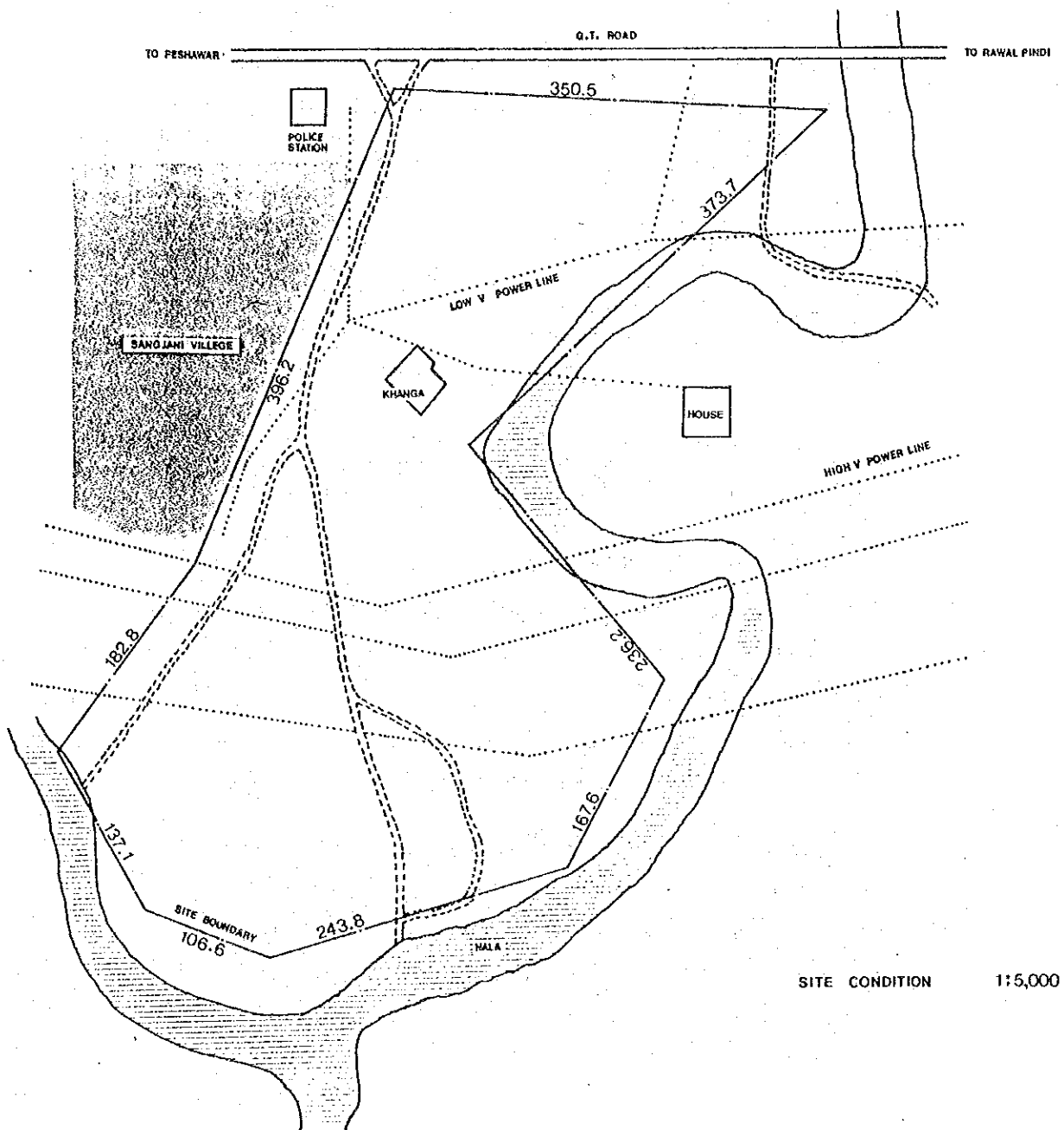
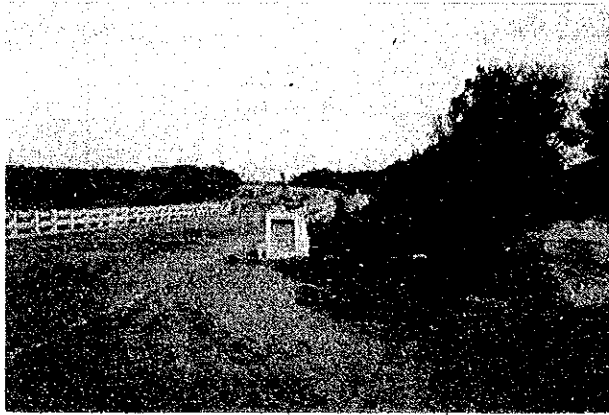


### APPENDIX 3. Conditions of the Site

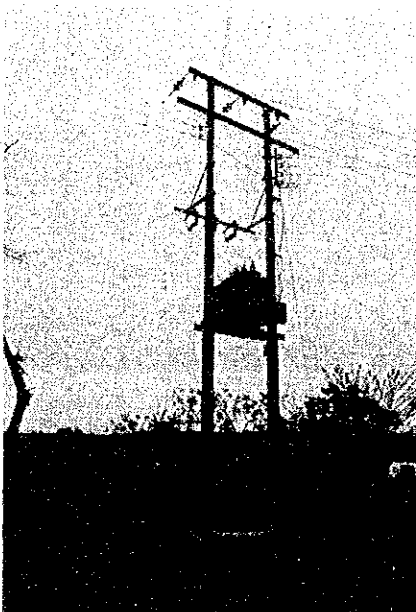




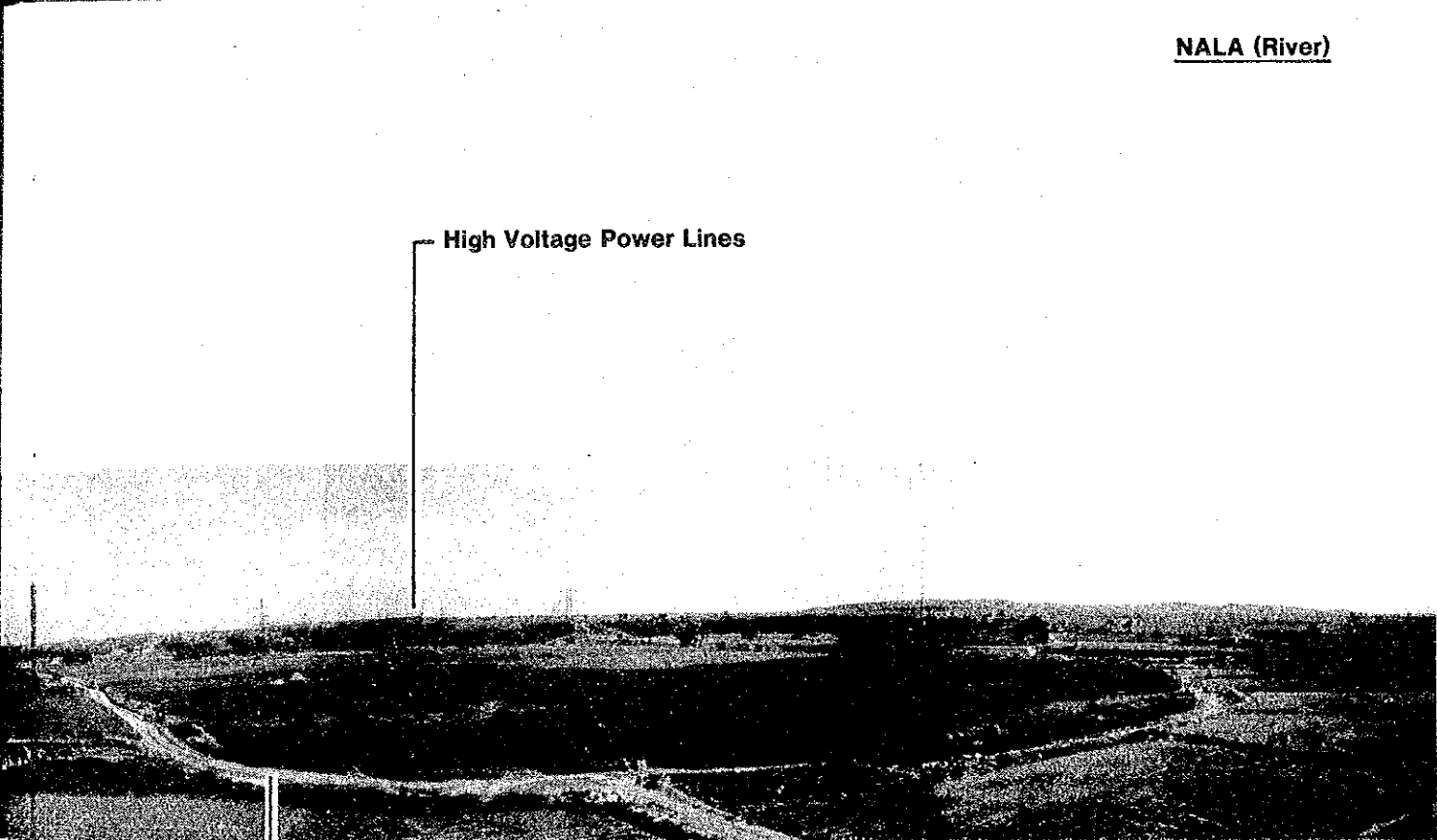
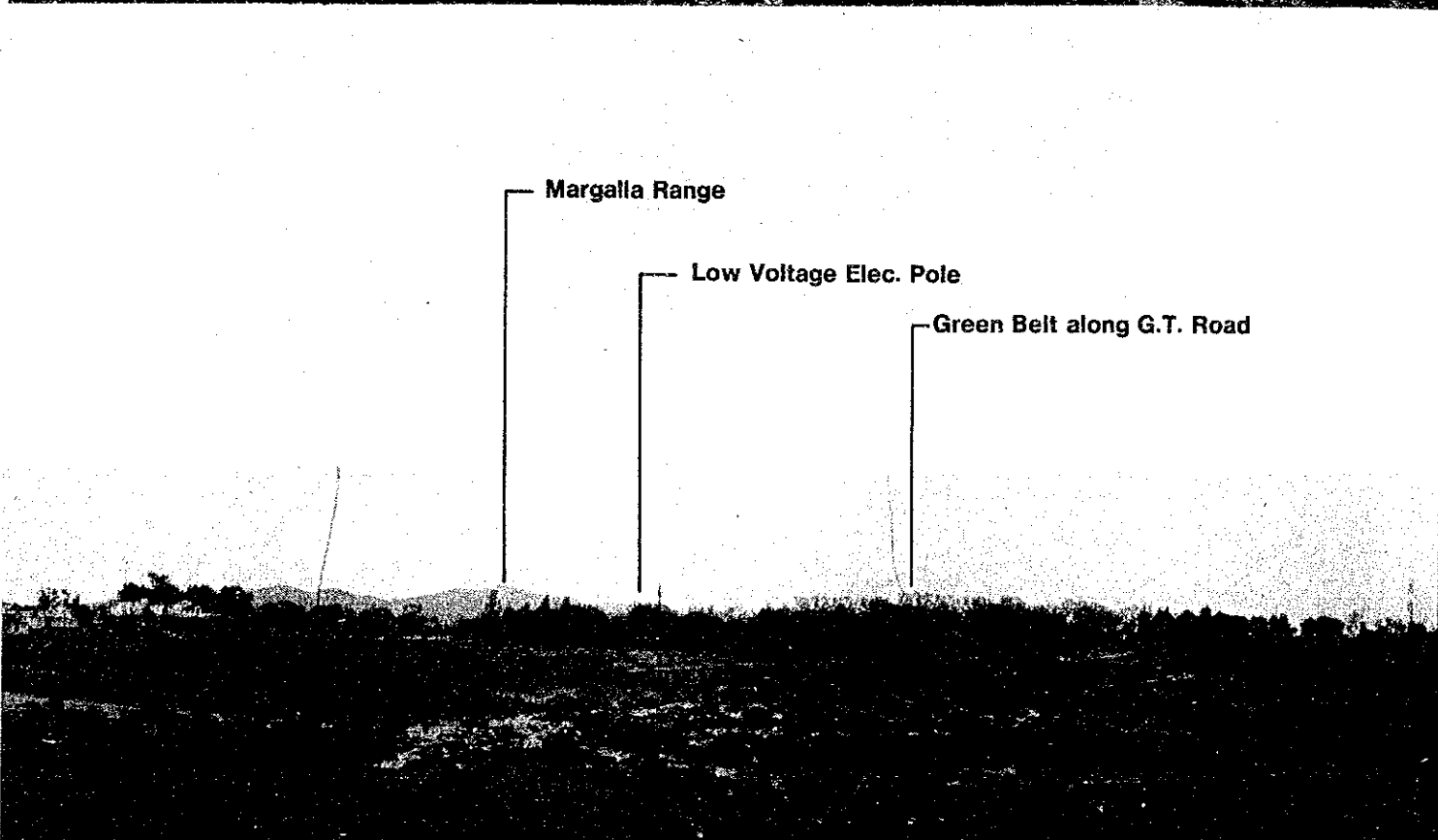
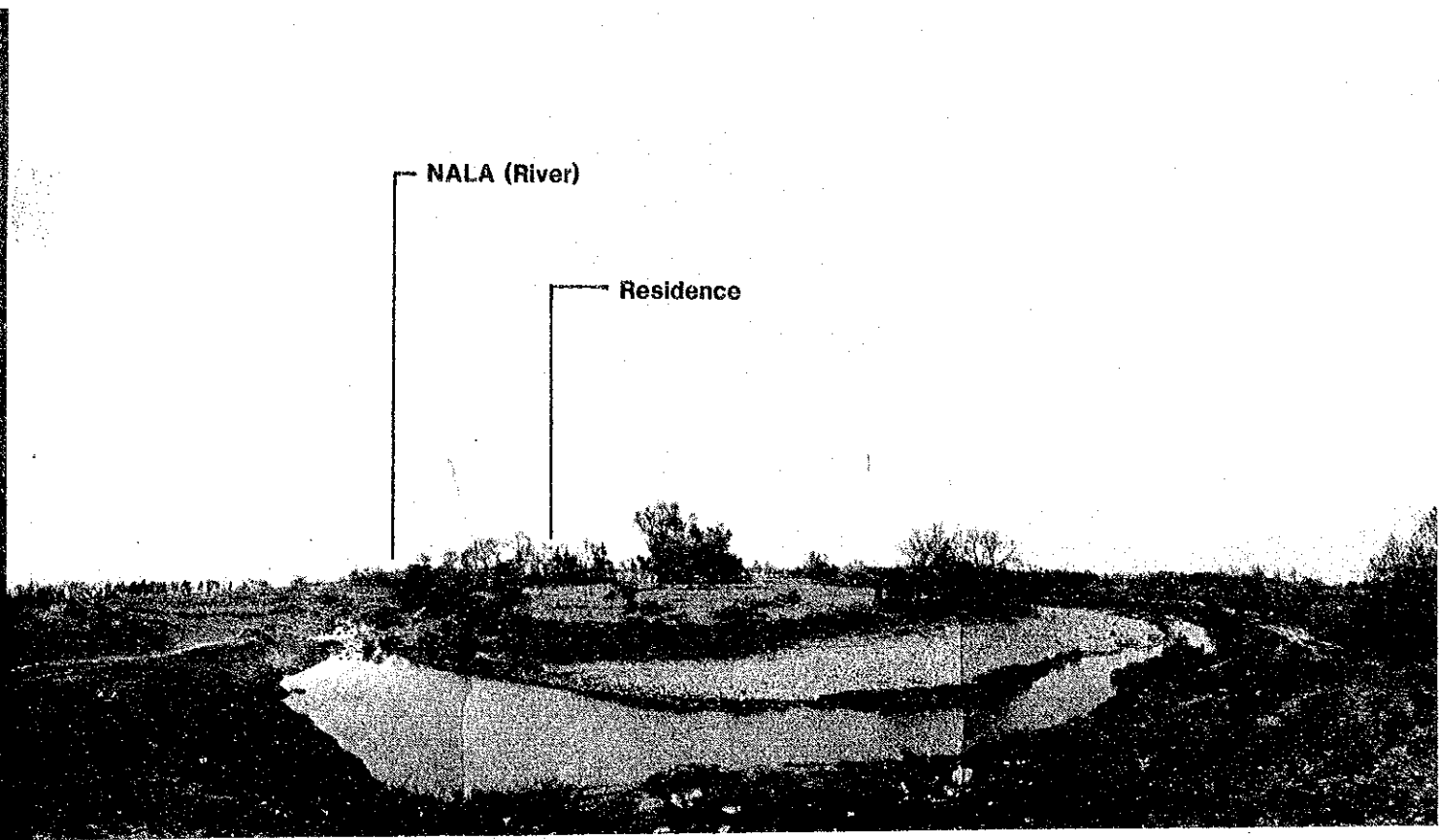
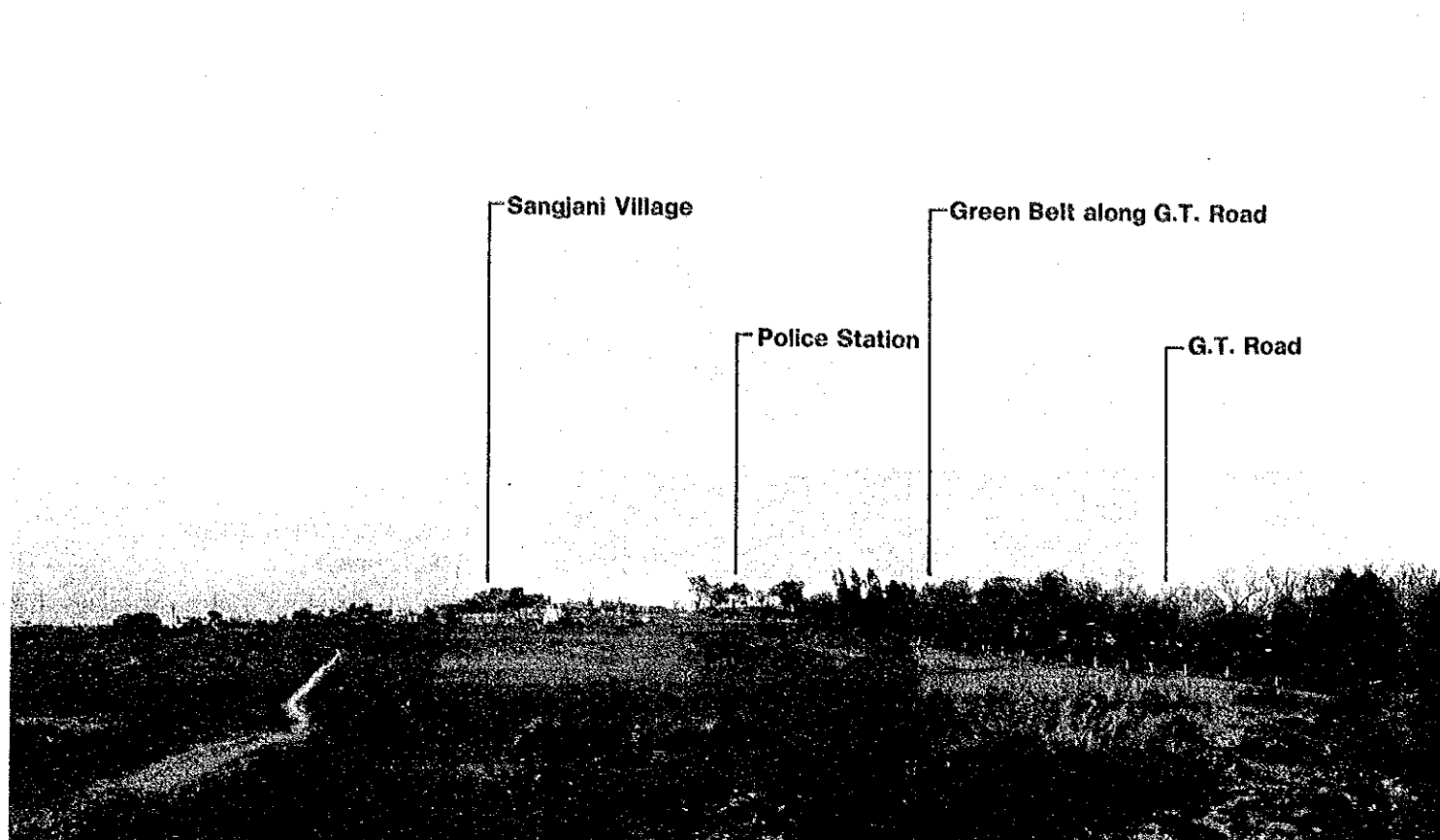
**GRAND TRUNK ROAD  
(G.T. Road)**



**High voltage power line  
acrossing the site (3)**



**Transformer distributing electricity  
to Sangjani village**



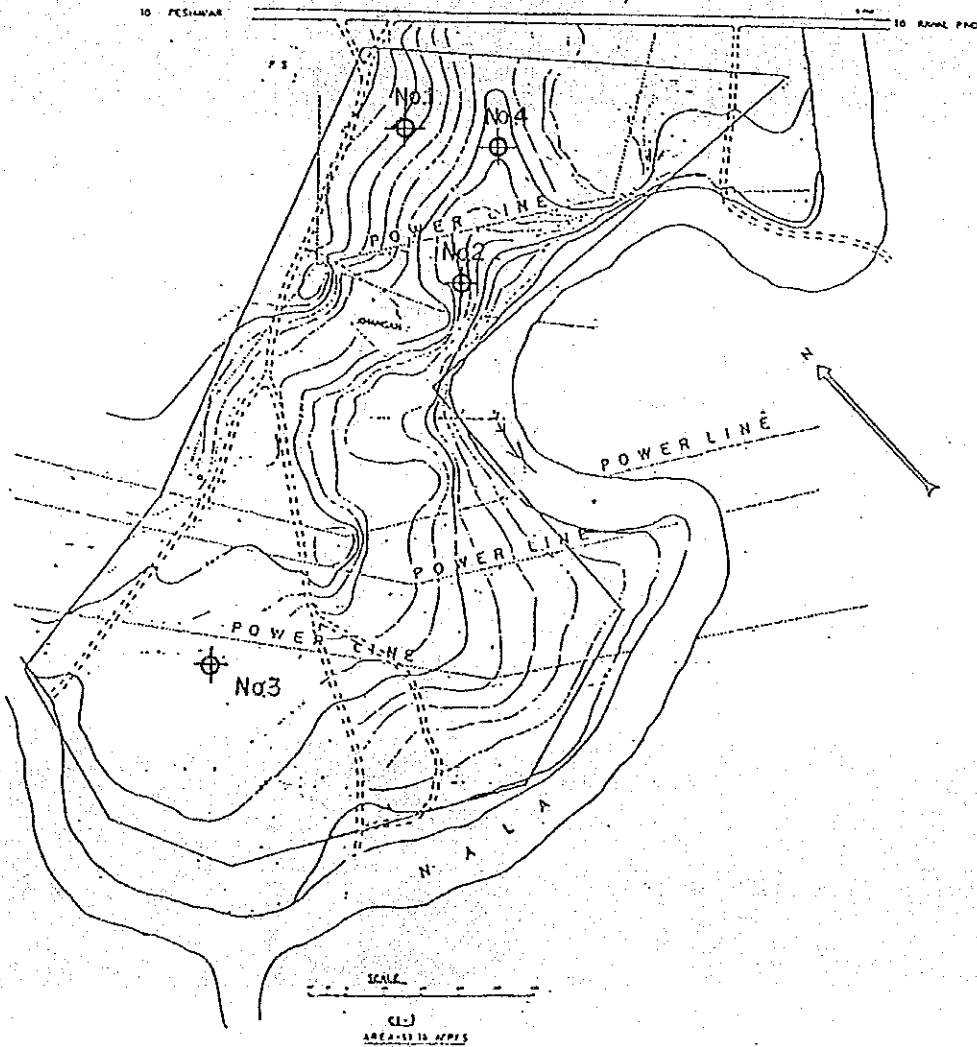
NALA (River)

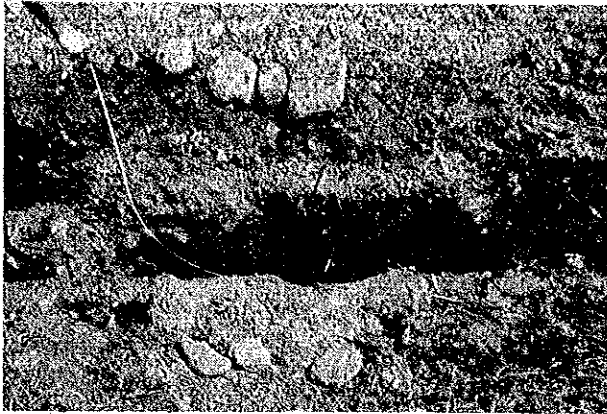
SITE NORTHERN

SITE SOUTHERN

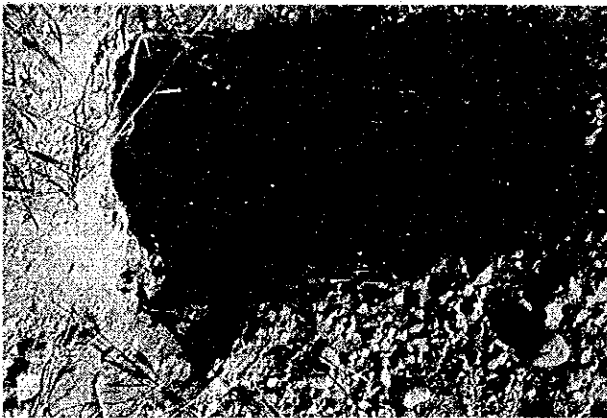
■ Test Pits

PROPOSED SITE FOR CONSTRUCTION MACHINERY  
TRAINING CENTRE SANGJANI





**Test Pit No.1**



**Test Pit No.2**



**Test Pit No.3**



**Test Pit No.4**

■ Soil Testing Results

SOIL TESTING RESULTS																				
Title of Job <u>C.M.T.C Project in PAKISTAN</u>																				
Bore Hole No. _____																				
Sample No. _____																				
Depth of Sample (m)																				
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:40%;"></td> <td style="width:10%;"></td> <td style="width:10%;"></td> <td style="width:10%; text-align:center;">1</td> <td style="width:10%; text-align:center;">2</td> <td style="width:10%; text-align:center;">3</td> <td style="width:10%;"></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align:center;">0~1.0</td> <td style="text-align:center;">0~1.0</td> <td style="text-align:center;">0~1.0</td> <td></td> </tr> </table>										1	2	3					0~1.0	0~1.0	0~1.0	
			1	2	3															
			0~1.0	0~1.0	0~1.0															
Grain-Size Analysis	Gravel-Size Fraction (200 $\mu$ <)	%	3	70																
	Sand-Size Fraction (74~200 $\mu$ )	%	17	11	35															
	Silt-Size Fraction (5~74 $\mu$ )	%	51	6	37															
	Clay-Size Fraction (5 $\mu$ >)	%	29	13	28															
	Max. Grain Size	mm	9.52	38.10	4.76															
	Uniformity Coefficient	$U_c$	—	14.3750	—															
	Coefficient of Curvature	$U_c$	—	88.0	—															
Consistency	Liquid Limit	$w_L$ %	31.3	34.1	28.5															
	Plastic Limit	$w_p$ %	14.8	13.9	15.7															
	Plasticity Index	$I_p$	16.5	20.2	12.8															
Classification			(CL)g	(GC)	(ML)															
			F	GF	F															
Specific Gravity of Soil Particles		$G_s$ g/cm <sup>3</sup>	2.683	2.697	2.709															
Natural	Natural Moisture Content	$w$ %	15.2	13.0	5.7															
	Bulk Density	$\gamma_t$ g/cm <sup>3</sup>																		
	Natural Void Ratio	$e_o$																		
	Degree of Saturation	$s_r$ %	35	20	35															
Unconfined Compression Test	Uncon. Comp. Strength	$q_u$ kg/cm <sup>2</sup>																		
	Sensitivity Ratio	$S_t$																		
	Modulus of Elasticity	$E_{20}$ kg/cm <sup>2</sup>																		
Triaxial Compression Test	* Testing Method																			
	Cohesion	$C$ kg/cm <sup>2</sup>																		
	Angle of Internal Friction	$\phi$ deg.																		
Direct Shear Test	* Testing Method																			
	Cohesion	$C$ kg/cm <sup>2</sup>																		
	Angle of Internal Friction	$\phi$ deg.																		
Consolidation Test	Precompression Intensity	$p_p$ kg/cm <sup>2</sup>																		
	Compression Index	$C_c$																		
	Coefficient of Consolidation	$C_v$ cm <sup>2</sup> /min																		
	Coefficient of Permeability	$k$ cm/min																		

\* Unconsolidation - Undrained Shear Test      UU  
 Consolidation - Undrained Shear Test      CU, CU  
 Consolidation - Drained Shear Test      CD

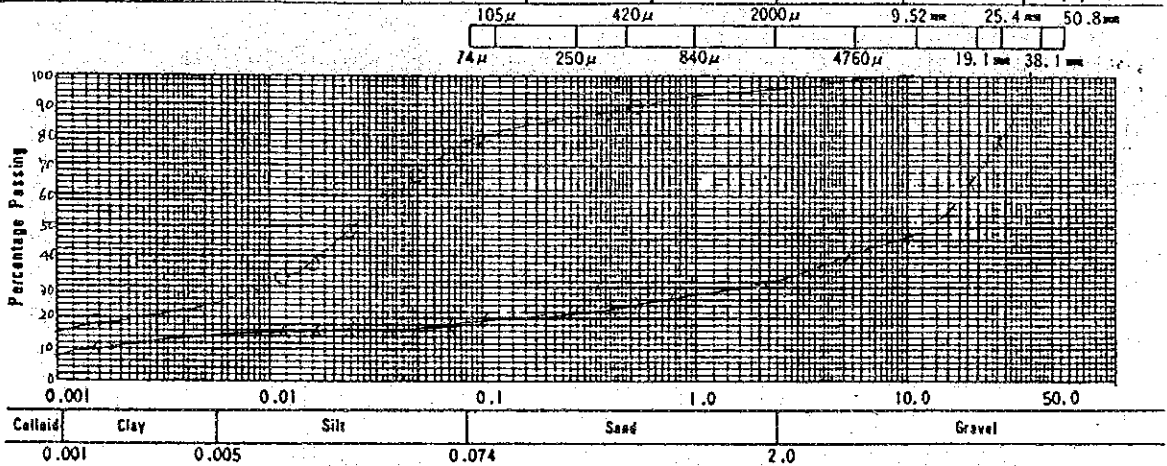
GRAIN SIZE ANALYSIS

2

Title of Job C.M.T.C Project in PAKISTAN  
 Bore Hole No. \_\_\_\_\_

Sample No. & Depth \_\_\_\_\_ ( \_\_\_\_\_ m ~ \_\_\_\_\_ m)

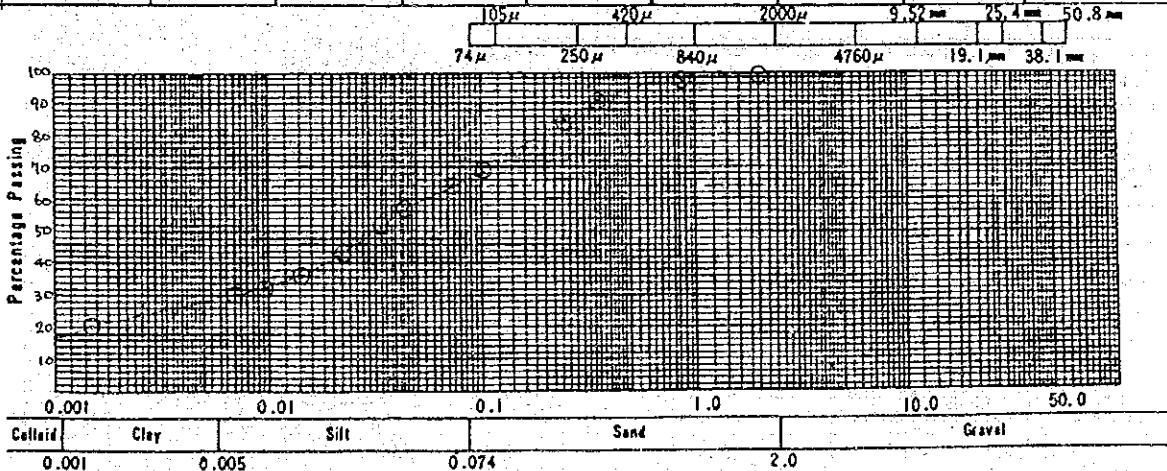
No	Gravel %	Sand %	Silt %	Clay %	Colloid %	Max. Grain Size mm	60% Grain D <sub>60</sub> Size mm	Effective D <sub>10</sub> Grain Size mm	Uniformity U <sub>c</sub> Coefficient
1	3	17	51	46		9.52	0.029		
2	70	11	6	22		38.10	23.0		14375.0



Title of Job \_\_\_\_\_  
 Bore Hole No. \_\_\_\_\_

Sample No. & Depth \_\_\_\_\_ ( \_\_\_\_\_ m ~ \_\_\_\_\_ m)

No	Gravel %	Sand %	Silt %	Clay %	Colloid %	Max. Grain Size mm	60% Grain D <sub>60</sub> Size mm	Effective D <sub>10</sub> Grain Size mm	Uniformity U <sub>c</sub> Coefficient
3		35	37	44		4.76	0.054		



LIQUID LIMIT AND PLASTIC LIMIT

3

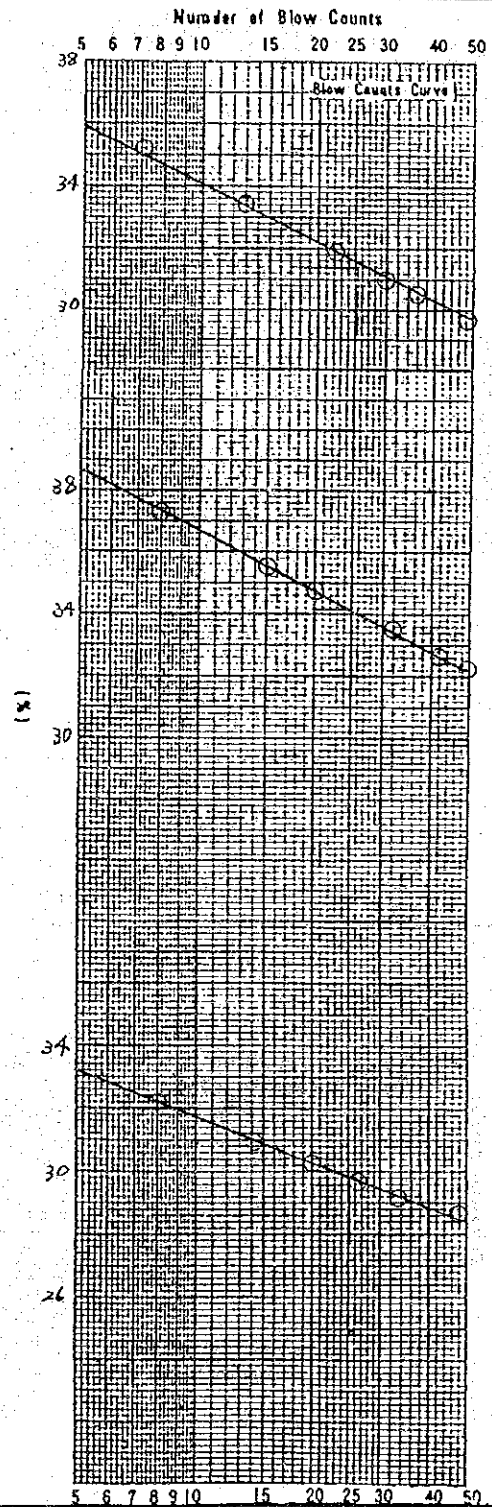
Title of Job C.M.T.C Project in PAKISTAN

Bore Hole No. \_\_\_\_\_

Sample No. & Depth		No. 1 ( 0 m ~ 1.0 m )		
Liquid Limit Test			Plastic Limit Test	
No.	Number of Blows	Moistur Contents %	No.	Moistur Contents %
1	49	29.6	1	15.4
2	37	30.1	2	13.9
3	30	30.7	3	15.0
4	21	31.7		
5	13	33.2		
6	7	35.2	Average	
Liquid Limit $w_L$		Plastic Limit $w_p$	Plasticity Index $I_p$	
31.3 %		14.8 %	16.5	

Sample No. & Depth		No. 2 ( m ~ m )		
Liquid Limit Test			Plastic Limit Test	
No.	Number of Blows	Moistur Contents %	No.	Moistur Contents %
1	49	32.2	1	13.3
2	42	32.5	2	13.8
3	32	33.6	3	14.5
4	20	34.9		
5	16	35.4		
6	8	37.5	Average	
Liquid Limit $w_L$		Plastic Limit $w_p$	Plasticity Index $I_p$	
34.1 %		13.9 %	20.2	

Sample No. & Depth		No. 3 ( m ~ m )		
Liquid Limit Test			Plastic Limit Test	
No.	Number of Blows	Moistur Contents %	No.	Moistur Contents %
1	48	26.9	1	15.9
2	34	27.4	2	16.6
3	26	28.4	3	14.7
4	20	29.1		
5	14	30.1		
6	8	31.8	Average	
Liquid Limit $w_L$		Plastic Limit $w_p$	Plasticity Index $I_p$	
28.5 %		15.7 %	12.8	





APPENDIX 4. Related Information for the CMTC

Final Draft of Actual Machine for the CMTC Project

Description	Specification	Q'ty for Ope.	Q'ty for Mech.	Total	Remark
Bull Dozer	320 ps	1		1	Ripper working on hard-soil/rocks and machining with the Scraper 16m as a pushing dozer
	220 ps	1		1	
	160 ps → 150 ps	1		1	
	▼ 140 ps → 110 ps	1	1	2	Much popular type in Pakistan
Dozer Shovel	160 ps	1		1	
	110 ps	1	1	2	
Wheel Loader	△ 200 ps → 230 ps	1		1	Maching with the Dump-truck 20 ton
	100 ps	1	1	2	
Motor Grader	145 ps	1		1	
	110 ps	1	1	2	Articulate-type for Operator course
Dumpr Truck	△ 18 t → 20 t (off-high)	1		1	Torque-Control type
	10 t (highway)	1	1	2	
Road Stabilizer	360 ps	1		1	
Truck Crane	10 t	1		1	
Hydraulic Excavator	▼ 1.2 m <sup>3</sup>	1 → 0		1 → 0	Quite big compared with other Machinery
	0.9 m <sup>3</sup> → 0.7 m <sup>3</sup>	0 → 1	1	1 → 2	Much popular type in Pakistan
	△ 0.5 m <sup>3</sup>	1 → 0		1 → 0	Adjustment of total number
Motor Scraper	▼ 23 m <sup>3</sup>	1 → 2		1 → 2	Quite big compared with other Machinery and necessary of a pushing Bulldozer 410 ps
	△ 16 m <sup>3</sup>	2		2	Adjustment of total number
Vibratory Roller	8 t	1		1	
Pneumatic Roller	15 t	1		1	
Compressor W/ Attachment	2.5 m <sup>3</sup> /min.	1	1	2	
Diesel Generator	9.5 kw	1	1	2	
Asphalt Distributor		1		1	

↑ Middle grade second-hand machinery, 3 years old or 3,000 hours-run.

▼ Grade down

△ Grade up

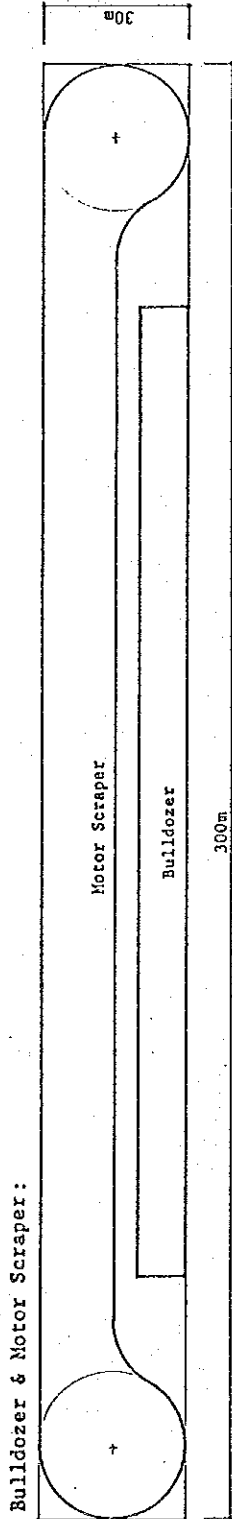
■ Operator Training and Construction Equipment

	BULLDOZER				DOZER		WHEEL LOADER		MOTOR GRADER		DUMP TRUCK		STABI		HYDRAULIC EXCAVATOR		SCRAPER		ROLLER		GENERATOR		AIR-COMPRESSOR		OTHERS
	320	220	150	110	160	110	280	100	145	110	20	18	360	0.9	0.5	16	10	10	9.5	2.5	TON	TON	KW	CU.M/MIN	
DOZE AND DIG WORK	●	●	●	●																					
RIPPING WORK	●								●																
SLOPE CUT WORK	●	●	●	●					●							●									
EMBANKMENT & REFILL	●	●	●	●												●									
LEVELLING (ROUGH)	●	●	●	●																					
DITCH EXCAVATION				●										●											
GROUND EXCAVATION														●											
LOADING (AND DIG)					●									●											
LOAD AND CARRY																									
SPREAD AND GRADING																									
SOIL COMPACTION																									
ASPHALT COMPACTION																									
OPERATION																									
HAULING																									
ROAD PAVEMENT																									
GRAVEL ROAD MAINTENANCE																									
ROAD REHABILITATION																									
MOTOR SCRAPER WORK	●																								

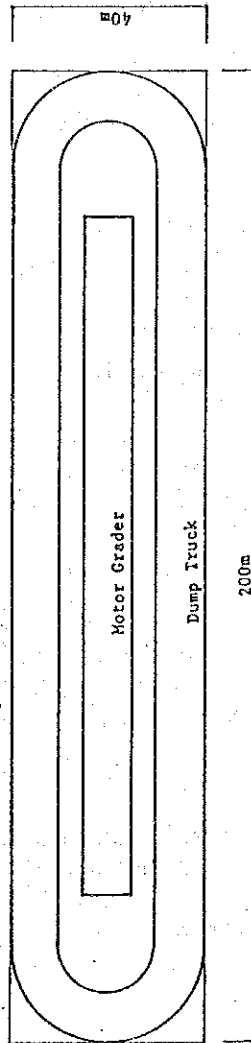
\* mainly use for lighting or small electric tools.

\*\* mainly use for concrete breaker or painting

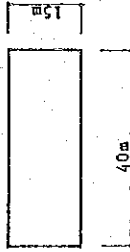
■ Basic Area for Operator Training



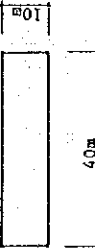
Dump Truck & Motor Grader :



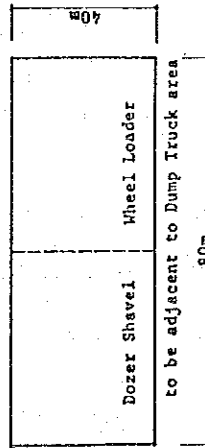
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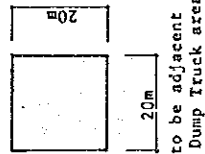
Asphalt Distributer:



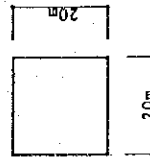
Dozer Shavel & Wheel Loader:



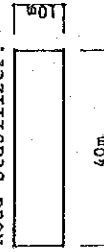
Excavator:



Truck Crane:



Road Stabilizer:



Training of Truck Crane and Excavator should be avoided under the power lines.

## APPENDIX 5. Equipment List

### E-1 ACTUAL MACHINES

#### A. ACTUAL MACHINE FOR OPERATOR COURSE

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-1	BULLDOZER With Straight Tilt Dozer, Multi-Shank Ripper, Pusher Plate and Canvas Canopy Max. Horse Power: Approx. 320 PS Drive System: Torque Convertor Drive Dozer Size: Approx 4.0 x 1.6 M	1
A-2	BULLDOZER With Straight Tilt Dozer, Fixed Drawbar & Canvas Canopy Max. Horse Power: Approx. 220 PS Drive System: Torque Convertor Drive Dozer Size: Approx. 3.7 x 1.3 M	1
A-3	BULLDOZER With Straight Tilt Dozer, Fixed Drawbar & Canvas Canopy Max. Horse Power: Approx. 160 PS Drive System: Torque Convertor Drive Dozer Size: Approx. 4.0 x 1.0 M	1
A-4	BULLDOZER With Angle Dozer, Fixed Drawbar & Canvas Canopy Max. Horse Power: Approx. 110 PS Drive System: Direct Drive Dozer Size: Approx. 3.7 x 0.9M	1
A-5	DOZER SHOVEL With Standard Bucket & Canvas Canopy Max. Horse Power: Approx. 165 PS Drive System: Torque Convertor Drive Bucket Size: Approx. 1.8 M <sup>3</sup>	1
A-6	DOZER SHOVEL With Standard Bucket & Canvas Canopy Max. Horse Power: Approx. 110 PS Drive System: Direct Drive Bucket Size: Approx. 1.4 M <sup>3</sup>	1
A-7	WHEEL LOADER With Standard Bucket & Canvas Canopy Max. Horse Power: Approx. 235 PS Drive System; Torque Convertor Drive Bucket Size: Approx. 3.5 M <sup>3</sup>	1

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-8	WHEEL LOADER With Standard Bucket & Canvas Canopy Max. Horse Power: Approx. 107 PS Drive System: Torque Converter Drive Bucket Size: Approx. 1.7 M <sup>3</sup>	1
A-9	MOTOR GRADER With Scarifier, Rear Mounted Ripper & Canvas Canopy Max. Horse Power: Approx. 145 PS Drive System: Hydraulic Transmission Blade Size: Approx. 3.7 x 0.5 M	1
A-10	MOTOR GRADER With Scarifier & Canvas Canopy Max. Horse Power: Approx. 115 PS Drive System: Hydraulic Transmission Blade Size: Approx. 3.1 x 0.5 M	1
A-11	DUMP TRUCK Max. Horse Power: Approx. 280 PS Drive System: Torque Converter Drive Max. Carrying Capacity: 20,000 Kg	1
A-12	DUMP TRUCK Max. Horse Power: Approx. 300 PS Drive System; Direct Drive Max. Carrying Capacity: Approx. 10,000 Kg	1
A-13	ROAD STABILIZER Max. Horse Power: Approx. 360 PS Drive System: Max. Mixing Capacity: Approx. 2.0 x 0.37 M	1
A-14	TRACK CRANE Max. Horse Power: Approx. 260 PS Drive System: Direct Drive Max. Crane Capacity 10,000 Kg Boom: 3 Stages Boom Max. Length: Approx. 10.0 M	1
A-15	EXCAVATOR Max. Horse Power: Approx. 108 PS Drive System: Hydraulic Drive Bucket Capacity: Approx. 0.7 M <sup>3</sup>	1

<u>Item</u>		<u>Q'ty</u>
A-16	EXCAVATOR Max. Horse Power: Approx. 90 PS Drive System: Hydraulic Drive Bucket Capacity: Approx. 0.5 M <sup>3</sup>	1
A-17	MOTOR SCRAPER With Rops Canopy Single Engine Max. Horse Power: Approx. 364 PS Drive System: Torque Converter Drive Capacity (Heaped): Approx. 16 M <sup>3</sup>	2
A-18	VIBRATORY ROLLER Max. Horse Power: Approx. 86 PS Vibrating Force: 6.0 - 10 TONS Vibrating Speed: Approx. 2,500 - 3,000 rpm	2
A-19	PNEUMATIC ROLLER Max. Horse Power: Approx. 100 PS Type: Mechanical Compacting Width: Approx. 2 M	1
A-20	AIR COMPRESSOR Max. Horse Power: Approx. 2.5 PS Capacity: 215 M <sup>3</sup> / MIN Pressure: 7.0 Kg/cm <sup>2</sup>	1
A-21	ATTACHMENTS (Concrete Breaker)	3
A-22	GENERATOR Max. Horse Power: Approx. 17 PS Capacity: Approx. 9.5 KW	1
A-23	ASPHALT DISTRIBUTOR Max. Horse Power: Approx. 26 PS Tank Capacity: Approx. 3,000 S.T.D. Spreading Width: Approx. 2.0 M	1

B. ACTUAL MACHINE FOR MECHANIC COURSE

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
B-1	BULLDOZER With Straight Tilt Dozer, Fixed Drawbar & Canvas Canopy Max. Horse Power: Approx. 160 PS Drive System: Torque Converter Drive Dozer Size: Approx. 4.0 x 1.0 M	1
B-2	DOZER SHOVEL With Standard Bucket & Canvas Canopy Max. Horse Power: Approx. 110 PS Drive System: Direct Drive Bucket Size: Approx. 1.4 M <sup>3</sup>	1
B-3	WHEEL LOADER With Standard Bucket & Canvas Canopy Max. Horse Power: Approx. 107 PS Drive System: Torque Converter Drive Bucket Size: Approx. 1.7 M <sup>3</sup>	1
B-4	MOTOR GRADER With Scarifier & Canvas Canopy Max. Horse Power: Approx. 115 PS Drive System: Hydraulic Transmission Blade Size: Approx. 3.1 x 0.5 M	1
B-5	DUMP TRUCK Max. Horse Power: Approx. 300 PS Drive System: Direct Drive Max. Carrying Capacity: Approx. 10,000 Kg	1
B-6	EXCAVATOR Max. Horse Power: Approx. 90 PS Drive System: Hydraulic Drive Bucket Capacity Approx. 0.5 M <sup>3</sup>	1
B-7	AIR COMPRESSOR Max. Horse Power: Approx. 25 PS Capacity: 2.5 M <sup>3</sup> /MIN Pressure: 7.0 Kg/cm <sup>2</sup>	1
B-8	GENERATOR Max. Horse Power: Approx. 17 PS Capacity: Approx. 9.5 KW	1

E-1-C. COMPONENT

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
	1. <u>Engine</u>	
1.	Engine assembly	2
2.	Engine assembly with turbo and main clutch	4
3.	Gasoline engine assembly	2
	2. <u>Torque Converter and Transmission</u>	
1.	Torque converter assembly	4
2.	Torgflow transmission	4
3.	Transmission for loader	2
4.	Transmission	4
	3. <u>Fuel Pump</u>	
1.	Fuel injection pump assembly for small engine	5
2.	Fuel injection pump assembly for big engine	5
3.	Fuel pump	10
	4. <u>Hydraulic</u>	
1.	Hydraulic pump assembly	10
2.	Pump assembly for transmission	4
3.	Hydraulic control valve	4
4.	Steering control valve ass'y	4
5.	Hydraulic pump and regulator for excavator	2
6.	Hydraulic motor for excavator	2
7.	Hydraulic cylinder assembly	6



<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
	5. <u>System Board</u>	
1.	Electric system board for bulldozer	1
2.	Electric system board for truck	1
3.	Hydraulic system board	1
4.	Brake system	1
	6. <u>Differential</u>	
1.	Differential ass'y with banjyo housing	4
2.	Dump transmission	2
	7. <u>Electrical</u>	
1.	Starter motor	4
2.	Alternator	4
3.	Generator	4
4.	Regulator	10

E-2. SPARE PARTS

A.	SPARE PARTS FOR OPERATOR COURSE	1 SET
B.	SPARE PARTS FOR MECHANIC COURSE	1 SET

E-3. SERVICE WORKSHOP FACILITIES

A. EQUIPMENT & TOOLS

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-1	CHASSIS BAY	1 SET
A-2	ENGINE REPAIR SHOP	1 SET
A-3	ENGINE DYNAMOMETER ROOM	1 SET
A-4	HYDRAULIC COMPONENT TEST ROOM	1 SET
A-5	FUEL INJECTION PUMP, ELECTRICAL COMPONENT & BATTERY ROOM	
A-5-1	FUEL INJECTION PUMP ROOM	1 SET
A-5-2	ELECTRICAL COMPONENT ROOM	1 SET
A-5-3	BATTERY ROOM	1 SET
A-6	POWER LINE HYDRAULIC & TIRE SERVICE REPAIR SHOP	1 SET
A-6-1	POWER LINE REPAIR BAY	1 SET
A-6-2	TIRE SERVICE BAY	1 SET
A-7	MACHINE SHOP	1 SET
A-8	WELDING & UNDERCARRIAGE REBUILDING SHOP	
A-8-1	WELDING & FABRICATION BAY	1 SET
A-8-2	UNDERCARRIAGE SHOP	1 SET
A-9	COMPRESSOR ROOM	1 SET
A-10	CLEANING & PAINTING EQUIPMENT	1 SET
A-11	PARTS WAREHOUSE	1 SET
A-12	TOOL ROOM	1 SET

MAJOR SHOP EQUIPMENT ARE AS FOLLOWS:

A-1 Chassis Bay

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-1-1	Overhead Crane, Double Beam Type with Direction Board Rail less travel wheel Capacity : 5 ton	1
A-1-2	Mobile Work Bench (Wood Cover) With Vise	1 set
A-1-3	Parts Rack	1 set
A-1-4	Parts Wagon with casters and 4 shelves	1 set
A-1-5	Mechanic Tool Set For Construction Equipment	4
A-1-6	Tool Cabinet	4
A-1-7	Parts Cleaner Tank : 100 lit.	1
A-1-8	Hydraulic Garrage Jack Capacity : 10 ton	2
A-1-9	Transmission Jack Capacity : 1,800 kg	1
A-1-10	Fork Lift, 2.5 ton Capacity	1

A-2 Engine Repair Shop

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-2-1	Over Head Crane Double Beam Type with Direction Board Rail less travel wheel Capacity : 3 ton	1
A-2-2	JIB Crane, Wall Type with Chain Block, 4 Button Type Capacity : 1 ton	2
A-2-3	Mobile Floor Crane Capacity : Max. 2 ton	1
A-2-4	Hydraulic Press Capacity : 35 ton	1
A-2-5	Work Bench with Cabinet and Locker	1 set
A-2-6	Bench Electric Grinder	1
A-2-7	Bench Drill Press Capacity : 13 mm	1
A-2-8	Engine Stand Service cap. : 3,000 kg	4
A-2-9	Parts Rack	1 set
A-2-10	Parts Wagon with casters and 4 shelves	1 set
A-2-11	Cylinder Head Work Bench	1
A-2-12	Parts Cleaner	1
A-2-13	Valve Refacer	1
A-2-14	Valve Spring Tester	1
A-2-15	Piston Heater (Bearing Heater)	1
A-2-16	Connecting Rod Aligner	1
A-2-17	Tool Cabinet	4
A-2-18	Mechanic Tool Set for Construction Equipment	4
A-2-19	Cylinder Head Hydraulic Stand	1
A-2-20	Steam Cleaner	1
A-2-21	Mobile Work Bench (Lift Type)	1 set
A-2-22	Tool Locker	1 set

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-2-23	Parts Cleaner with One Basket	1
A-2-24	Connecting Rod Boring Machine	1
A-2-25	Surface Grinder	1
A-2-26	Cylinder Boring Machine	1
A-2-27	Main Line Boring Machine	1
A-2-28	Honing Machine	1
A-2-29	Crankshaft Grinder	1
A-2-30	Crankshaft Rebuilding Machine	1
A-2-31	Valve Seat Grinder	1
A-2-32	Machinists Vise	1

A-3 Engine Dynamometer Room

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-3-1	Engine Dynamometer with Panel Stand	1
A-3-2	Engine Stand & Bed	1
A-3-3	Fuel Tank with Stand	1
A-3-4	Cooling Water Tank For Engine with Stand	1
A-3-5	Water Supply Pump	2
A-3-6	Fuel Consumption Meter	1
A-3-7	Work Bench with Cabinet and Locker	1
A-3-8	Parts Rack	1
A-3-9	Tool Locker & Cabinet	1

A-4 Hydraulic Component Test Room

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-4-1	Hydraulic Component Universal Tester	1
A-4-2	Parts Rack	1 set
A-4-3	Mechanic Tool Set	6
A-4-4	Electric Chain Block with Gear Trolley	1
A-4-5	Mobile Work Bench	1

A-5 Fuel Injection Pump Room

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-5-1	Diesel Fuel Injection Pump	1
A-5-2	Pump Test Stand	1
A-5-3	injector Flow Comparator	1
A-5-4	Nozzle Tester	1
A-5-5	Work Bench	6
A-5-6	Engineers Vise	10
A-5-7	Mechanic Tool Set with English Size Tool	10
A-5-8	Tool Cabinet	2
A-5-9	Parts Cleaner	1
A-5-10	Parts Rack	1 set

Electric Component Room

A-5-11	Starter Generator Test Bench	1
A-5-12	Motor Puller Set	1
A-5-13	Work Bench	1
A-5-14	Engineers Vise	1
A-5-15	Tool Cabinet	1

Battery Room

A-5-16	Silicon Quick Charger with Normal Charge	1
A-5-17	Parts Rack	1 set
A-5-18	Water Purifier	1

A-6 Power Line Hydraulic repair Bay

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-6-1	Unit Repair Stand	4
A-6-2	Mechanic Tool Set For Construction Equipment	4
A-6-3	Tool Cabinet	4
A-6-4	Mobile Work Bench (Lift Type) with Vise	1 set
A-6-5	Parts Rack	1 set
A-6-6	Parts Wagon with Caster and 4 Shelves	1 set
A-6-7	Hydraulic Cylinder Service Stand	1
A-6-8	Jib Crane, Wall type	1
<u>Tire Service Bay</u>		
A-6-9	Hydraulic Tire Removing Tool Tire size:OR tire 12.00-26.00 Ram Capacity: 10 ton	1
A-6-10	Tire Spotter Set	1
A-6-11	Work Bench with 1 Drawer and Shelves	1
A-6-12	Tool Cabinet	1



A-7 Machine Shop

<u>Item</u>	<u>Description</u>	<u>Q' ty</u>
A-7-1	Precision Lathe Swing over bed: not less than 500 mm Distance between center: 1,500 mm	3
A-7-2	Upright Drilling Machine Drilling capacity: not less than 50 mm dia.	1
A-7-3	Bench Drill Press Capacity: not less than 23 mm	1
A-7-4	Universal Milling Machine	1
A-7-5	Shaping Machine with Standard Accessories	1
A-7-6	Hack Sawing machine	1
A-7-7	Bench Electric Grinder	1
A-7-8	Work Bench with 1 Drawer and 1 Shelf	2
A-7-9	Parts Locker	1 set
A-7-10	Parts Rack	1 set
A-7-11	Mobile Floor Crane	1
A-7-12	Bar Rack	1
A-7-13	Tool Locker and Cabinet	1 set

A-8 Welding & Fabrication Bay

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-8-1	A. C Arc Welder	2
A-8-2	Electrode Drier	2
A-8-3	CO <sub>2</sub> -Gas Shield Arc Welder	1
A-8-4	Gas Welder Set	4
A-8-5	Iron Anvil, Cast Iron, 70 kg	1
A-8-6	Cast Iron Swage Block	1
A-8-7	High-speed Abrasive Cut-Off Machine	1
A-8-8	Partition for Welding	1 set
A-8-9	Hand Lever Shear	1
<u>Undercarriage Shop</u>		
A-8-10	Roller Idler Press	1
A-8-11	Conveyor Stand for Roller Line	1
A-8-12	Track Press with Hydraulic Winch	1
A-8-13	Shoe Bolt Impact Wrench	1
A-8-14	4 Conveyors and Shoot	1
A-8-15	Track Link Rebuilding Machine Kit	1
A-8-16	Track Link Welding Bed	1
A-8-17	Roller Idler Attachment	1
A-8-18	Electric Grinder with Stand & Glass	1
A-8-19	Parts Wagon with Casters and 4 Shelves	1 set
A-8-20	Track Link Hanger	1
A-8-21	Tool Cabinet	1
A-8-22	Hydraulic Press (100 ton)	1

A-9 Compressor Room

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-9-1	Air Compressor 1,600 l/min.	1

A-10 Cleaning & Painting Equipment

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-10-1	Hot Water High Pressure Washer	1
A-10-2	Steam Cleaner	1
A-10-3	Air Compressor with Water Separator Approx. 350 liter/min.	1

A-11 Parts Warehouse

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
A-11-1	Parts Racks	1 set
A-11-2	Parts Truck	1 set
A-11-3	Power Lifter Max. Capacity: 600 kg	1

A-12 Tool Room

Torque Multiplier	1 set
Torque Wrench	
General Tools	

E-3-B. Special Tool

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
B-1	Special tools for engine	1 set
B-2	Special tools for bulldozer, dozer shovel, wheel loader, dump truck, motor grader	1 set

E-3-D-1. CUTAWAY MODELS

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
1. <u>Cutaway Models</u>		
a. <u>Engine</u>		
1.	Engine assembly	1
2.	Fuel injection pump	1
3.	Fuel pump	1
4.	Injector	1
5.	Water pump	1
6.	Full flow oil filter	1
7.	Turbocharger	1
b. <u>Torqflow system</u>		
1.	Torque converter	1
2.	Torqflow transmission	1
3.	Transmission control valve	1
c. <u>Steering clutch</u>		
1.	Steering clutch	1
d. <u>Undercarriage</u>		
1.	Track roller	1
2.	Track link	1
e. <u>Electrical system</u>		
1.	Starting motor	1
2.	Alternator	
f. <u>Hydraulic system</u>		
1.	Hydraulic pump	1
2.	Hydraulic control valve	1

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
	g. <u>Brake system</u>	
1.	Brake booster	1

E-3-D-2. Plastic Model

<u>Item</u>	<u>Description</u>	<u>Q'ty</u>
1.	Mini-Plastic model of planetary gears	1
2.	Plastic model of torque converter	1
3.	Plastic model of planetary gears	1
4.	Automobile chassis model	1
5.	2 cycle engine principal	1
6.	4 cycle engine principal	1
7.	Transmission model	1
8.	Differential model	1
9.	Front alignment model	1
10.	Turning radius model	1
11.	Wheel balance model	1

E-4-B. SLIDES

- |    |                           |       |
|----|---------------------------|-------|
| a. | General                   | 1 set |
| b. | Operation and Maintenance | 1 set |
| c. | Structure and Function    | 1 set |
| d. | Disassembly and Assembly  | 1 set |

E-4-C. OVERHEAD TRANSPARENCIES

- |    |                   |       |
|----|-------------------|-------|
| a. | General           | 1 set |
| b. | Diesel Engine     | 1 set |
| c. | Torque Convertor  | 1 set |
| d. | Electrical System | 1 set |
| e. | Hydraulic System  | 1 set |
| f. | Others            | 1 set |

E-5. OTHERS

- |    |   |        |
|----|---|--------|
| A. | SERVICE VAN<br>With Service Tools<br>Drive: 4 x 4 | 1 UNIT |
| B. | MICRO BUS FOR FIELD<br>TRAINING 29 PASSENGERS     | 1 UNIT |
| C. | FUEL DIESEL STATION &<br>2 - 9.6 KL TANK          | 1 SET  |







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