
-  SWIMMING POOL
-  LANDSCAPE STONE
-  EXISTING TREE
-  CYCLONE WIRE FENCE
-  GARDEN AREA
-  PATH WALK
-  8" STD. RAIN GAUGE
-  RAIN RECORDER
-  RAIN GAUGE METER
-  EVAPORATION BASIN
-  WIND VANE
-  ELECTRIC POST
-  CONTROL PANEL
-  PROPERTY WALL
-  SPOT ELEVATION
-  TEST PIT LOCATION
-  EXISTING MOUND
-  EXISTING ASPHALT ROAD
-  EXISTING FOUNDATION



TOPOGRAPHY OF SCIENCE GARDEN

SCALE

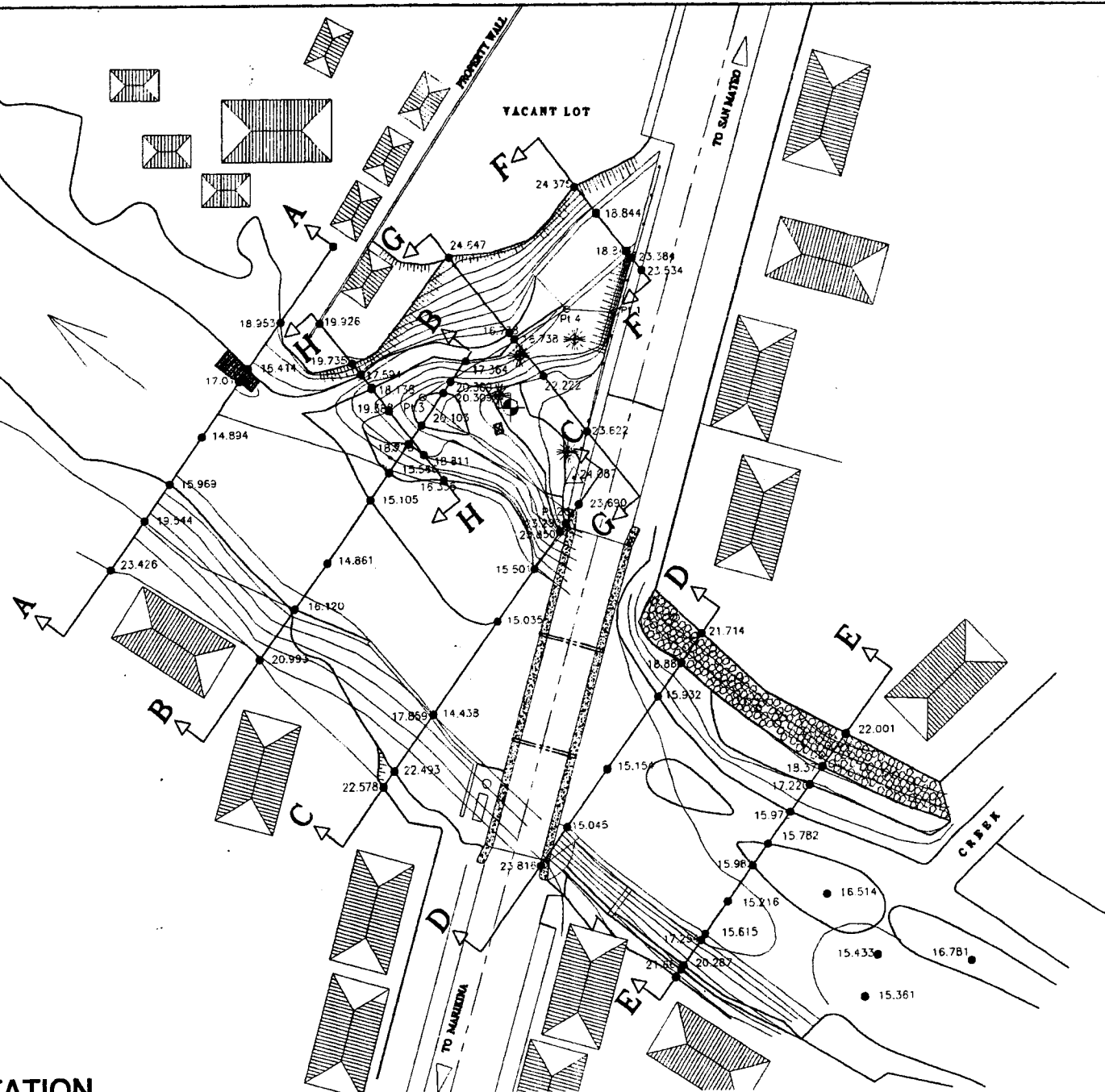
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CONSULTANTS		PROJECT TITLE		DRAWING NO.	
CTI ENGINEERING INTERNATIONAL CO., LTD IN ASSOCIATION WITH WOODFIELDS CONSULTANTS, INC.		SUBMITTED BY:	THE BASIC DESIGN STUDY ON THE PROJECT FOR REHABILITATION OF THE FLOOD CONTROL OPERATION AND WARNING SYSTEM IN METRO MANILA.		SC. GARDEN PLAN 3 - 01
		SURVEYED BY:			
		DRAWN BY:			
		CHECKED BY:			



LEGEND:

- GUARD RAIL
- SLOPPING GROUND UPWARD
- BRIDGE
- ADOBE RIP RAP AND WALL
- REINFORCED CONCRETE PIPE
- PROPERTY WALL
- RIVER FLOW
- TEST PIT LOCATION
- BOREHOLE LOCATION
- SPOT ELEVATION
- REVETMENT WALL
- BOX CULVERT SPILLWAY
- BENCH MARK
- RESIDENTIAL HOUSE
- BROKEN BRIDGE
- EXISTING TREE

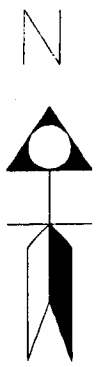


TOPOGRAPHY AT NANGKA STATION















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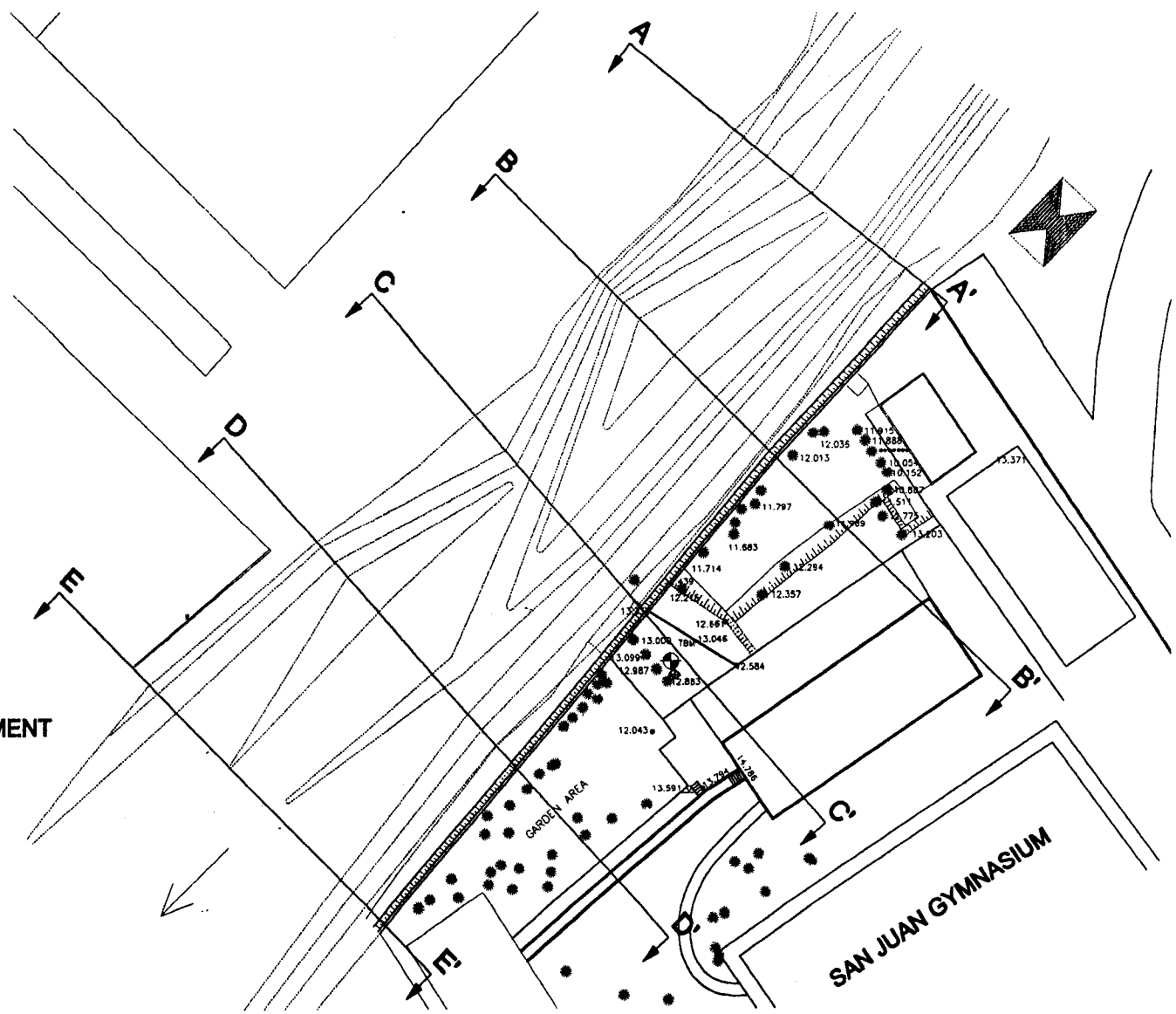
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CONSULTANTS		PROJECT TITLE		DRAWING NO.	
CTI ENGINEERING INTERNATIONAL CO., LTD IN ASSOCIATION WITH WOODFIELDS CONSULTANTS, INC.		SUBMITTED BY	C.V. Abalos, Jr.	THE BASIC DESIGN STUDY ON THE PROJECT FOR REHABILITATION OF THE FLOOD CONTROL OPERATION AND WARNING SYSTEM IN METRO MANILA.	NANGKA PLAN 1-01
		SURVEYED BY	C.V. Abalos, Jr.		
		DRAWN BY	C.V. Abalos, Jr.		
		CHECKED BY	C.V. Abalos, Jr.		



LEGEND:

-  **SLOPPING GROUND UPWARD**
-  **ROAD / PATH WALK**
-  **SCHOOL BUILDING**
-  **GARDEN AREA**
-  **RIVER FLOW**
-  **TEST PIT LOCATION**
-  **CONTOUR LINE**
-  **HIGH WATER LEVEL MARK**
-  **EXISTING CONCRETE REVETMENT**
-  **SPOT ELEVATION**
-  **BOREHOLE LOCATION**
-  **CONTOUR LINE**
-  **CONCRETE WALL**
-  **CONCRETE STAIR**



TOPOGRAPHY AT SAN JUAN STATION

SCALE

1: 600 M

CONSULTANTS		PROJECT TITLE		DRAWING NO.	
CTI ENGINEERING INTERNATIONAL CO., LTD IN ASSOCIATION WITH WOODFIELDS CONSULTANTS, INC.		SUBMITTED BY:	THE BASIC DESIGN STUDY ON THE PROJECT FOR REHABILITATION OF THE FLOOD CONTROL OPERATION AND WARNING SYSTEM IN METRO MANILA.		SAN JUAN PLAN 2 - 01
		SURVEYED BY:			
		DRAWN BY:			
		CHECKED BY:			
		G.V. ABALOS, JR.			
		G.V. ABALOS, JR.			
		P.T. CENTENO			

6-2 Soil Observation Data

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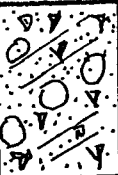

GEOTECHNICAL DATA FOR TEST PITS

Sheet 1 of 1

PROJECT NAME: Rehabilitation of Flood Control Operation and Warning System in Metro Manila							Date Started: September 13, 1999 Date Completed: September 18, 1999					
CLIENT: CTI Engineering International Co., Ltd.							Coordinates:					
TEST PIT NO.: TP-1			Location: Mt. Campana, Antipolo				Surface Elev.: 449.955 m					
Depth: Max. of 2.00 meters			Ground Water Level: Not Encountered				Logged By: C.C. Farum		Checked By: R.P. Abne			
Depth in Meters	Sample No.	Graphic Log	Soil Description	U S C S	Sieve Analysis	NMC %	Liquid Limit	P.I.	Moisture Density Relationship	Remarks		
					% Passing							
					No. 4	No.200			OMC %	MDD g/cc		
0.00										Top of test pit is @ EL 449.995m		
	S-1		Medium stiff, light brown to brown, Clayey, Sandy SILT with little amount of fine fragments of gravel and tuffaceous rock, high plasticity.	MH	94	59	40.9	56.17	25	27.50	1.406	above MLLW
1.00												
	S-2		- Same as above -	MH	98	57	33.7	53.62	31	28.00	1.412	
2.00												


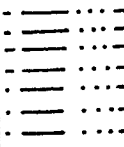
Abbreviations: NMC - Natural Moisture Content ; P.I.-Plasticity Index; MDD - Maximum Dry Density ; OMC - Optimum Moisture Content

GEOTECHNICAL DATA FOR TEST PITS

PROJECT NAME: Rehabilitation of Flood Control Operation and Warning System in Metro Manila						Date Started: September 15, 1999 Date Completed: September 18, 1999						
CLIENT: CTI Engineering International Co., Ltd.						Coordinates:						
TEST PIT NO.: TP-3		Location: San Juan, Metro Manila (San Juan Elem. School)				Surface Elev. (MLLW): E.L. 13.36m.						
Depth: Max. of 2.00 meters		Ground Water Level: Not Encountered				Logged By: C.C. Farum		Checked By: R.P. Abne				
Depth in Meters	Sample No.	Graphic Log	Soil Description	U S C S	Sieve Analysis		NMC %	Liquid Limit	P.I.	Moisture Density Relationship		Remarks
					No. 4	No.200				OMC %	MDD g/cc	
0.00												Top of test pit is about EL. 13.36m.
	S-1		From depth 0.00 to 0.80 meter:- In-situ soils is composed of <u>Brownish Black, CLAYEY GRAVEL</u> (weathered tuff), with broken glass, rusted empty tin cans, waste plastics, decayed wood and other organic waste materials.	GC	40	18	37.90	38.90	11	24.0	1.384	
1.00												
	S-2		From depth 0.80 to 2.00 meter: In-situ soils consisted of <u>Dense, Brown, Clayey SAND</u> , with porous gravel (tuffaceous conglomerate) and medium to high plasticity fines.	SC	89	37	37.50	51.88	21	31.0	1.419	
2.00												

Abbreviations: NMC - Natural Moisture Content; P.I.- Plasticity Index; MDD - Maximum Dry Density; OMC - Optimum Moisture Content

GEOTECHNICAL DATA FOR TEST PITS


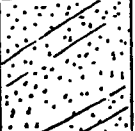
PROJECT NAME: Rehabilitation of Flood Control Operation and Warning System in Metro Manila						Date Started: September 16, 1999 Date Completed: September 19, 1999						
CLIENT: CTI Engineering International Co., Ltd.						Coordinates:						
TEST PIT NO.: TP-4			Location: Science Garden, Quezon City			Surface Elev.: 12.4796 m						
Depth: Max. of 2.00 meters			Ground Water Level: 1.60 meters below existing ground surface.			Logged By: C.C. Farum		Checked By: R.P. Abne				
Depth in Meters	Sample No.	Graphic Log	Soil Description	U S C S	Sieve Analysis		NMC %	Liquid Limit	P.I.	Moisture Density Relationship		Remarks
					No. 4	No. 200				OMC %	MDD g/cc	
0.00												Top of test pit is @ E.L.
	S-1		Medium dense, dark brown, <u>Clayey SAND</u> , with pea-size gravel and medium plasticity fines.	SC	76	14	36.2	42.22	13.72	24.90	1.475	12.4796m above MLLW.
1.00												
	S-2		From depth 1.00m to 1.80m: Medium stiff, light gray, <u>Clayey to Sandy SILT</u> , with high plasticity. At depth 1.80m to 2m, hard, Clay/Silt soil (weathered tuff) is encountered.	MH	96	55	38.30	58.20	26.26	29.30	1.442	
2.00												

Abbreviation: NMC - Natural Moisture Content; P.I. - Plasticity Index; MDD - Maximum Dry Density; OMC- Optimum Moisture Content

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 e-mail address: bsenggeo@iconn.com.ph

GEOTECHNICAL DATA FOR TEST PITS

Sheet 1 of 1

PROJECT NAME: Rehabilitation of Flood Control Operation and Warning System in Metro Manila							Date Started: September 20, 1999 Date Completed: September 23, 1999					
CLIENT: CTI Engineering International Co., Ltd.							Coordinates:					
TEST PIT NO.: TP-5			Location: Mt. Ma-ararat, Antipolo				Surface Elev.: 199.8515m above MLLW					
Depth: Max. of 2.00 meters			Ground Water Level: Not encountered			Logged By: C.C. Farum		Checked By: R.P. Abne				
Depth in Meters	Sample No.	Graphic Log	Soil Description	U S C S	Sieve Analysis		NMC %	Liquid Limit	P.I.	Moisture Density Relationship		Remarks
					No. 4	No.200				OMC %	MDD g/cc	
0.00												Top of test pit is @ E.L.
	S-1		Medium dense, reddish brown, <u>Clayey SAND</u> , some fragments of coralline limestone gravel and high plasticity fines.	SC	47	10	24.33	55.19	24.54	31.60	1.469	199.8515m above MLLW. Note: Boulder size rocks are encountered during digging works.
1.00												
	S-2		Dense, reddish brown, <u>Clayey SAND</u> , some fragments of coralline limestone gravel, high plasticity fines.	SC	56	14	30.8	56.60	24.71	31.20	1.449	
2.00												

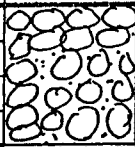
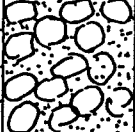
Abbreviations: NMC - Natural Moisture Content
P.I. - Plasticity Index

MDD - Maximum Dry Density
OMC - Optimum Moisture Content

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 Geotechnical & Materials Testing Engineers
 e-mail address: bsenggeo@jconn.com.ph

GEOTECHNICAL DATA FOR TEST PITS

Sheet 1 of 1

PROJECT NAME: Rehabilitation of Flood Control Operation and Warning System in Metro Manila						Date Started: October 2, 1999 Date Completed: October 4, 1999						
CLIENT: CTI Engineering International Co., Ltd.						Coordinates:						
TEST PIT NO.: TP-6			Location: ARIS, Antipolo			Surface Elev.:						
Depth: Max. of 2.00 meters			Ground Water Level: Not encountered			Logged By: C.C. Farum			Checked By: R.P. Abne			
Depth in Meters	Sample No.	Graphic Log	Soil Description	U S C S	Sieve Analysis		NMC %	Liquid Limit	P.I.	Moisture Density Relationship		Remarks
					No. 4	No.200				OMC %	MDD g/cc	
0.00												Top of test pit is @ E.L.
	S-1		Dense, light brown, <u>Clayey, Sandy, GRAVEL</u> , with medium plasticity fines	GW I GC	23	2	14.09	48.18	17.9	19.0	1.754	
1.00												
	S-2		-DO-	GW I GC	19	2	14.01	45.20	15.78	17.0	1.811	
2.00												

Abbreviation: NMC - Natural Moisture Content
 P.I. - Plasticity Index

MDD - Maximum Dry Density
 OMC - Optimum Moisture Content