According to the construction plan drawings for the new stations as submitted by the Giza Civil Defence and Fire Department, sufficient accommodating spaces for the trucks are ensured.

(3) Fire trucks scheduled to be alotted to the existing stations

Nine existing fire stations, except for those in remote area, were studied and some were found not to have sufficient parking space for the trucks to be procured. It was, however, confirmed that the Giza Civil Defence and Fire Department has a plan to extend the garage space to accommodate the said trucks.

4.3.2 Equipment and Materials Plan

Details of the equipment and materials planned for the procurement under the project are as follows;

Table 4-1 Allotment Plan of Requested Fire Trucks & Radio Units ※Planned ○Request rank

Zone	No.	Fire Station	46m Ladder	27m Ladder	Rescue Truck	Light Chem.	Medium Chem.	Total	Radio Sta.
Main Station (1 Station)	1	Headquarters				2	1	3	◎ ①
North Zone (7 Stations)	2	El Mansouria							☆ ⑦
	3	Mohawlat 500 (Transformers 500)							
	4	Mohawlat West (Transformers West)							
	5	Mobika							
	6	Ossim							
	7	Wardan							○ ⑥
	8	El Naki El Khafih (El Tramco)				1		1	
		Total				1		1	
Middle Zone (15Stations)	9	Embaba				1	1	2	
	10	Master Embaba							
	11	El Warak				1		1	
	12	※El Sudan ST.	1		1	1	1	4	
	13	El Agouza					1	1	
	14	El Massl Wal-Lekkah				1		1	
	15	El Messaha							
	16	Kafr Tohormoss					1	1	
	17	Kerdassa							
	18	El Talbiya(Tamia)					1	1	
	19	※Sayed Darwish		1			1	2	
	20	El Studio				1		1	
	21	El Monib							
	22	※El Omrania				1	1	2	
	23	Hamadan				1		1	
		Total	1	1	1	7	7	17	
South Zone (9 Stations)	24	Mit-Rahina							☆ ⑧
	25	El Hawamdia							☆ ⑪
	26	Miniet Shiha							
	27	Abul Nomross				1		1	
	28	Tamoh							
	29	El Ayyat							☆ ④
	30	El Badrashein				1	1	2	○ ⑤
	31	El Safe				1		1	○ ③
	32	※Atfih				1	1	2	☆ ②
		Total				4	2	6	
Six October Zone (4 Stations)	33	Six-Octorber							
	34	Seven-Octorber							
	35	※Massanea 1(GMC)				1		1	☆ ⑩
	36	※Massanea 2 (Suzuki Factory)					1	1	☆ ⑨
		Total				1	1	2	
Oasis Zone (1 Station)	37	El Wahat El Bahariya (Oasis)					1	1	
TOTAL			1	1	1	15	12	30	11

Radio station ◎ : Headquarters Telecommunication Station & Transmitting Station
○ : Repeater Station
☆ : Fixed Station

Specification
of
46M CLASS AERIAL LADDER TRUCK

1. Truck Chassis

1)	Engine	:	Not less than 270ps (Diesel)
2)	Drive	:	6 × 4, Manual Transmission
3)	Steering	:	LHD (Power assisted)
4)	Cabin	:	All steel, Forward control type single cabin.
			Seating capacitity : 3 persons
5)	Dimension and weight		Overall length : not more than 12.5m
			Overall width : not more than 2.5m
			Overall height : not more than 3.9m
			G.V.W, : not less than 18,000kgs

2. Aerial Ladder

1)	Type	:	All steel, 6 - section type
2)	Maximum height	:	46M
3)	Elevation angle	:	-10 ～75 degrees
4)	Rotation angle	:	360 degrees
5)	Obliquity adjust	:	Up to 7 degrees automatically adjusted, Turntable leveling type
6)	Lifter	:	2 persons, (or 180kg) Interphone device
7)	Basket	:	2 persons, (or 180kg) Detachable type Interphone device
8)	Monitor	:	Ladder Top and Basket ea.1
9)	Safety device	:	Necessary automatically ladder stop system
10)	Auxiliary pump	:	Motor type

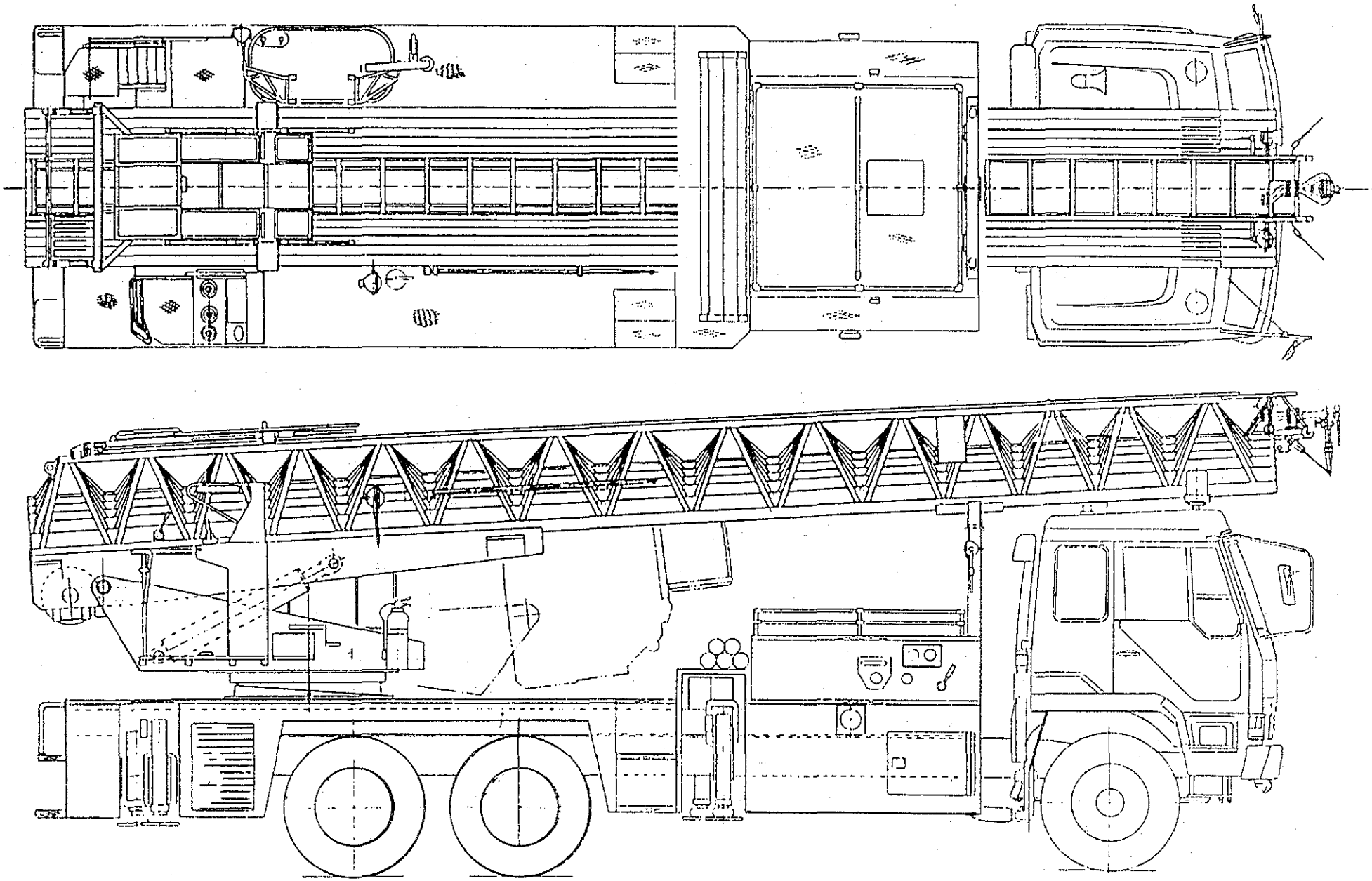
3. Pump

1)	Water pump	:	2 stage centrifugal pump, driven by a truck engine through P.T.O.
	Performance	:	Not less than 2,800L/min. at total head 10.5kg/㎠
2)	Priming pump	:	650mm Hg within 30 sec.
3)	Suction inlet	:	BS thread, 100mm. One on each side, total two
4)	Delivery outlet	:	BS instantaneous coupling 65mm. One on each side, total two
5)	Pump operation divice	:	One on each side, total two

4. Accessories & Equipments

1)	Wooden planks for jack and tire	each 4	
2)	Oil funnel	1	
3)	Vinyl tube for bleeding air 12mm × 3m	1	
4)	Red rotation lamp	2	
5)	Electric motor siren with loud speaker	1	
6)	Portable search light(Top of ladder 50W)	2	
7)	Cord reel(30m)	2	
8)	Sockets(Top of ladder 50W)	2	
9)	Wheel chock	2	
10)	Spare tire with wheel	2	sets
11)	Paint & compound for repair	1	set
12)	Suction hose 100 mm × 2 m	4	
13)	Strainer for suction hose	2	sets
14)	Rope for suction hose 10mm × 10m	2	
15)	Delivery hose with coupling 65mm× 30m	10	
16)	Hose for ladder 65mm × 55m	2	
17)	Nozzle, water 65mm	2	
18)	Variable nozzle tip for 65mm water nozzle	2	
19)	Nozzle tip 23, 26mm	each 1	
20)	Fire axe	2	
21)	Fire hook	1	
22)	Fire helmet	5	
23)	Fire suit	5	
24)	Fire glove	5	sets
25)	Fire boots	5	sets
26)	Air breathing apparatus set(with one spare cylinder)	2	sets
27)	Dry powder extinguisher (for vehicle)	1	
28)	Chassis tool kit	1	set

46M CLASS AERIAL LADDER TRUCK



Specification
of
27M CLASS AERIAL PLATFORM TRUCK

1. Truck Chassis
   1) Engine : Not less than 270ps(Diesel)
   2) Drive : 6 × 4, Manual Transmission
   3) Steering : LHD (Power assisted)
   4) Cabin : All steel, Forward control type single cabin.
      Seating capacity : 3 persons
   5) Dimension and weight
      Overall length : not more than 12.5m
      Overall width : not more than 2.5m
      Overall heighit : not more than 3.9m
      G.V.W. : not less than 18.000 kgs

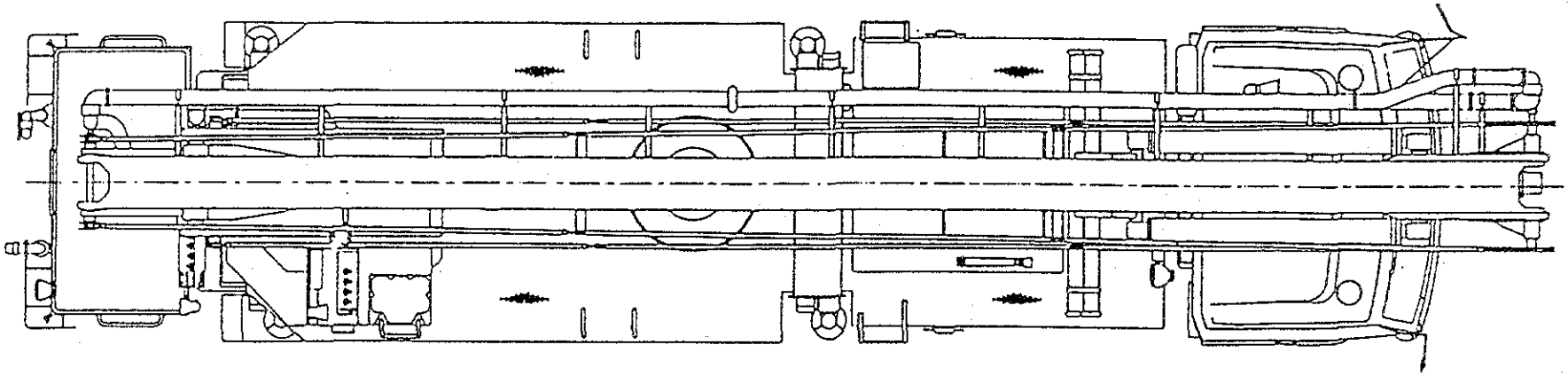
2. Aerial Platform
   1) Type : All steel, 3 - booms type
   2) Maximum height : 27M
   3) Rotation angle : 360 degrees
   4) Basket(Cage) : 3 persons. (or 365kg) Interphone device
      : Coupling for 38mm hose at the basket
      : Independnt on/off fanction for spray nozzle at the basket
   5) Water pipe for Basket(Cage): Steel pipe
   6) Monitor : Basket 1
   7) Safety device : Fail safe device ageinst damaged pipes and necessary automatically boom stop system
   8) Auxiliary pump : Motor type

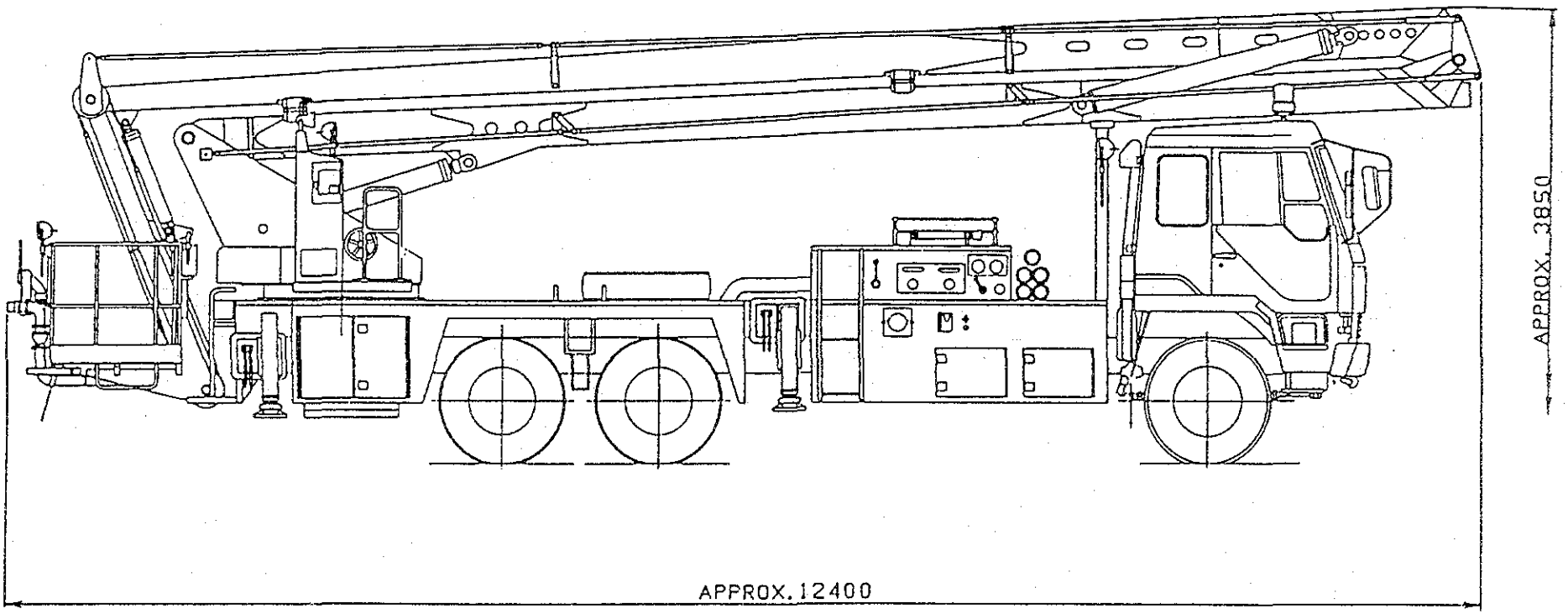
3. Pump
   1) Water pump : 2 stage centrifugal pump, driven by a truck engine through P.T.O.
      Performance : Not less than 2,800L/min at total head 10.5kg/cm²
   2) Priming pump : 650mm Hg within 30 sec.
   3) Suction inlet : BS thread, 100mm. One on each side, total two
   4) Delivery outlet : BS instantaneous coupling 65mm. Two on each side, total four
   5) Pump operation device : One on each side, total two

4. Accessories & Equipments

1)	Wooden planks for jack and tire	each 4	
2)	Oil funnel	1	
3)	Vinyl tube for bleeding air 12mm × 3m	1	
4)	Red rotation lamp	2	
5)	Electric motor siren with loud speaker	1	
6)	Portable search light	2	
7)	Cord reel(30m)	2	
8)	Wheel chock	2	
9)	Spare tire with wheel	2	sets
10)	Paint & compound for repair	1	set
11)	Suction hose 100mm × 2 m	4	
12)	Strainer for suction hose	2	sets
13)	Rope for suction hose 10mm × 10m	2	
14)	Delivery hose with coupling 65mm × 20m	10	
15)	Nozzle, water 65mm	2	
16)	Variable nozzle tip for 65mm water nozzle	2	
17)	Nozzle tip 23, 26mm	each 1	
18)	Delivery house with coupling 38mm ×20m	3	
19)	Nozzle water(38mm)	1	
20)	Variable nozzle tip for 38mm water nozzle	1	
21)	Fire axe	2	
22)	Fire hook	1	
23)	Fire helmet	5	
24)	Fire suit	5	
25)	Fire glove	5	sets
26)	Fire boots	5	sets
27)	Air breathing apparatus set(with one spare cylinder)	2	sets
28)	Dry powder extinguisher (for vehicle)	1	
29)	Chassis tool kit	1	set

27M CLASS AERIAL PLATFORM TRUCK





Specification
of
RESCUE TRUCK

1. Chassis

1)	Engine	:	not less than 160PS (Diesel)
2)	Drive	:	4 × 4, manual
3)	Stearing	:	L.H.D. (Power assisted)
4)	Cabin	:	All steel, forward control type, double cabin,
			Seating capacity : not less than 6 persons
5)	Dimension		Overall length : not more than 8.0m
	and weight		Overall width : not more than 2.4m
			Overall height : not more than 3.8m
			G.V.W. : not Less than 9,000 kgs

2. Superstructure

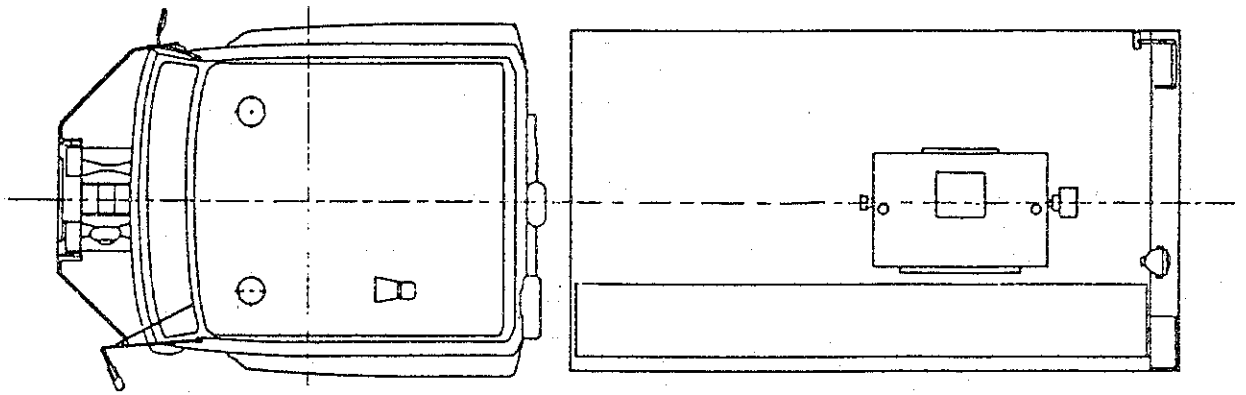
1)	Winch	:	Installed in front of cabin
			Capacity : not less than 5,000kg
2)	Equipment locker		: Roller shutter type
			3 on both sides of the vehicle
3)	Flood light	:	Installed on top of the vehicle
			not less than 8 halogen lamps 100V-500W
4)	Generator	:	Installed in middle of the vehicle
			Driven by independent engine(Diesel engine)
			not less than 220V-10KVA
5)	Telescopic tower		: Max hight 5m
			Turning degree 350°

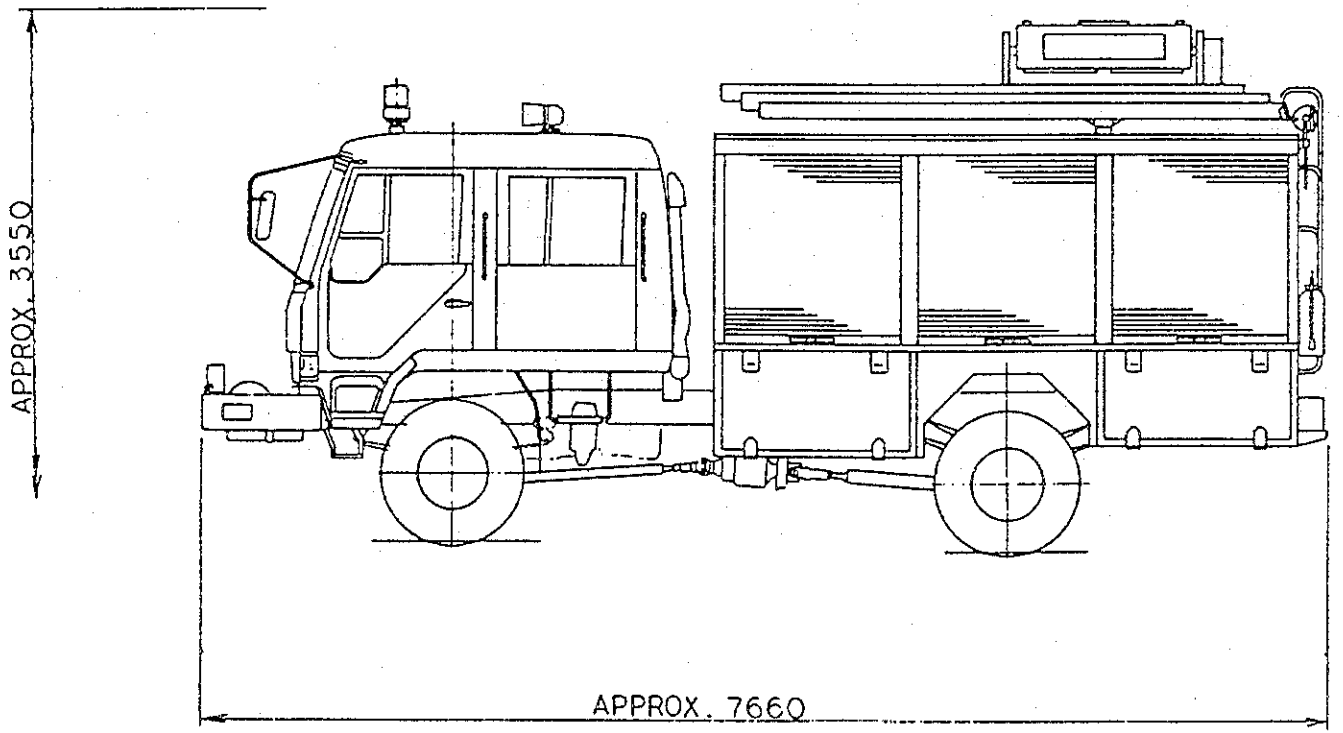
3. Equipments and Accessories

1)	Red rotation lamp	2
2)	Electric motor siren with loud speaker	1
3)	Hydraulic spreader (large type)	1 set
4)	Hydraulic cutter (large type)	1 set
5)	Hydraulic spreader (small type)	1 set
6)	Hydraulic cutter (small type 75m-100m wide)	1 set
7)	Engine chain saw for wood	1 set
8)	Engine cutter(multi purpse saw)for metal and concrete	1 set
9)	Air forcing bag 10, 20, 40 ton with one cylinder	1 set
10)	Submersible pump	1 set
11)	Pump for mixing liquids with chemicals	1 set
12)	Portable electrical generator	1 set
13)	Smoke ejector (70㎥/min electric powred)	2 sets

14) Rescue air cushion ..... 1 set
   a Surface area : Not less than 9.6㎡
   b Weight : 23 kgs
   c Hand-inflated type
   d Max Jumping hight approx 5m
15) Vibraphone set ..... 1 set
16) Automatic personal distal ..... 10 sets
17) Resascitator ..... 5 sets
18) Air compressor ..... 1 set
19) Hydraulic jack 10 ton ..... 1 set
20) Portable winch ..... 1 set
21) Jack 25 ton ..... 1 set
22) Portable search light 50w 1
23) Cord reel(30m) 1
24) Electric torch ..... 5 sets
25) Light alloy extension ladder 8m 1
26) Insulated cutter 10,000v 3
27) Ordinary fire gloves 7
28) Electric-proof gloves 7
29) Heat resistant sglove 7
30) Ordinary fire branket 7m × 3m 1
31) Wooden bridge 4
32) Nylon rescue rope 20m with hook 5
33) Safety belt 2
34) Rescue rope 200m with hook 1
35) Guide rope 20m 2
36) Hammer 5kg～10kg 2
37) Rescue axe 5
38) Fire hook 2
39) Fire helmet 5
40) Fire suit 5
41) Fire glove ..... 5 sets
42) Fire boots ..... 5 sets
43) Air breathing apparatus set(with one spare cylinder) ..... 6 sets
44) Dry powder extinguisher (for vehicle) 1
45) Spare tire with wheel ..... 2 sets
46) Chassis tool set ..... 1 set

RESCUE TRUCK





Specification
of
MEDIUM CHEMICAL TRUCK (3500 ℓ W/T × 350 ℓ F/T)

1. Truck chassis
   1) Engine : Not less than 200ps (Diesel)
   2) Drive : 4 × 2, Manual Transmission.
   3) Steering : LHD (Power assisted)
   4) Cabin : All steel, Forward control type double cabin
   5) Dimension and weight
      Seating capacity : not less than 6 persons
      Ovreall length : not more than 8m
      Ovreall wigth : not more than 2.5m
      Ovreall heigth : not more than 3.5m
      G.V.W. : not less than 12.000kgs

2. Pump, Water tank and foam liquid tank
   1) Water pump : 2-staged centrifugal pump,
      driven by a truck engine through P.T.O.
      Performance : Not less than 3200 ℓ /min
      at total head 8.0kg/cm²
      High Pressure capacity:
      Not less than 250 ℓ /min
      at total head 40kg/cm²
   2) Priming pump : 650 mm Hg within 30 sec.
   3) Suction Inlet : BS thread, 100mm
      One on both side, total Two
   4) Delivery outlet : a) BS instantaneous coupling 65mm
      One on each side, total two
      b) BS instantaneous coupling 38mm
      One on each side, total two
   5) Pump operation device : One on each side, total two
   6) Water tank : All steel, square type
      Capacity : Not less than 3500 ℓ
   7) Foam liquid tank : Stainless steel, square type
      Capacity : Not less than 350 ℓ
   8) Proportioning system : Around the Pump proportioner type
      Solution ratio : 3% or 6%

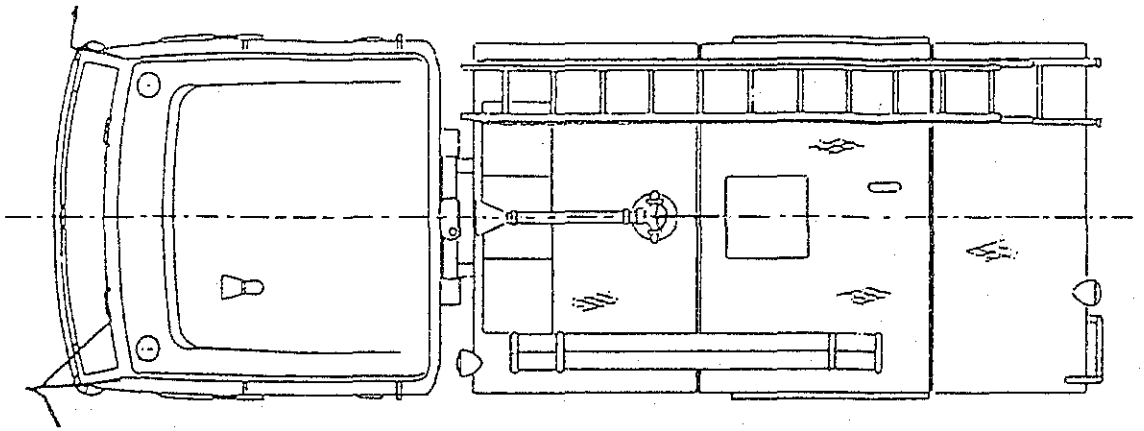
3. Monitor : Manual type,
   Mounted on the top of the pump compartment.
   Discharge capacity : Not less than 2000 ℓ /min at 14kg/cm²

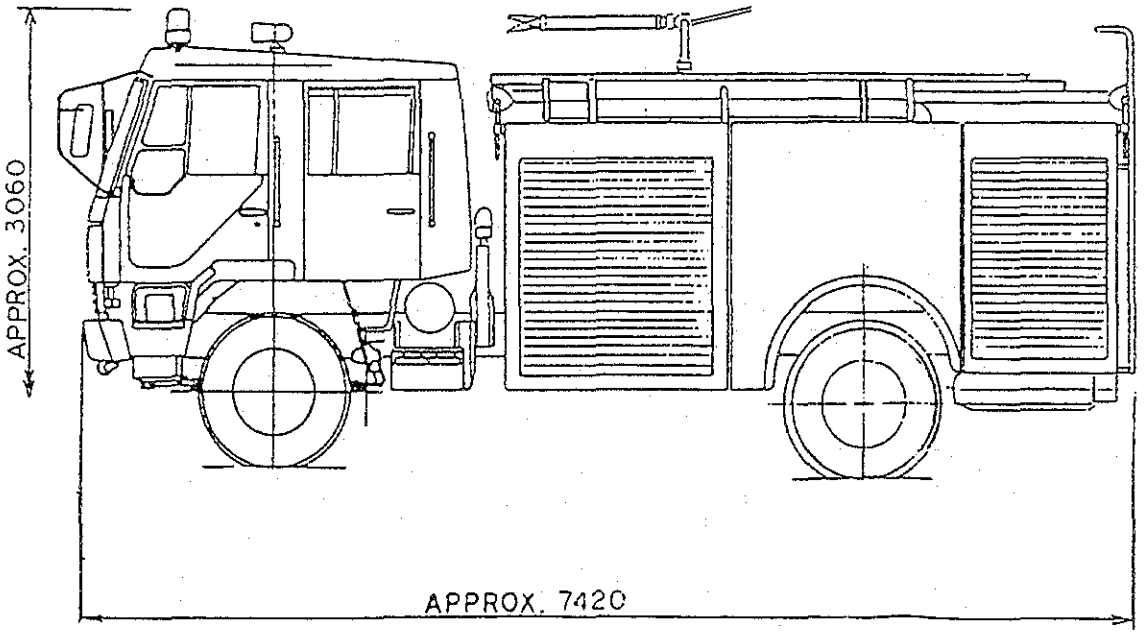
4. Booster hose reel : One in the compartment of each side of vehicle, total two
Providid with a hight pressure rubber hose of 24.5mm×30m with variable nozzle

5. Accessories & Equipments

1)	Red rotation lamp	2
2)	Electrical motor siren with loud speaker	1
3)	Wheel chock	2
4)	Spare tire with wheel	2 sets
5)	Paint & compound for repair	1 set
6)	Suction hose 100 mm × 2 m	4
7)	Strainer for suction hose	2 sets
8)	Rope for suction hose 10 mm × 10 m	2
9)	Delivery hose, with coupling 65 mm × 20 m	10
10)	Delivery hose, with coupling 38 mm × 20 m	10
11)	Nozzle water 65 mm	2
12)	Nozzle water 38 mm	2
13)	Nozzle, airfoam	2
14)	Variable nozzle tip for 65mm & 38mm water nozzle	each 2
15)	3 sections light alloy extension ladder not less than 11m	1
16)	Monitor nozzle (water, foam each 1)	2
17)	Fire helmet	5
18)	Fire suit	5
19)	Fire glove	5 sets
20)	Fire boots	5 sets
21)	Air breathing apparatus set(with one spare cylinder)	2 sets
22)	Dry powder extinguisher (for vehicle)	1
23)	Chassis tool kit	1 set

MEDIUM CHEMICAL TRUCK (3500ℓW/T×350ℓF/T)





Specificaiton
of
LIGHT CHEMICAL TRUCK (1000 ℓ W/T × 100 ℓ F/T)

1. Truck Chassis
   1) Engine : Not less than 90ps (Diesel)
   2) Drive : 4 × 4 Manual Transmission
   3) Steering : LHD (Power assisted)
   4) Cabin : All steel, Forward control type double cabin
      Seating capacity : not less than 6 persons
   5) Dimension
      Overall length : not more than 6.5m
      Overall width : not more than 2.4m
      Overall height : not more than 3.5m
      G.V.W. : not less than 5,000 kgs

2. Pump, Water tank and foam liquid tank
   1) Water pump : 2-staged centrifugal pump,
      driven by a truck engine through P.T.O.
      Performance : Not less than 2200 ℓ /min at total head
      10.5kg/cm²
      High pressure capacity :
      Not less than 200 ℓ /min at total head
      40kg/cm²
   2) Priming pump : 650 mm Hg within 30sec.
   3) Suction Inlet : BS thread, 100mm
      One on rear of the vehicle, total one
   4) Delivery outlet : BS instantaneous coupling 65mm
      Two on rear of the vehicle, total two
   5) Pump operation device : One on rear of the vehicle, total one
   6) Water tank : All steel, square type
      Capacity : Not less than 1000 ℓ
   7) Foam liquid tank : Stainless steel, square type
      Capacity : Not less than 100 ℓ
   8) Proportioning system:
      Around the Pump proportioner type
      Solution ratio : 3% or 6%

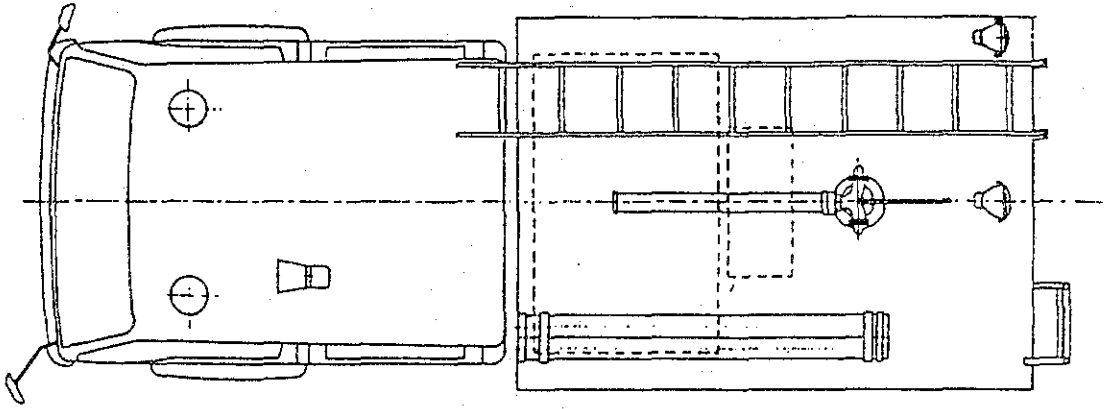
3. Monitor : Manual type, Mounted on the top of the pump compartment.
   Discharge capacity : Not less than 1200 ℓ /min at 7kg/cm²

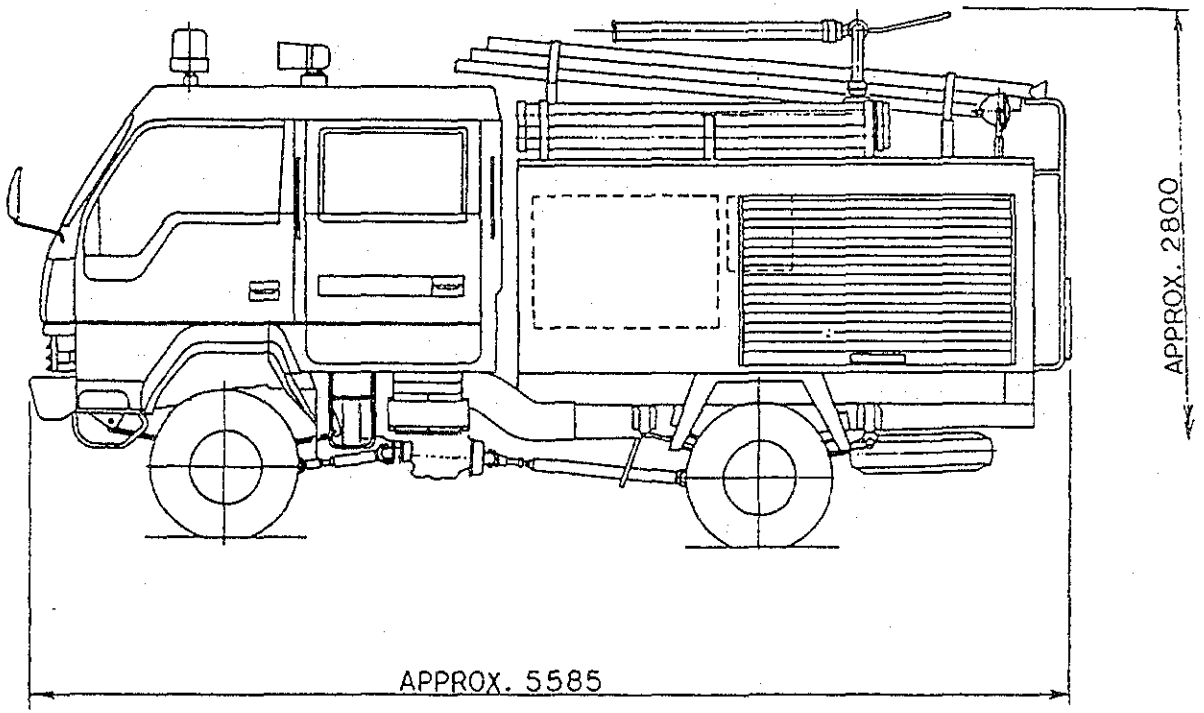
4. Booster hose reel : One in the compartments of each sides of vehicle, total Two
   provided with a high pressure rubber hose of 24.5mm × 30m with Variable Nozzle

5. Accessories & Equipments

1)	Red rotation lamp	2
2)	Electric motor siren with loud speaker	1
3)	Wheel chock	2
4)	Spare tire with wheel	2 sets
5)	Paint & compound for repair	1 set
6)	Suction hose 100 mm × 2 m	4
7)	Strainer for suction hose	2 sets
8)	Rope for suction hose 10 mm × 10 m	1
9)	Nozzle, water 65mm	2
10)	Nozzle, airfoam	2
11)	Variable nozzle tip for 65mm water nozzle	2
12)	Delivery hose, with coupling 65 mm × 20 m	10
13)	3 sections light alloy ladder not less than 7m	1
14)	Monitor nozzle (water, Foam each 1)	2
15)	Fire helmet	5
16)	Fire suit	5
17)	Fire glove	5 sets
18)	Fire boots	5 sets
19)	Air breathing apparatus set(with one spare cylinder)	2 sets
20)	Dry powder extinguisher (for vehicle)	1
21)	Chassis tool kit	1 set

LIGHT CHEMICAL TRUCK (1000ℓW/T×100ℓF/T)





(2) Fire Fighting Radio Communication System

Planning List of Radio Communication Material

No.	Material	Q'ty	Specifications
1	Telecommunication Station		
1.1	Remote Controler	1set	a Structure ; Desk-top type b Remote control can operate both Wire line (existing/reserving equipment). c Control Item 1 Power ; on/off 2 Ch.Select ; 01~99 3 SQ Control ; Open,Threshold,Midium,Tight 4 Operational mode select 5 Base or Repeaters Mode Select 6 To select and call(Mobille/Fixed Station (Group/all station) by 5 tone 7 Power supply ; AC220V, DC12V(Stand-by Batt.) 8 Display ;To indicate necessary item such as available channel,transmit or receive mode,mode select etc.
1.2	Power supply Unit	1set	a AC220V,DC13.6V±20% b To apply floating system by connecting battery for back-up when electricity failure happens. c To connect Battery for maintenance-free more than 48AH(20HR):2 units in series.

No.	Material	Q'ty	Specifications
2	Transmitting Station		
2.1	Radio unit (150MHZ)	1set	a Structure etc. Rack-mounting type,150MHZ,Transmitter-receiver unit 2,Power suplly unit 2,Interface unit 2. b Main Performance [Transmitter] 1 Frequency Range;150 ~174MHZ 2 Simplex,Semi-duplex,Duplex(by duplexer) 3 Channel separation 12.5KHZ 4 Namber of Channel; 99Channels 5 Output Power; 25~50W 6 Freq.Deviation ±2.5KHZ 7 Mode of operation ; Simplex, Semi-duplex(Press to Talk), Duplex(with Ant. duplexer) 8 Modulation ; PM(FM) 9 Antenna Impedance ; 50Ω Unbalanced 10 DC 13.6V±20% (-)grounded AC 220V±10% 50/60HZ Single phase 11 Power consumption DC AC Stand-by 1.0A 75VA Receive 1.5A 90VA transmit(50W) 12A 350VA 12 Pre-emphasis Within +1,-3db of 6db/octave 300~3,000HZ,1000HZ Reference 13 Modulation distortion ; 60%Mod.,<5%(AT 1KHZ) 14 Spurious & harmonecs emistion ; > 70db(below carrier) 15 Mic Imp.; 600Ω

No.	Material	Q'ty	Specifications
			[Receiver] 16 Intermediate Freq.; 2ndIF 455KHZ 17 Sensitivtiy ; under0.5 μV 20db noise quieting 18 Squelch;sensitivity<0.25μV 19 Intermoulation distortion>70db 20 Sperious response >80db 21 De-emphasis Within +1,-3db of 6db/octave 300～3,000HZ,1000HZ Reference 22 Audio Output 2W 23 Audio distortion < 5%
2.2	Interface	1set	a To connect repeater with Trans-Receiver Transmitter-receiver unit(150MHZ). b The performance is as same as that of 1.1 Controler.
2.3	Antenna 150MHZ	1set	c Omnidirectorical Vertical Antenna(exising/reserving equipment each 1) d Frequency Range; 150～174MHZ e V.S.W.R.; <1.5 f Gain; >6db 以上 g Imp.; 50Ω h Rated Power ; 100W
2.4	Feeder 150MHZ	120m ×1	a Type; Coaxial cable,including Connecter b Imp.; 50Ω c loss/m(200MHZ) 120m ··· < 0.024db

No.	Material	Q'ty	Specifications
		100m ×1	100m ··· < 0.04 db d V.S.W.R.; < 1.2
2.5	Power suplly unit	1set	a Two units for Transmitting station b The performance is as same as that of 1.2
3	Repeater Station		
3.1	Radio unit (150MHZ)	3 sets	a Structure Rack-mounting type,150MHZ,Trans-receiver unit 2,Power suplly 2,Interface 2. b Main Performance The performance is as same as that of 2.2 (150MHZ)
3.2	Antenna (150MHZ)	3 sets	The performance is as same as that of 2.3
3.3	Feeder	50m ×6	a Consistor; For Repeater st. Existing/ Reserving Each 1 (Wardan,El Badrashein,El Saf) b 1 Type; Coaxial cable,including Connecter 2 Imp.; 50Ω 3 loss/m(200MHZ); < 0.04 db 4 V.S.W.R.; < 1.2
3.4	Antenna duplexer (150MHZ)	3 sets	To insert it between Radio (exsiting/reserving/equipment/each 1) and feeder. a Frequency range;150 ～174MHZ

No.	Material	Q'ty	Specifications
			b Channel Separation between Fx—Rx >2MHZ c Insert loss;Transmission <1.5db Receiver <1.5db d Attennation;Transmission >70db Receiver >70db e Imp. ; 50Ω f V.S.W.R; <1.3 g Output power; 50W h Temparature range; —10℃～+50℃
3.5	Power Spully Unit	3 sets	The unit(Rack-mounting type)is for Radio of 150MHZ,equipped with existing reserving and equipment. Other performance is as same as that of 1.5 Pwer spully unit.
4	Fixed Station		
4.1	Radio unit (150MHZ)	7 sets	a Structure etc. Desk-Top type,Radio unit,Speaker,Power supully unit,Control unit are put together with in the same cabinet. b Main Performance 1 Frequency range ; 150 ～174MHZ 2 Simplex,Semi-duplex(Press-to-talk) 3 Channel separation 12.5KHZ 4 Nomber of Channel; 99channels 5 Output power; 25W

No.	Material	Q'ty	Specifications
			6 Power suplly AC220V,DC13.6V ±20% to current battery 6V,48AH(Maintenance free type)2pcs in series for power failure. Other performance etc. is as same as that of transmission for 150MHZ 2.1
4.2	Antenna	7 sets	a Omnidirectional Brown Antenna(exsiting 1) b Frequency renge;150 ~174MHZ c V.S.W.R.; < 1.5 d Gain ; > 3.2db e Imp. ; 50Ω f Rated Power ; 50W
4.3	Feeder	30m ×7	a type ; Coaxial cable,including Connecter b Imp. ; 50 Ω c loss/m ; <0.2db d V.S.W.R. ; <1.2
4.4	Power suplly unit		Use AC220V, DC13.6V±20%, battery 6V, 48AH (Maintenance-Free Type) connect 2 units in series for anti-power failure.
5	Mobile Radio		
5.1	Radio unit (150MHZ)	30 sets	a Structure etc. The unit can be carry in fire fighting type equipping with fier fighting truck. - DC/DC converter - Whip antenna - External speaker

No.	Material	Q'ty	Specifications
			- Selective calling unit b Performance 1 Channel Separation; 12.5KHZ 2 Frequency Deviation; ±2.5KHZ 3 Power suplly toapply electricity by exchange 12V battery for truck to 13.6V through DC/DC Converter. 4 5 tone Seective Calling unit Other performance etc. is as same as that of transmission for 150MHZ 2.1
5.2	Antenna	30 sets	a Structure etc. 1 Whip Antenna fixed on the roof (2 are fiexed at the side) with feeder and connector 5/8λ elements 30 lines 1/4λ elements 30 lines 2 Frequency renge ; 140~174MHZ 3 V.S.W.R < 2.0 (4MHZ Width) 4 Gain 3.65dbi (with 5/8λ element) 5 Omnidirectional 6 Imp. ; 50Ω 7 Rated Power; 50W
5.3	External Speaker	30 pcs	a Structure etc. It can be attached with trucks dashbord put in a cabinet. b Performance It can stand 3W/4Ω level of audio output.

No.	Material	Q'ty	Specifications
6	Portable Radio		
6.1	Radio unit (150MHZ)	60 units	a Structure etc. 1 Made by Almidycast,a length type 2 consisting of - Radio unit - Battery pack - case 3 power supply (on/off),volume,SQ., tone, channel,monitor,press-talk etc. control b Performance [Transmitter] 1 Frequency renge; 140～174MHZ 2 Channel Separation; 12.5KHZ 3 Nomber of Channel; 99 4 Simplex,Semi-duplex(Pres-to-tolk) 5 PM(AM) 6 Antenna Impedance ; 50 Ω 7 Power suplly ;9.6VDC Ni-Cad battery pack 8 Power consumption Stanby; 40mA 5W RF Output; 1,700mA 9 Temperature range ; −30℃～+60℃ 10 Demension; < within H170×W42 ×D72mm [Transmitter] 11 RF Output Power; 5W 12 Frequency Stability; $< 5\times10^{-6}$ 13 Frequency Deviation; ±2.5KHZ

No.	Material	Q'ty	Specifications
			14 Pre-emphasis 300～3,000HZ reference to 1KHZ,<+1,-3db to 6db/octave 15 Modulation Distortion 1,000HZ,60%Modulation, <5% 16 Spurious,Hermonics Radiation > 60db(below carrier) [Receiver] 17 IF 2nd 455KHZ 18 Sensitivity < 0.4 μ V (at 20db noise quieting) 19 S Q Sensitivity < 0.3 μ V 20 Pre-emphasis within +1,-3db of 6db/ octave 300～3,000HZ,1000HZ Reference 21 Audio output ; 0.5W
6.2	Option		
	(1) Antenna	60 units	1 Omnidirectional ,including connecter 2 elements covered with rubber. 3 Gain ; > -0.85dbi
	(2)Battery Pack	120 pcs	1 Both of the exsiting/reserved battery 2 Ni-Cad battery can be charged. 3 To use it more than 7 hours repertedly Stand by:Recive:Transmit=18:1:1 4 The battery can be charged without talking off.
	(3) Charger	60 pcs	1 The battery unit can be charged with/ without Radio. 2 The primarily ; 220V The second ; DC9.6V.

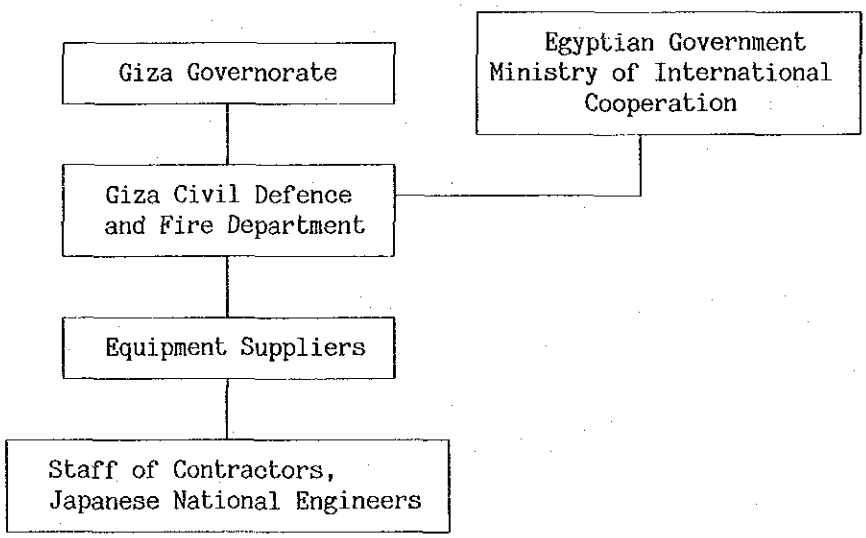
No.	Material	Q'ty	Specifications
			(to charge Ni-Cad battery) 3 To equip fuse on the primary voltage. 4 To equip circuit preventing overcharge.
	(4) Case	60 pcs	Leather or synthetic leather hard case.
7	Installation works, etc.		
	The installation works of the Radio communication equipment are to be as follows;		
7.1	Antenna & Feeder setting works (1) To install the antenna with the tower/pole prepared by Egyptian side, (2) To install the feeder connecting the antenna with radio unit (indoor & outdoor)		
7.2	Necessary installation works to equip the radio unit, etc. in the Telecomunication Station at Headquarters		
7.3	Installation of other radio units		
7.4	Other necessary matters concerning the installation and equipment operation		

4.4 Project Implementation Plan

4.4.1 Implementation Policy

The Project consists of the construction works of buildings and facilities which are to be borne by the Egyptian side, and the procurement of the equipment under the grant aid cooperation which is to be extended by the Japanese government. The Egyptian side considers itself fully capable of implementing their share of the project at their own responsibility and accordingly considers that participation of the Japanese consultant in the implementation stage unnecessary. Detailed designs, preparation of tender documents, examination of bids, supervision of work execution will be under the responsibility of the Egyptian side. Organization in charge of the project execution is shown in Figure 4-1.

Figure 4-1 Project Execution Organization



4.4.2 Items Requiring Special Consideration in the Project's Execution

The fire trucks under this Project are peculiar in its nature which would require a relatively long fitting-out period of time, and at the same time, the radio communication equipment would need to be best suited to the site conditions such as at the fire stations. Hence, time duration for implementation should be carefully considered.

Care must be also taken with respect to the appropriately-coordinated dispatches of the technical engineers from the manufacturers in order to ensure efficient work program on site with minimum loss time.

4.4.3 Project Implementation and Supervision Plan

In view of the policy which regulates grant aid assistance provided by the Japanese Government, as well the objectives of that assistance, the Giza Civil Defence and Fire Department is obliged to prepare the detailed design and the project supervision through a project implementation team so formed and complete the project without delay. On the implementation supervision phase, an approval to the equipment manufacturing drawings should be given, and at the time of the completion inspection at the factories concerned as well as at the delivery inspection, experts so qualified should be dispatched in order to make the Project smoothly executed.

4.4.4 Division of Undertakings in the Project

The division of undertakings in the project between the Japanese party and Giza Civil Defence and Fire Department is described as follows;

(1) Undertakings by the Japanese party

1) Procurement, trial-run & adjustment and equipment operation instruction, and equipment operation guidance

2) Installation of radio equipment

3) Ocean transportation and execution of pre-delivery inspection

(2) Undertakings by the Egyptian party

The Giza Governorate (Giza Civil Defence and Fire Department) is responsible for the completion of the buildings concerned and the provision of labour and services concerned, in accordance with the purport of the Japan's Grant Aid Cooperation, in order to make the Governorate's fire defence power enhanced.

The undertakings are as follows;

1) To complete the construction of fire stations proposed to be covered under the Project
2) To complete the construction of the antenna tower which shall be not less than 100m from the ground level, and the antennas of the repeater stations which shall be not less than 30m respectively
3) To secure the power supply for the radio equipment
4) To secure the necessary spaces for installation of the radio units

5) To allocate enough number of trained firemen to the fire stations proposed and to ensure proper budget for fuel and other related expenses
6) To ensure the inland transportation of the equipment from the port of disembarkation to Giza
7) Procedures, bearing of expenses
   1. Bearing of expenses relative to bank transactions
   2. Bearing of expenses relative to tax exemption
   3. Actions to accelerate unloading, customs clearance of the equipment and materials which come under the responsibility of the Japanese party
   4. Procedures as required under the verified contract with respect to the exemption or bearing of custom duties, internal taxed in Egypt and any other fiscal levies which may be imposed upon Japanese nationals participating in the project implementation
8) Provision of facilities as may be required with respect to the entry into and the stay in Egypt of above-mentioned Japanese nationals for the purpose of project implementation
9) Bearing all expenses incurred under the project other than those to be borne by the Japanese party

The extent of undertakings to be divided between the parties concerned is summarized in Table 4-2.

4.4.5 Equipment and Materials Procurement Plan

(1) Procurement of the equipment and materials under this project shall be by means of the tender in lump sum to be submitted by competent equipment suppliers (trading companies). The Giza Governorate of the Arab Republic of Egypt expressed a strong desire to procure equipment and materials of Japanese origin which perform at standards equivalent to that of previously supplied to the Cairo Governorate. As a result of the scrutiny of actual performance of the Fire trucks and Equipment, the equipment and materials to be procured shall be, in principle, restricted to the equipment of Japanese origin and Egyptian origin. No procurement from any other countries will be considered, except only when no appropriate equipment or materials are available from Japan or in Egypt.

(2) Transportation of the equipment and materials
All equipment and materials shall be shipped, either in one shipment or divided into several shipments as needed, and shall be unloaded at the port of Alexandria, the Arab Republic of Egypt. The equipment to be procured under

Table 4-2 Extent of The Division of Undertakings in The Project

Details of work	Japanese Side	Egyptian Side
1) Fire Trucks and Equipment		
a. Procurement	○	
b. Trial-run & adjustment	○	
c. Operation, guidance of handling, instruction	○	
d. Fixation and Installation of radio communications equipment	○	
e. General guidance and instruction of operation of radio communications equipment	○	
2) Procedures related to export and customs clearance		
a. Transportation to the port of Alexandria, the Arab Republic of Egypt	○	
b. Tax exemption and customs clearance procedures		○
c. Inland transportation within Egypt (From the port of Alexandria to work sites)		○
3) Payment of B/A commissions to foreign exchange banks as approved by Japan		○
4) Assistance to the Japanese nationals in the works related to the Project implementation with respect to entry into and exit from Egypt, and stay in Egypt.		○
5) Appropriate and effective supervision of the equipment and materials to be procured under the grant aid assistance.		○
6) Construction, repair and maintenance of the facilities not included in the grant aid assistance of the Japanese Government. (new fire stations, garages, radio antenna tower and power supply for radio units)		○
7) Procedures such as approval as may be required for the introduction and utilization of the equipment.		○

the project includes large size special fire trucks, sufficient attention must be paid in order to ensure thorough survey by the contractors and manufacturers with respect to the actual record of inland transportation services provided for the previous shipment in order to prevent any unwanted troubles.

4.4.6 Implementation Process

Implementation of the project which will be financed by the grant aid assistance of Japanese Government shall progress approximately following the phases as set forth hereunder.

(1) Implementation design (detailed design)

On the basis of the Basic Design Study report, detailed specifications for the equipment and materials to be procured will be determined, while tender documents will be prepared and presented for the verification by the institutions concerned. A three month period is considered necessary for this phase.

(2) Implementation

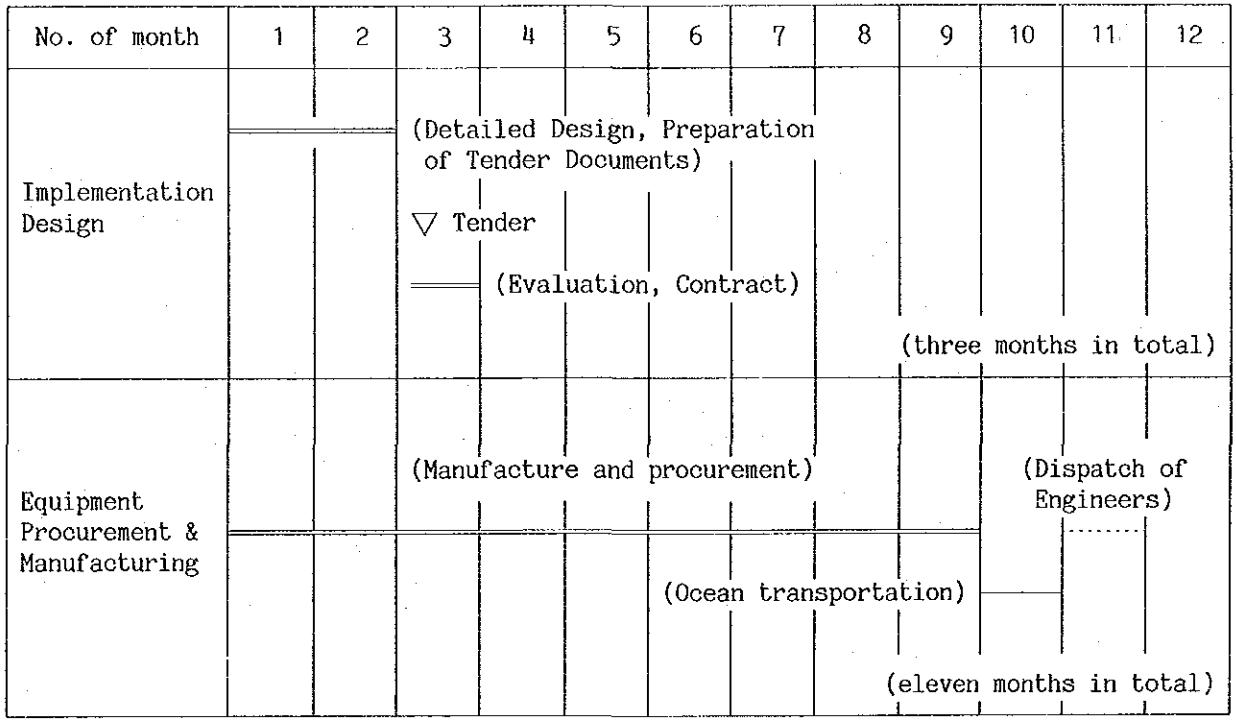
The awarded contractor is obliged to prepare drawings and books for verification, to prepare manufacturing books and drawings of equipment and materials, to manufacture the equipment and materials, and to ship the equipment and materials in order to transport them to Egypt. The contractor shall conduct a trial run of the said equipment unloaded at the specified place in the Giza Civil Defence and Fire Department as being witnessed by representatives of the Giza Civil Defence and Fire Department and of any other institutions concerned. After having confirmed that the equipment comply with the applicable specifications, they are to hand over the equipment to the Egyptian Side to consummate the contract.

The Giza Governorate shall issue a certificate of completion of undertaking to the contractor.

If all the processes have been completed smoothly, it is estimated that the entire processes to complete the contract would take nine months after the contract signing.

Project implementation process is shown in Figure 4-2 below;

Figure 4-2 Project Implementation Process



4.4.7 Expenses to be borne by the Egyptian side

Project costs to be borne by the Egyptian side (namely, expenses related to the equipment internal transportation, construction of new fire stations, construction of the Antenna Tower) are estimated to be about LE.2.32 million (about ¥80 million), as broken down below;

Items of Expenses	Amounts (thousand)
1) Internal Transportation	LE.290 (¥10,000)
2) Construction of Fire Staions and Antenna Tower	LE.2,030 (¥70,000)
Total	LE.2,320 (¥80,000)

CHAPTER 5 EFFECTS OF THE PROJECT AND CONCLUSION

Chapter 5 Effects of the Project and Conclusion

5.1 Effects of the Project

The objectives of this Project are to enhance the fire defence power in order to protect people's lives and properties from various disasters in the Giza Governorate and mitigate damages caused by fires, accidents, earthquakes and other disasters.

It is strongly expected that this Project would make possible that the current cost which burdens the Giza Governorate for maintenance and repair of their time-aged fire trucks and the communication equipment would be curtailed, and the savings so achieved could be appropriated for other purposes such as for the renewal of fire trucks, so that it could, consequently, contribute to the upgrading of fire defence power of the Giza Civil Defence and Fire Department.

Effects of the Project with the above-mentioned objectives are described in the following Table 5-1.

Table 5-1 Effects of the Project and Degree of Improvement

(Fire Trucks)

Present Status and Existing Problems	Measures Taken by The Project	Effects of The Project and The Degree of Improvement
1. The Arab Republic of Egypt is endeavoring to upgrade its state, however, the Giza Governorate and its fire system, which constitutes the greater Cairo Metropolis, cannot fully keep up with the recent rapid changes of urbanization.	Fire trucks granted will be alotted at key positions such as at the HQ., fire stations in urban and rural areas. Their existing ones, after receiving the granted one, will be reallotted at districts, whose fire defence power is rather feeble. That way, overall defence power will be enhanced.	The project will strengthen and improve the strenth of the Giza fire department. This will,in turn,strengthen the cosmopolitan City Cairo as well, being aided by the Giza fire department.
2. Giza City abounds with 1,190 medium and high-rise buildings in proportion to the development of Cairo City, and if fire breaks out in those buildings, the fire equipment to tackle would be so weak.	46m class aerial ladder will cope with highrise buildings and 27m class aerial platform truck for medium sized.	The existing aerial ladder truck and aerial platfrom are 10 years and 12 year old respectively, and are soon to be replaced. 46m class aerial ladder will cope with high-rise buildings, while 27m class aerial platform for medium ones. Since those high and medium building fires directly affect human lives, improvement of fire-fighting performance will clear off those warries.
3. As the result of the progress of complexity and multiplicity, such as progress of motorization, the equipment and materials to meet the demand of extra ordinary rescue activities are not sufficient. Sufficient supplies of fire equipment are urgently required.	When Cairo was struck by an earthquake in 1992, rescue trucks granted previously to the Cairo Fire Service were proven highly efficient. In the same way, those to be granted under this project will be basically the same, to meet the purpose to perform recent peculiar life-saving activities.	In order to appropriately perform recent extraordinary rescue activities such as at severe earthquakes or large traffic accidents, and to relieve victims promptly, it is necessary to use fire equipment most suitable for the situation. This project will meet those needs.
4. Climate in Egypt is very dry with little precipitation. Water sources are not sufficient yet. Water supply and sewer systems are under development, however, kerosene furnaces are used for their staple food bread and they could be the cause of fires. Moreover, there exist many hazardous-materials-handling places. Water wagon trucks are in need, but priority is given to chemical trucks.	Light chemical truck will deals with fires along-side narrow alleys of urban communities, while medium-size chemical trucks for suburban hazardous materials handling plants.	Light chemical trucks are to tackle domestic fires often caused by household kerosene furnaces, while medium sized ones are mainly for such hazardous materials handling plants. Even for ordinary fires, those chemical trucks can work effectively to put out fires with their water mounted. 27 new trucks are granted, then existing ones are re-distributed to less prepared areas, and their defence power will be increased.

(Fire Service Communication System)

Present Status and Existing Problems	Measures Taken by The Project	Effects of The Project and The Degree of Improvement
1. The following problems are observed between HQ and fire stations. • Giza has a long and wide area, 100Km south and 30Km north along River Nile. Ordinary subscribed telephone is less developed, likewise, fire phones, (1) For commanding, (2) Exclusive phones are in the same. • Fire report from F/S to HQ, and commanding from HQ to F/S are through 80MHz radio in order to fill the less developed wire phone. • Incommunicable F/Stns. exist in remote areas due to long terrain and less equipment performance. (80MHz, 10W output-power, 11 year service-life) • Of the total 36 F/Stns., 13 stations(including 6 under construction) have no exclusive wire phone. 14 stations have no radio, 4 stations have neither of them. This will cause serious problems in fire communication.	• Radio unit of HQ's transmitting station will be 150MHz, 50W output-power for repeaters. • In order to cover incommunicable areas, repeaters (150 MHz,25-50W output-power)are set at Wardan (north zone), Badrashein, Safe (south zone) F/S. • Fixed stations (150MHz,25W output-power) are set at Mansouria (north zone), Massanna 1 & Massanna 2 (October zone), Hawandia, Mit-Rahina, Ayyat, Atfih (south zone) F/S. • The Project equips 150MHz radio at F/S fixed station then existing 80MHz ones are re-located at radioless fire stations.	• Incommunicable areas in North zone and October zone will be cleared off. Radio communications to/from HQ. are ensured. Smooth commanding from HQ will be realized and response time will be cut down. Systematic operation will come ture. • By setting the working channel for common wave, and the stand-by channel for inter-zone wave, dual lines are simultaneously used, if necessary for multiple-numbered fires. • Direct contact from mobile and portable raido units with HQ becomes possible. Is enables effective fire fighting tactics. (Portble radio units may have difficulty due to terrain)
2. 30 trucks out of total 65 have no radio units, which means less than half. One a truck is responded, no communication is made.	The Project enables all the trucks granted equipped with radio units of 150MHz 25W output-power.	All the responding truck can maintain contact. Report from the fire ground or aid request will be smoother, which minimizes human and physical damages. Turnout command can be made to the responding trucks and multiple use of trucks will be possible.
3. Only 6 portable radios are at hand, five at HQ and one at Mesaha F/S. This causes serious problem in fire fighting activities and information referring.	The Project enables each truck granted equipped with two sets of radio units (150 MHz 10W output-power).	Systematic fighting tactics will be made by ensuring communication with fire ground commander supported by direct commands from HQ. During ordinary works,it can help increase efficiency. (Terrain may affect.)

5.2 Conclusion

One of the vital subjects which are indispensable in modern urban communities is to reinforce the fire defence system and its organizational structure.

As mentioned earlier, the objectives of this project are to enhance the fire defence power in order to protect people's lives and properties from various disasters in the Giza Governorate and mitigate damages caused by fires, accidents, earthquakes and other disasters.

This Project, directly and indirectly, contributes to the modernization programme which the whole country of Egypt is making the utmost efforts for, and the Giza Civil Defence and Fire Department has sufficient recipient capability to implement this project in terms of their organization and technological expertise. It is, therefore, quite appropriate and justifiable to execute this Project under the Grant Aid Programme of the Japanese Government.

However, in order to ensure full achievement of expected effects of the Project, it is expected that self-sustaining efforts should be exerted by the Giza Governorate on the following points;

(1) Completion of undertakings to be borne by the Giza Governorate

Being prepared for procurement of the equipment granted at the Headquarters and the fire stations new or remodeled, the Governorate is expected to process every necessary work for smooth implementation of the Project including the inland transportation of the equipment, extention works at the garages concerned, and ground works for the radio equipment installation as well as security of equipment unloading works which are to be done by the Japanese suppliers, customs clearance and provision of the related technical guidance.

(2) Continued allocation of maintenance and operation budget

For the effective use of the equipment provided under the Project, continued budget allocation for operation and maintenance is indispensable. The Giza Governorate is expected to continuously allocate necessary budget for the maintenance and operation of the equipment so as to make the equipment fully utilized.

(3) Training of firemen

For the effective use of the contemplated equipment, appropriate job assignment and provision of necessary education and training are required. A system for responsibility for operation and maintenance of the equipment should be further clarified and necessary education and training should be conducted in proportion to the equipment plan.

(4) Development of repair and maintenance system

It is necessary to keep a constant stock of spare parts which are to be supplied together with the equipment, and any shortage should be replenished appropriately through attentive custody and inventory control programme. Operation and maintenance manuals should be fully comprehended by the person in charge of the equipment operation and maintenance and be kept in safe by designated persons.

5.3 Recommendations

This Project is to provide for the Giza Civil Defence and Fire Department the necessary fire trucks such as an aerial ladder truck and rescue truck, and radio communication equipment including radio repeater station, base station, mobile radio and portable radio units. Upon completion of the Project, fire reports, turnout orders, fire ground communications would be efficiently carried out by improving the present uncovered districts. Moreover, it leads to insurance of proper and effective operation of fire trucks.

Following the above, further enhancement of fire defence power not only in Giza but also in the greater Cairo Metropolis would be attained, and accordingly contribution to protection of citizens' lives and properties would be enhanced.

In order to make the Project smoothly realized and the objectives successfully attained, the following points are to be recommended;

(1) Prompt proceeding of contract and its verification procedure in the implementation phase

Since this Project is executed in accordance with the Japan's Grant Aid Programme, there exists restriction by time. Therefore, on the undertakings by the Egyptian side, it is required to promptly process the matters such as conclusion of the E/N, formulation and verification of the Detailed Design based on this B/D report, bidding procedure and contract with contractors.

(2) Smooth execution of the works to be borne by the Egyptian Side

As the system of the Japan's Grant Aid is already clarified by the study team, necessary budget arrangement is expected to be made by the Egyptian Side.

Especially, the following matters should be completed before the use of the equipment;

1) Construction/Extension works of the garages of the fire stations where the fire trucks are to be alotted,
2) Preparation of "Antenna Tower" which has a sufficient height to install the radio antenna, and
3) Preparation of the wire circuit for radio control between the Headquarters and the transmitting station.

Furthermore, appropriate customs measures shall be taken by the Egyptian Side.

(3) Equipment Maintenance and Management

For the effective use of the Project's equipment, what is indispensable in either case of the fire trucks and the radio equipment is proper handling and good maintenance management.

Especially, in the maintenance, development of routine self-management programme and conclusion of contract with maintenance contractors would be highly advised so that the whole maintenance system will work perfect.

(4) Budget Preparation

As mentioned earlier, the Project will be realized through smooth execution of the works by the Egyptian side. Hence, it is required to secure appropriate budget at proper time in order not to cause any unexpected delay in the Project implementaion.

APPENDICES

Material 1 − 1

MEMBERS OF THE STUDY TEAM

Basic Design Study on the Project for Improvement of Fire Fighting Services in Giza

1	Leader/ Fire Defence Policy	Mr.Tsutomu HONDA	Deputy Director, Fire Defense Division, Fire Defense Agency, Ministry of Home Affairs
2	Project Coordination	Mr.Ichirou MUKAI	Second Basic Design Study Div., Grant Aid Study and Design Dept., JICA
3	Fire Defence Planning	Mr.Nobuo ARAKAWA	Fire Protection Equipment and Safety Center of Japan
4	Fire Fighting/ Equipment Planning	Mr.Tetsu MATSUHASHI	Fire Protection Equipment and Safety Center of Japan
5	Equipment Deployment/ Maintenance Planning	Mr.Hiromichi SATO	Fire Protection Equipment and Safety Center of Japan
6	Procurement Planning/ Cost estimation	Mr.Masato KAMATA	Fire Protection Equipment and Safety Center of Japan
7	Technical Interpreter	Mr.Haruyuki TANIGUCHI	Fire Protection Equipment and Safety Center of Japan

Material 1 – 2

MEMBERS OF THE STUDY TEAM (Draft Report)

Basic Design Study on the Project for Improvement of Fire Fighting Services in Giza
(Draft Report Explanation Team)

1	Leader	Mr.Shunichi SUGA	Senior Specialist for International Fire Service Cooperation, Fire Defense Division, Fire Defense Agency, Ministry of Home Affairs
2	Grand Aid Programme	Mr.Haruhide MIYOSHI	Consultant Contract Div., Procurement Dept., JICA
3	Fire Defense Planning	Mr.Nobuo ARAKAWA	Fire Protection Equipment and Safety Center of Japan
4	Fire Fighting/ Equipment Planning	Mr.Tetsu MATSUHASHI	Fire Protection Equipment and Safety Center of Japan
5	Technical Interpreter	Mr.Yasuyoshi SAKAI	Fire Protection Equipment and Safety Center of Japan

Material 2 – 1

I T I N E R A R Y

(B/D Study Team on the Project for Improvement of Fire Fighting services in Giza)

No.	Date		Schedule / Contents of Study		
			Leader	JICA	Consultant
1	4/10	SAT		NARITA → PARIS (AF 275)	
2	/11	SUN		PARIS → CAIRO (AF 8004)	
3	/12	MON		JICA Embassy of Japan MOIC	
4	/13	TUE		Civil Defence,Ministry of Interior Giza Governor,Giza Civil Defence	
5	/14	WED		Giza Civil Defence,Field Survey	
6	/15	THU		Giza Civil Defence,Field Survey	
7	/16	FRY	NARITA → PARI	Field Survey,Arrangements in Team,Arrange the Data	
8	/17	SAT	PARIS → CAIRO	Field Survey,Arrangements in Team,Arrange the Data	
9	/18	SUN	Cairo fire Brigade		
10	/19	MON	Field Survey,Arrangements in Team,Arrange the Data		
11	/20	TUE	Giza Civil Defence,Field Survey		
12	/21	WED	Giza Civil Defence,Field Survey		
13	/22	THU	Minutes Signed		
14	/23	FRY	CAIRO → LONDON(BA 154)		Field Survey,Arrange the Data
15	/24	SAT	LONDON → NARITA(BA 007)		Giza Civil Defence,Field Survey
16	/25	SUN	NARITA		Field Survey,Arrange the Data
17	/26	MON			Giza Civil Defence, JICA Embassy of Japan, MOIC
18	/27	TUE			CAIRO → PARIS(AF 8015)
19	/28	WED			PARIS → NARITA(AF 276)
20	/29	THU			NARITA

Material 2 – 2

I T I N E R A R Y
(Draft Report Explanation Team)

No.	Date		Schedule / Contents of Study	
1	7/25	SUN	NARITA → PARIS (AF 275)	
2	/26	MON	PARIS → CAIRO (AF 8014)	
3	/27	TUE		JICA Embassy of Japan MOIC Giza Civil Defence
4	/28	WED		Giza Governor Giza Civil Defence
5	/29	THU		Giza Civil Defence
6	/30	FRI		Arrangements in Team
7	/31	SAT		Giza Civil Defence
8	8/01	SUN		Giza Civil Defence
9	/02	MON		JICA Minutes Signed
10	/03	TUE	CAIRO → LONDON(BA 154)	
11	/04	WED	LONDON → NARITA(JL 402)	
12	/05	THU	NARITA	

Material 3 – 1

List of Officials Interviewed

1 Ministry of International Cooperation

Mr. Hamad Moustafa	Undersecretary
Mr. Mohsen Sadek	Director of Japan Section

2 Civil Defence, Ministry of Interior

Mr. Mahel Kandeal	General manager
Mr. Rafik Hegazi	General manager
Mr. Adel Nigma	Assistant Ministry of Interior, Special police & Prim minister
Mr. Mohamed Moktor	Assistant Ministry of Interior, Special police & Prim minister
Mr. Salah Naggii	Assistant Ministry of Interior, Special police & Prim minister

3 Giza Governorate

Mr. Yoseyf Afifi	Governor

4 Civil Defence and Fire Department, Giza Governorate

Mr. Esam El Bagory	Manager
Mr. Salah Shehata	Colonel
Mr. Samier Raghib	Colonel

5 Cairo Civil Defence and Fire Department

Mr. Nadel Nouman	General
Mr. Rarik Moniem	Colonel Operation Director
Mr. Kakaria Omran	Colonel Operation Director

6 Embassy of Japan

Mr. Teruaki Nagasaki	Counseller
Mr. Tokutaro Nakai	First Secretary
Mr. Toshio Azuma	First Secretary

7 Japan International Cooperation Agency

Mr. Tsuyoshi Shinoura	Resident Representative
Mr. Kenji Iwaguchi	Ex-Resident Representative
Mr. Tatsuro Yonebayashi	Deputy Resident Representative
Mr. Kazuhide Nagasawa	Assistant Resident Resentative

Material 3 − 2

List of Officials Interviewed

(Draft Report Explanation Team)

1 Ministry of International Cooperation

Mr. Hamad Moustafa	Undersecretary
Mr. Mohsen Sadek	Director of Japan Section

2 *Civil Defence, Ministry of Interior*

Mr. Adel Nigma	Assistant Ministry of Interior, Special police & Prim minister
Mr. Mohamed Moktor	Assistant Ministry of Interior, Special police & Prim minister

3 Giza Governorate

Dr. Abd Alrahim Shehata	Governor
Mr. Ezzat Mohd Ali	Vice Governor
Mr. Mohamed A. Hassan	Director, Wireless Network

4 Civil Defence and Fire Department, Giza Governorate

Mr. Esam El Bagory	Manager
Mr. Salah Shehata	Colonel
Mr. Samier Raghib	Colonel

5 Embassy of Japan

Mr. Tokutaro Nakai	First Secretary
Mr. Toshio Azuma	First Secretary

6 Japan International Cooperation Agency

Mr. Tsuyoshi Shinoura	Resident Representative
Mr. Tatsuro Yonebayashi	Deputy Resident Representative
Mr. Kazuhide Nagasawa	Assistant Resident Resentative
Mr. Mohamed Deyaa El-Din	Public Relations Manager

Material 4

MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY
ON
THE PROJECT FOR IMPROVEMENT OF FIRE FIGHTING SERVICES
IN
GIZA OF THE ARAB REPUBRIC OF EGYPT

In response to a request from the Arab Republic of Egypt, the Government of Japan decided to conduct a basic design study on the Project for Improvement of Fire Fighting Services in Giza (hereinafter referred to as "the Project"), and entrusted the study to the Japan International Cooperation Agency (JICA).
JICA sent to Egypt a study team, which is headed by Mr. Tsutomu Honda, and is scheduled to stay in the country from the 11th to the 27th of April, 1993.

The team held a series of discussions on the Project with the officials concerned of the Giza Governorate and conducted field survey at the study area.

In the course of discussions and field survey, both parties have agreed to recommend to their respective Governments the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Design Study Report.

Cairo, the 22nd April, 1993

Tsutomu Honda

Mr. Tsutomu Honda
Team Leader
Basic Design Study Team
JICA

Esam el Bagory

Mr. Esam El Bagory
Manager,
Civil Defence and Fire Department,
Giza Governorate

H. Moustafa

Mr. Hamad Moustafa
Undersecretary
Ministry of International Cooperation

ATTACHMENT

1. TITLE OF THE PROJECT

The title of the Project is "the Project for Improving Fire Fighting Services in Giza".

2. OBJECTIVES OF THE PROJECT

The objectives of the Project are to construct Fire Services Commanding system and to provide Fire Fighting equipment in order to improve the Fire Fighting Services in Giza.

3. RESPONSIBLE AND EXECUTING ORGANIZATION

The Giza Governorate is the responsible organization and the Giza Civil Defence and Fire Department is executing organization of the Project.

The Organization Chart of the executing organization is shown in Annex-1.

4. PROJECT SITE

The project site is shown in Annex-2.

5. CONTENTS REQUESTED BY THE EGYPTIAN SIDE

After a series of discussions, the items listed in Annex-3 (including sufficient spare parts and installation) are requested by the Egyptian side. However, the final contents of the Project will be decided after further studies.

6. JAPANESE GRANT AID PROGRAMME

The Giza Governorate has acknowledged the system of the Japan's Grant Aid Programme explained by the Team.

EBAM Bagay

7. NECESSARY MEASURES TO BE TAKEN BY THE EGYPTIAN SIDE

(1) The Government of the Arab Republic of Egypt (Giza Gavernarate) will take the necessary measures described in Annex-4 for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

(2) The Giza Governorate will take necessary measures including the following items for proper and effective operation and maintenance of equipment provided under the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

1) To complete the construction of fire stations proposed to be covered under the Project, namely El Sudan Street, Sayed Darwish, El Omraniya, Kafr Taharmas, Atfih, El Masanea No. 1, and El Massanea No. 2, before the end of December, 1993.

2) To allocate enough number of trained firemen to the fire stations proposed to be covered under the project in order to operate and maintain the equipment purchased under the Grant Aid programme.

3) To ensure proper budget for fuel and maintenance of the equipment purchased under the Grant Aid Programme.

4) To replace the communication antenna of Giza Civil Defence HQ with proper height one.

5) To provide proper power supply to the communication equipment purchased under the Grant Aid programme.

6) To provide proper space to fix the communication equipment purchased under the Grant Aid Programme.

8. INTERNAL TRANSPORTATION

Both parties have confirmed that the Egyptian side shall bear all expenses for internal transportation of the machinery and equipment purchased under the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

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9. SCHEDULE OF THE STUDY

(1) The consultants will proceed to further studies in Egypt with the Giza Governorate until the 27th of April, 1993.

(2) JICA will prepare a Draft Study Report in English and despatch a mission to Egypt for the purpose to explain its contents in June, 1993. The Study Report will be completed and sent to Egypt in September, 1993.

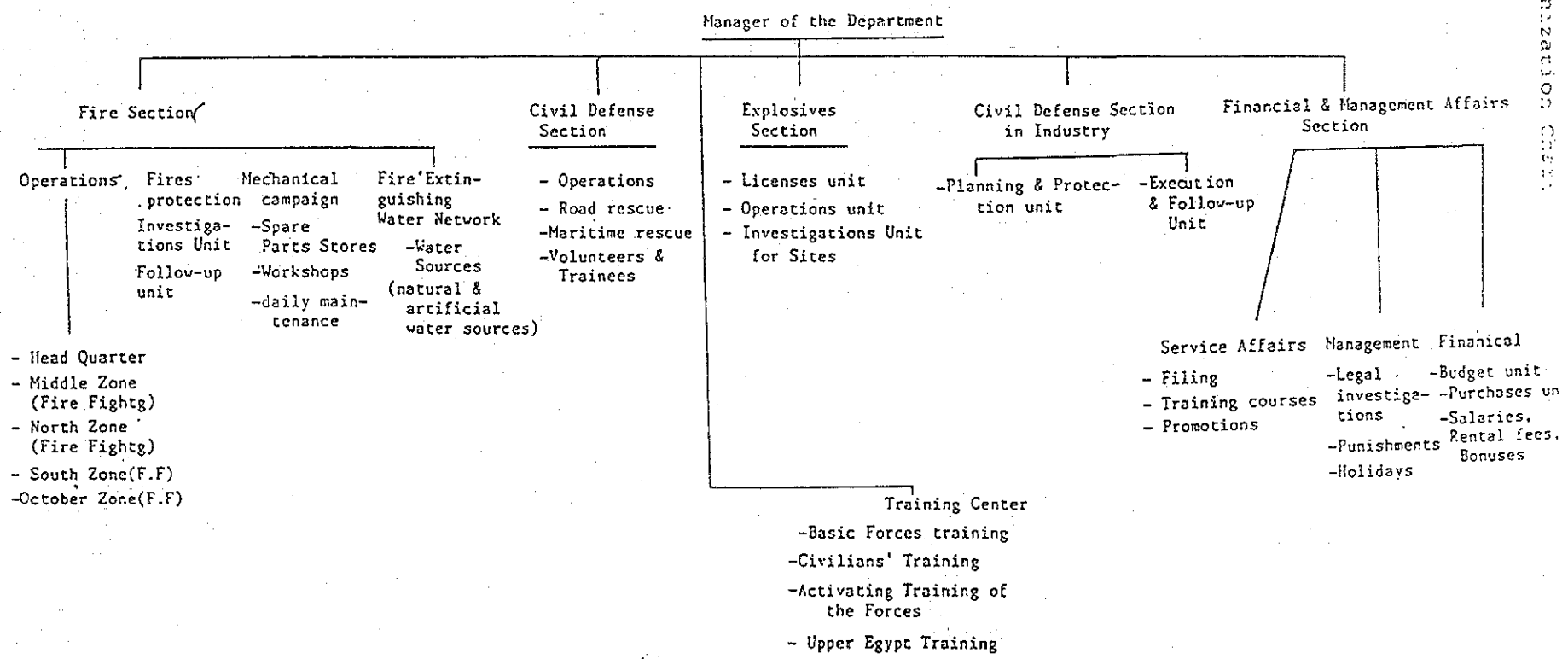
E. 13

ANNEX-1 Organization Chart

GUIZA GOVERNORATE

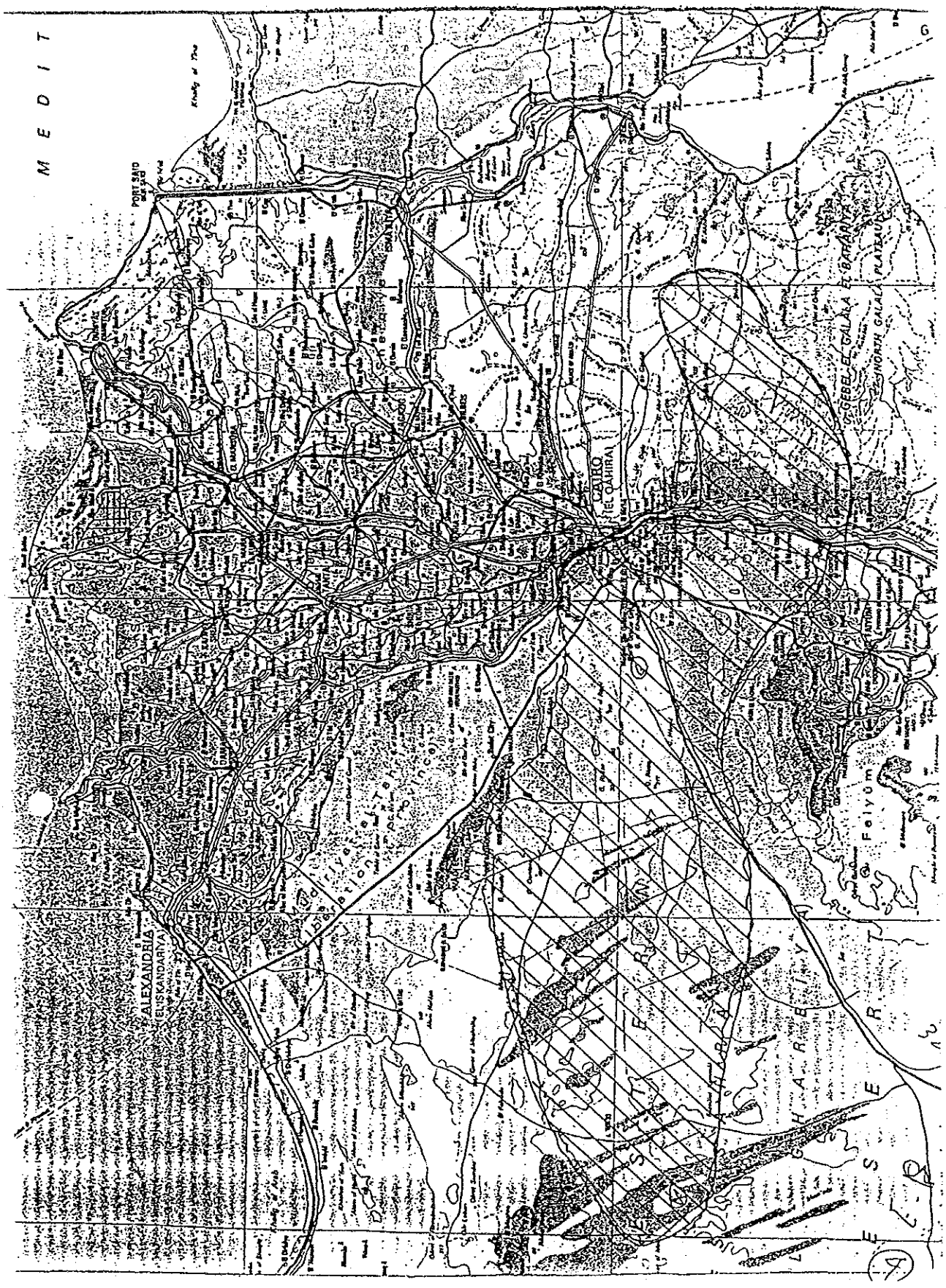
Civil Defense & Fire Brigade Dept.

Organization Chart of The Civil Defense & Fire Brigade Dept.



F. S

ANNEX--2 Project Site



ANNEX-3 ITEMS REQUESTED BY THE EGYPTIAN SIDE

Item	Description	Requested Q'ty
1.	46m Turn Table Ladder Truck	1 Unit
2.	27m Aerial Platform Truck	1 Unit
3.	Heavy Duty Rescue Truck	1 Unit
4.	Chemical Fire Truck (Medium)	12 Units
5.	Chemical Fire Truck (Light)	15 Units
6.	Radio Base Station	1 Set
7.	Portable Radio	1 Lot
8.	Spare Parts for the above items	Equal to 10% of the equipment price
9.	Instllation of the Equipments	

E.B

ANNEX-4

RECOMMENDATION FOR UNDERTAKINGS BY THE GOVERNMENT OF ARAB REPUBLIC OF EGYPT IN CASE THAT JAPAN'S GRANT AID IS EXTENDED TO THE PROJECT:

1. To ensure prompt unloading, customs clearance of the goods for the Project at the port of disembarkation in the Arab Republic of Egypt and prompt internal transportation therein of the products purchased under the Grant Aid.

2. To secure, with respect to the supply of the products and services under the verified contracts, that Japanese nationals shall not be subject to any customs duties, internal taxes and other fiscal levies which may be imposed in the Arab Republic of Egypt.

3. To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into Egypt and stay therein for the performance of their work in accordance with the relevant laws and regulations of the Arab Republic of Egypt.

4. To maintain and use properly and effectively the equipment and materials purchased under the Grant Aid.

5. To bear all the expenses, other than those to be borne by the Grant Aid for the execution of the project.

F. B

Material 5

MINUTES OF DISCUSSIONS ON THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF FIRE FIGHTING SERVICES IN GIZA OF THE ARAB REPUBLIC OF EGYPT (EXPLANATION ON A DRAFT REPORT)

In response to a request from the Arab Republic of Egypt, the Government of Japan decided to conduct a basic design study on the Project for Improvement of Fire Fighting Services in Giza (hereinafter referred to as "the Project"), and entrusted the study to the Japan International Cooperation Agency (JICA).

In April, 1993, JICA dispatched a Basic Design Study Team on the Project to Egypt, and through discussions, field survey, and examination of such results in Japan, has prepared a Draft Report of the Study.

In order to explain and to consult with the officials concerned of the Giza Governorate on the components of the Draft Report, JICA sent to Egypt a Draft Report Explanation Team, which is headed by Mr. Shun-ichi SUGA, Senior Specialist for International Fire Service Cooperation, Fire Defence Division, Fire Defence Agency, Ministry of Home Affairs, and is scheduled to stay in the country from the 26th of July to the 3rd of August, 1993.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

And also both parties confirmed the statement of the Giza Governorate as follows;

> "In case that the Grant is extended to the Project by Government of Japan, there will be an obligation in the Exchange of Notes over the Egyptian Side, that is "the Grant will be used properly and exclusively for the the purchase of ..... etc.", therefore the Giza Governorate requested that the Cost Estimations of the Project in foreign and local currencies should be included in the Basic Design."

Cairo, the 2nd August, 1993

Shunichi Suga

Mr. Shun-ichi Suga
Team Leader,
Basic Design Study
Draft Report Explanation Team,
JICA

Esam El Bagory

Mr. Esam El Bagory
Manager,
Civil Defence and Fire Department,
Giza Governorate

ATTACHMENT

1. Components of Draft Report

The Giza Governorate has agreed and accepted in principle the components of the Draft Report proposed by the Team, on condition that items included in the attached "MEMORANDUM ON DRAFT REPORT" will be taken into consideration in the Final Report.

2. Japan's Grant Aid System

The Giza Governorate has acknowledged the system of the Japan's Grant Aid Programme explained by the team.

3. Necessary Measures to be taken by the Egyptian Side

(1)The Government of the Arab Republic of Egypt (Giza Governorate) will take the necessary measures described in Annex-1 for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

(2)The Giza Governorate will take necessary measures including items in Annex-2 for the proper and effective operation and maintenance of equipment provided under the Project, on condition that the Grand Aid Assistance by the Government of Japan is extended to the Project.

4. Internal Transportation

Both parties have re-confirmed that the Egyptian Side shall bear all expenses for internal transportation of the machinery and equipment purchased under the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended.

5. Installation of the Equipment

Both parties have confirmed that the installation of the equipment shall be implemented by the Japanese Side. And the Egyptian Side shall bear all expenses for necessary preparatory works for installation of the machinery and equipment.

6. Further Schedule

The Team will make a Final Report in accordance with the confirmed items taking account of the items in the attached "MEMORANDUM ON DRAFT REPORT", and send it to the Egyptian Side by September, 1993.

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ANNEX -1

RECOMMENDATION FOR UNDERTAKINGS BY THE GOVERNMENT OF THE ARAB REPUBLIC OF EGYPT IN CASE THAT JAPAN'S GRANT AID IS EXTENDED TO THE PROJECT:

1. To ensure prompt unloading, customs clearance of the goods for the Project at the port of disembarkation in the Arab Republic of Egypt and prompt internal transportation therein of the products purchased under the Grant Aid.

2. To secure, with respect to the supply of the products and services under the verified contracts, that Japanese nationals shall not be subject to any customs duties, internal taxes and other fiscal levies which may be imposed in the Arab Republic of Egypt.

3. To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into Egypt and stay therein for the performance of their work in accordance with the relevant laws and regulations of the Arab Republic of Egypt.

4. To maintain and use properly and effectively the equipment and materials purchased under the Grant Aid.

5. To bear all the expenses, other than those to be borne by the Grant Aid for the execution of the Project.

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ANNEX-2

NECESSARY MEASURES TO BE TAKEN BY THE GIZA GOVERNORATE FOR THE REALIZATION OF THE PROJECT. IN CASE THAT JAPAN'S GRANT AID IS EXTENDED TO THE PROJECT:

1. To complete the construction of fire stations proposed to be covered under the Project: namely, EI SUDAN STREET, SAYED DARWISH, EL OMRANIYA, KAFR TAHARMAS, ATFIH, EL MASANEA No.1, and EI MASANEA No.2 before the end of December, 1993.

2. To allocate enough number of trained firemen to the fire stations proposed to be covered under the Project in order to operate and maintain the equipment purchased under the Japan's Grant Aid Programme.

3. To ensure proper budget for fuel and maintenance of the equipment purchased under the Japan's Grant Aid Programme.

4. To replace the communication antenna of Giza Civil Defence HQ with proper height one.

5. To provide proper power supply to the communication equipment purchased under the Japan's Grant Aid Programme.

6. To provide proper space to fix the communication equipment purchased under the Japan's Grant Aid Programme.

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(8)

MEMORANDUM ON DRAFT REPORT

BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF FIRE FIGHTING SERVICES
IN
GIZA OF THE ARAB REPUBLIC OF EGYPT

With regard to the Project for Improvement of Fire Fighting Services in Giza (hereinafter referred to as "the Project"), the Draft Report Explanation Team of JICA (hereinafter referred to as "the Team") has explained and consulted with the Giza Governorate on the components of the draft report of the Project.

As a result of the explanation by the Team and the discussion with the related authorities, the Giza Governorate has acknowledged and accepted in principle the components of the Draft Report, on condition that the items included in the "Attachment" will be taken into account for the finalization of the Basic Study Report.

The Giza Governorate and the Team confirmed that the report of the Basic Design Study of the Project will be finalized in Japan taking into account the items attached in the Attachment and the final report will be submitted officially to the Egyptian side by the end of September, 1993.

Cairo, the 2nd August, 1993

Shunichi Suga

Mr. Shun-ichi Suga
Team Leader,
Basic Design Study
Draft Report Explanation Team,
JICA

Esam El Bagory

Mr. Esam El Bagory
Manager,
Civil Defence and Fire Department,
Giza Governorate

ATTACHMENT

Confirmation on the Draft Report

The Giza Governorate and the Team have discussed on the components of the Draft Report, and the Giza Governorate accepted the components of the draft report on condition that the following items will be taken into account for the finalization of the Basic Design Study Report.

1. The Antenna of the Transmitting Station
   (1) The antenna tower of the HQ shall be not less than 100m from the ground level and the tower shall be constructed before the end of February, 1994.
   (2) The antenna tower of the repeater stations shall be not less than 30m from the ground level.

2. Percentage of the Spare Parts
   (1) 5% of the cost estimated price of the chassis and the superstructure of the Aerial Ladder truck (1 unit) and the Aerial Platform truck(1 unit). (Total 2 trucks)
   (2) 10% of the cost estimated price of the chasis and the superstructure of the Medium Chemical trucks (12 units), the Light Chemical trucks (15 units) and the Rescue truck (1 unit). (Total 28 trucks)
   (3) 10% of the cost estimated price of the radio equipmnet.

3. The two parties have finalized all the specifications in accordance with the following sheet ANNEX-1.

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ANNEX-1

THE FINAL BASIC DESIGN REPORT WILL BE PREPARED WITH THE FOLLOWING MODIFICATIONS.

1. Radio Equipment

   Fixing Position of the Fire Trucks' Antennas

   1) For Aerial Ladder and Aerial Platform at the side of the cabin roof
   2) For Chemical trucks and Rescue truck, direct fixing at the cabin roof
   3) The magnet type antenna should be a fixed whip-type antenna.

2. Common matters for all the fire trucks

   1) For truck chassis, the dimension (L.W.H, G.V.W.) of each truck should be included, however, confirmation that it is within Egyptian specification limit is needed.

   2) Fireman's Suits Sets

      a. Air Breathing Apparatus

         ① Two sets for the Medium Chemical truck (12 units) and the Light Chemical trucks (15 units): Total 54 sets (27 x 2)

         ② Two sets for the Aerial Ladder truck (1 unit) and the Aerial Platform truck (1 unit): Total 4 sets (2 x 2)

         ③ Six sets for the Rescue truck (1 unit): Total 6 sets

         Grand Total: 64 sets (54 + 4 + 6) with 64 spare cylinders

      b. Fireman's Suits (composed of fire coat, helmet, fire boots and gloves) Total 150 sets (30 trucks x 5 persons)

3. 46m class Aerial Ladder truck

   (1) pump operation device ..... each side
   (2) attachment at the top of ladder
      a. portable searching light of 50 W or more
      b. two(2) sokets
   (3) delivery hose with couplings
      65mm x 30m 10
   (4) Delivery hose for ladder
      65mm x 55m 2

4. 27m class Aerial Platform Truck

   (1) Delivery outlet
      BS instantaneous coupling 65mm..... two on each side (total 4)
   (2) The tower pipe is "pipe".
   (3) Coupling for 38mm hose should be attached at the cage.
   (4) Independent on/off function should be provided
   (5) Safety Device
      Fail Safe device aginst damaged pipes should be equipped
   (6) Accessaries
      Portable seach light with 30m cord reel 2

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(8)

5. Medium Chemical truck
   (1) Engine ..... not less than 200PS
   (2) Booster hose reel ..... one in the compartment of each side with high pressure hose (not more than 1 inch, not less than 30m) at the variable nozzle

6. Rescue truck
   (1) Truck chassis
      a. Total load ..... not less than 9 ton
      b. Engine Power ..... 160 HP
   (2) Compartment..... roller shutter type
   (3) Rescue equipment
      a. Lighting generator ..... diesel powered
      b. Telescopic tower flood light
         ① Max. hight 5m
         ② Turning degree ..... 350°
      c. Hydraulic scissor..... small type 75mm - 100mm wide
      d. chain saw and multi purpose saw
         ① Engine powered
         ② Chain saw (for wood)..... 1
         ③ Engine cutter (for metal & concrete) 1
      e. Air forcing ..... 1 set (including one cylinder)
      f. Submersibel pump 1
      g. Smoke removing unit (70㎥/min electric powered)..... 2 set
      h. Air cushion
         ① Surface area..... not less than 9.6㎡
         ② Weight .....23 kg
         ③ Hand-in-flatted type
         ④ Max. Jumping height approx.5m
      i. Automatic personal distal 10
      j. Rope material ..... nylon
      k. Glove ..... ordinary fire glove
      l. Blanket ..... ordinary fire blanket

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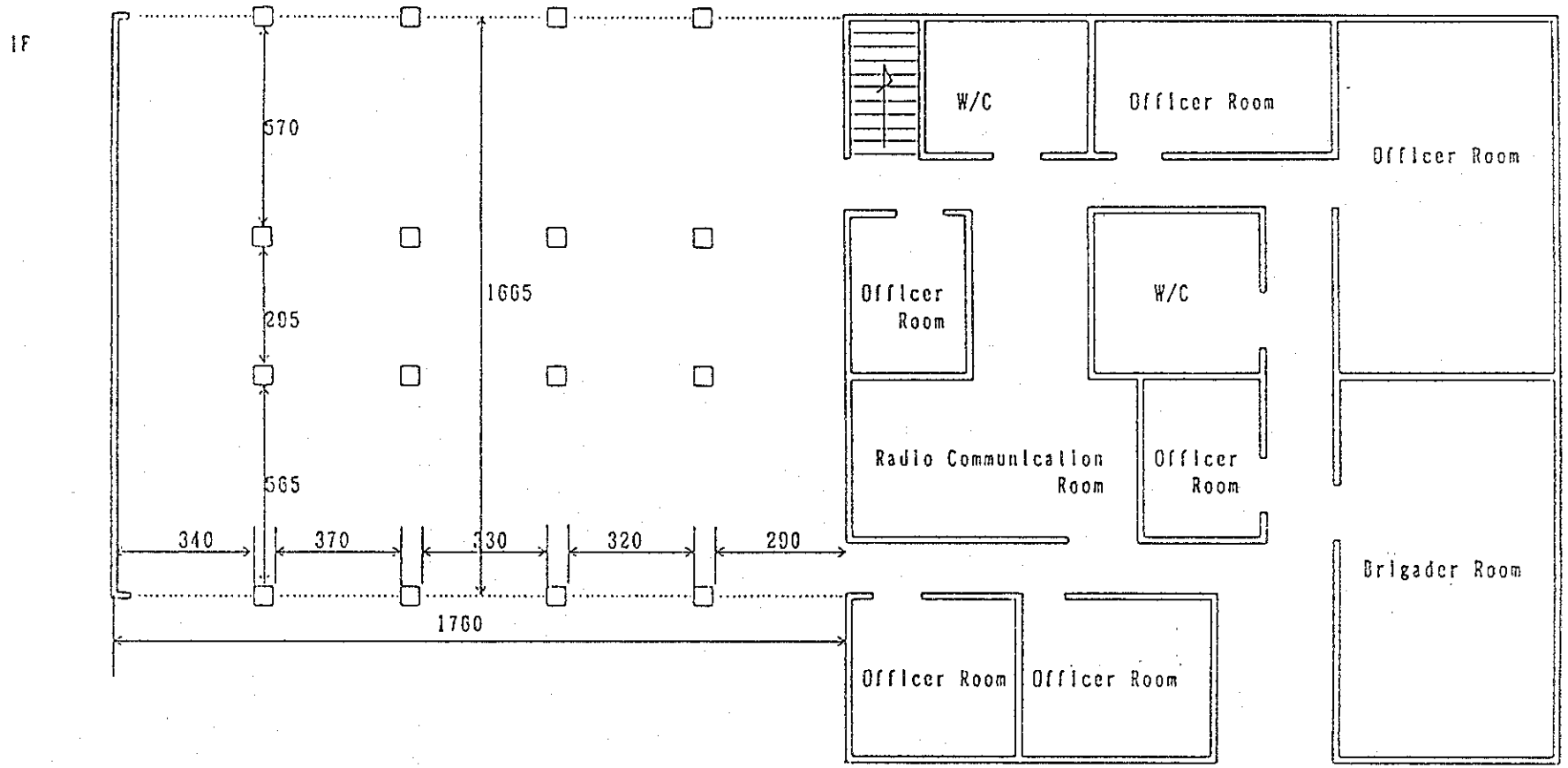
Material 6

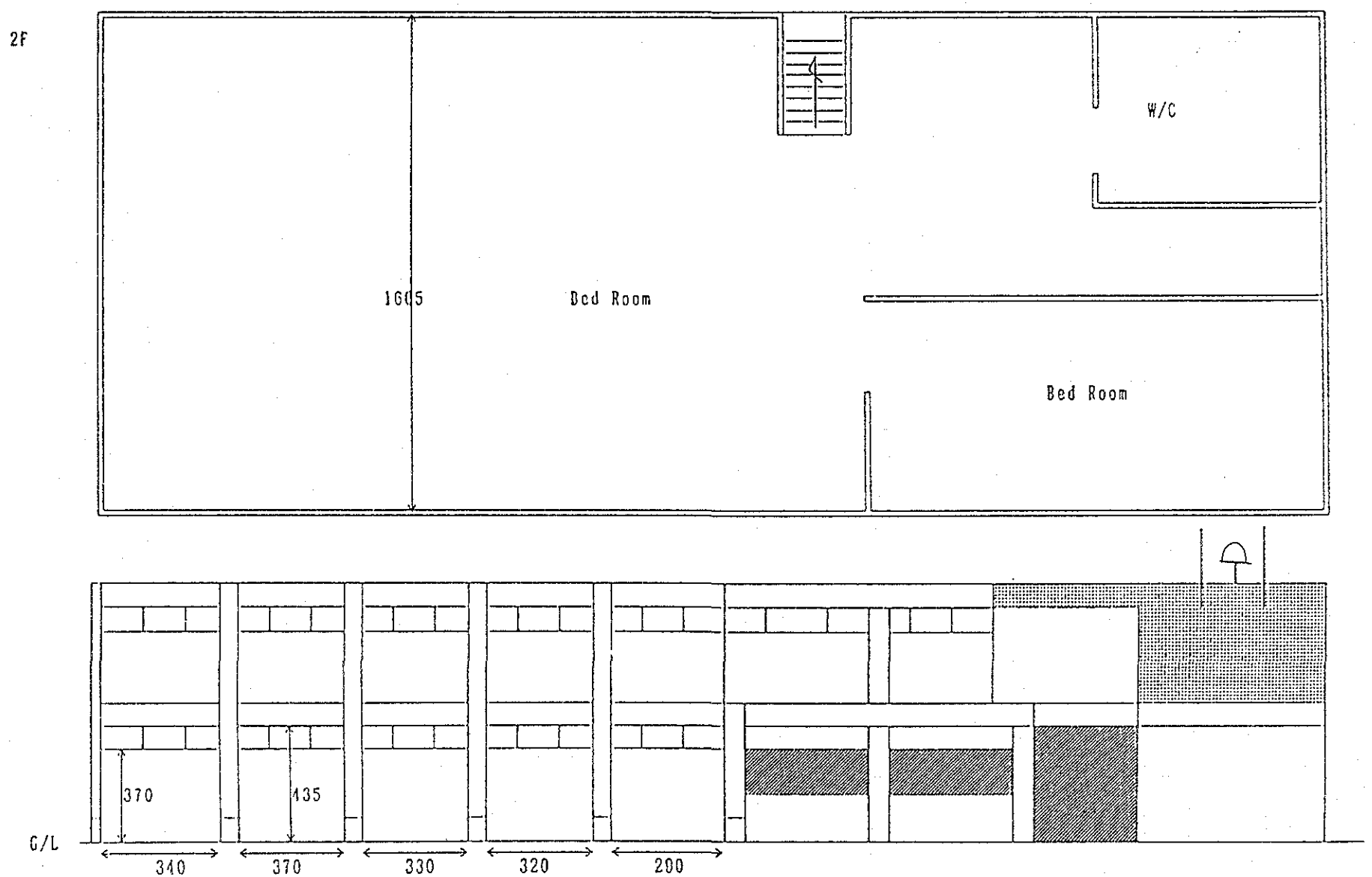
Fire Vehicle Distribution Plan

Fig. 1	Head Quarter(Main Station) F/S
Fig. 2	El Tramco F/S
Fig. 3	El Warak F/S
Fig. 4	Embaba F/S
Fig. 5	El Sudan ST. F/S
Fig. 6	El Agouza F/S
Fig. 7	El Massl Wal-Lekkah F/S
Fig. 8	Kafr Tohormoss F/S
Fig. 9	Hamadan F/S
Fig.10	Sayed darwish F/S
Fig.11	El Talbiya F/S
Fig.12	El Studio F/S
Fig.13	El Omrania F/S
Fig.14	Abul Nomross F/S
Fig.15	El Badrashein F/S
Fig.16	El Safe F/S
Fig.17	Atfih F/S
Fig.18	Massanea 1(GMC Fctory) F/S
Fig.19	Massanea 2(SUZUKI Fctory) F/S
Fig.20	El Wahat El Bahariya(Oasis) F/S

Fig. 1

G I Z A H. Q.


1F
570
205
565
1665
340
370
330
320
290
1760
W/C
Officer Room
Officer Room
Officer Room
W/C
Radio Communication Room
Officer Room
Brigader Room
Officer Room
Officer Room


2F
W/C
1605
Bed Room
Bed Room
370
435
G/L
340
370
330
320
200

A Disposal of Giza H. Q.

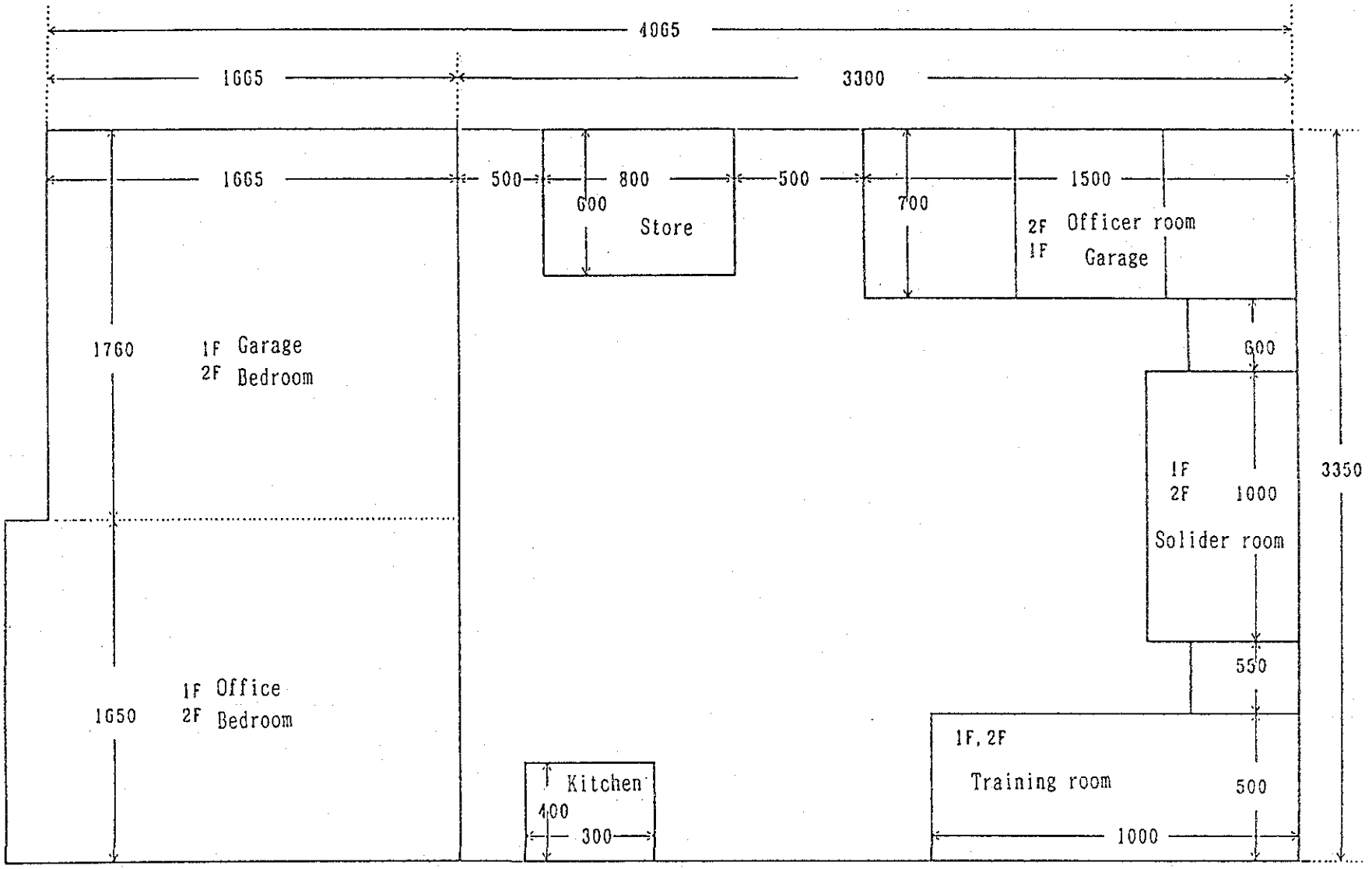


Fig. 2

El Tramco F/S

Name of F/S	El Tramco			
Structure	Concrete	Height	One-storied	
Area	Total	268.00㎡	Garage	99.00㎡
Height of Garage	Entrance	4.6 m	Ceiling	4.2 m
Joint-Structure				
Remarks	Fire Station inside a for a Tramco			

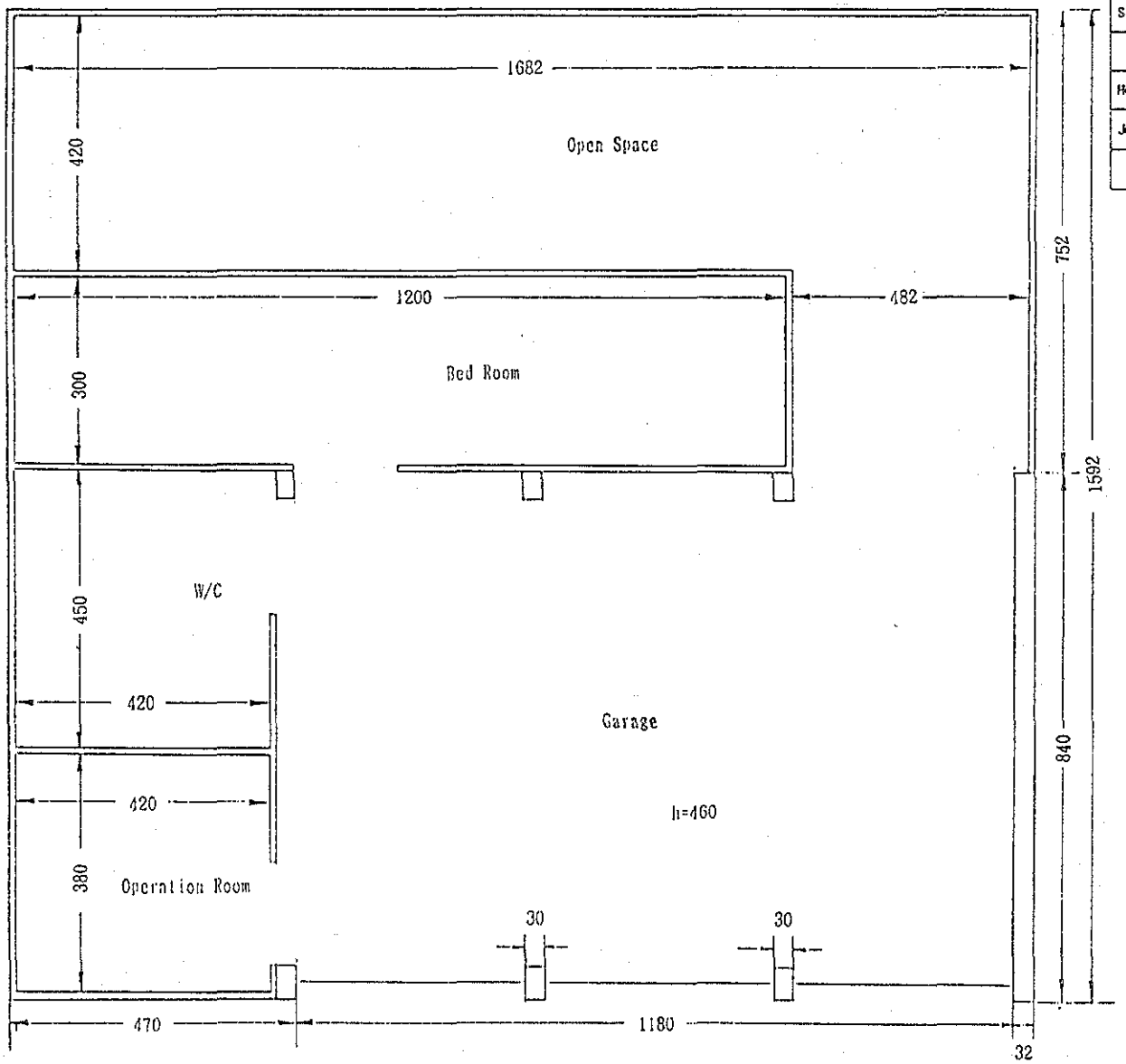


Fig. 3

E l W a r a k F / S

Name of F/S	E l W a r a k			
Structure	Concrete	Height	One-storied	
A r e a	T o t a l	172.00㎡	Garage	91.00㎡
Height of Garage	Entrance	4.3 m	Ceiling	3.7 m
Joint-Structure				
R e m a r k s				

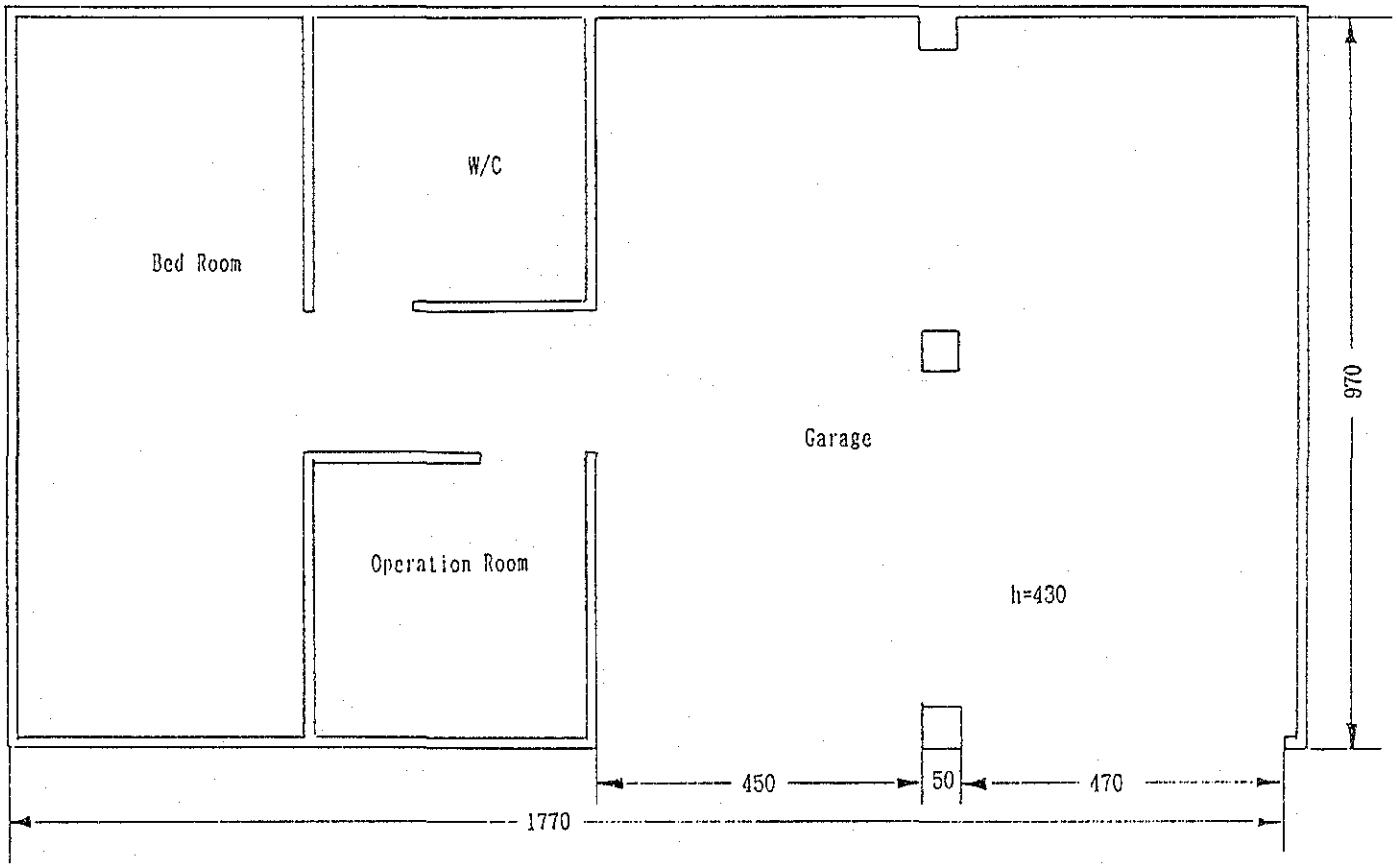


Fig. 4

Embaba F/S

Name of F/S	Embaba			
Structure	Concrete	Height	One-storied	
Area	Total	74.20㎡	Garage	44.80㎡
Height of Garage	Entrance	3.2 m	Ceiling	3.6 m
Joint-Structure				
Remarks				

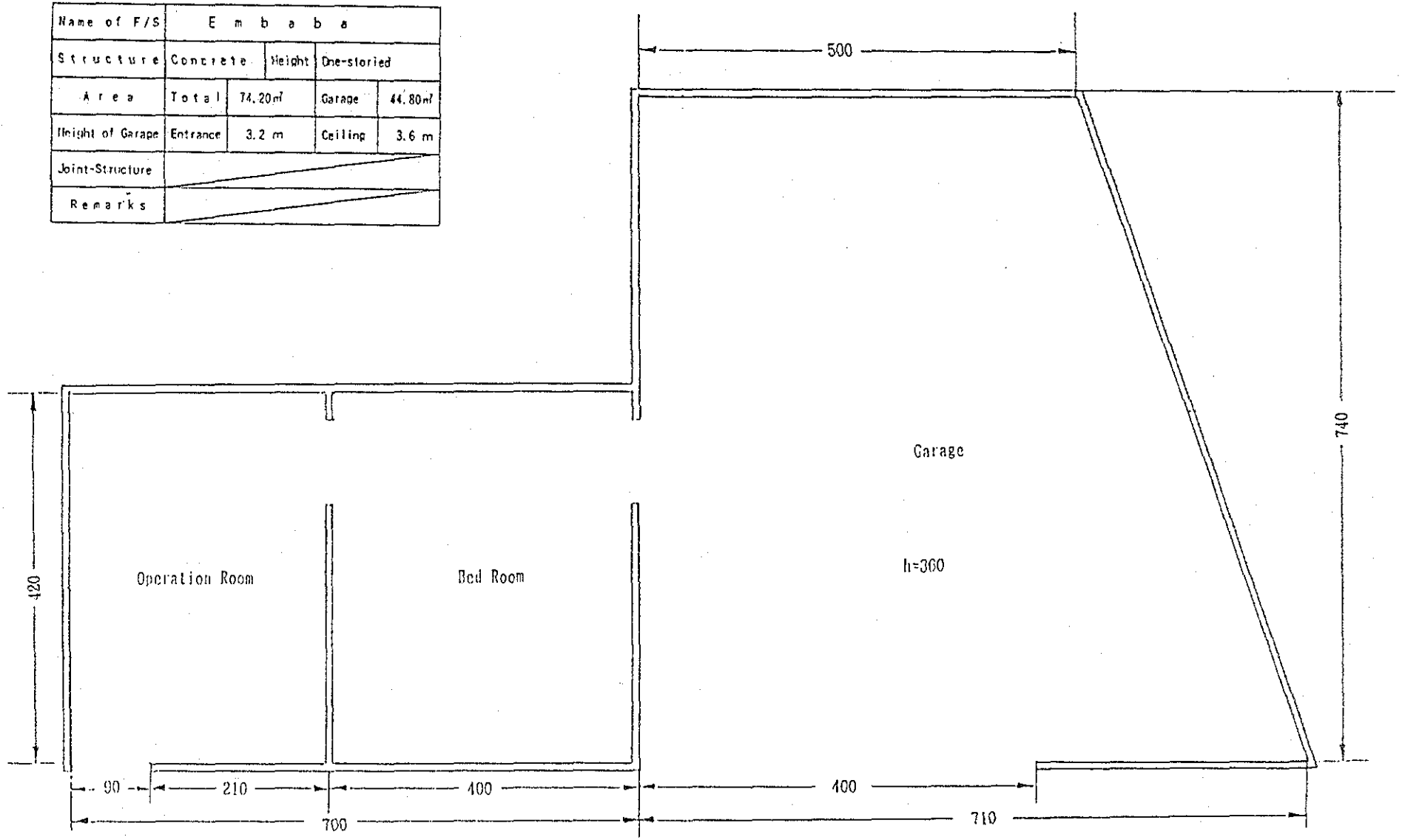


Fig. 5

Name of F/S	El Sudan ST.				
Structure	Concrete		Height	One-storied	
Area	Total	600.00㎡		Garage	260.00㎡
Height of Garage	Entrance	m		Ceiling	5.0 m
Joint-Structure					
Remarks	It will be constructed.				

El Sudan St. F/S

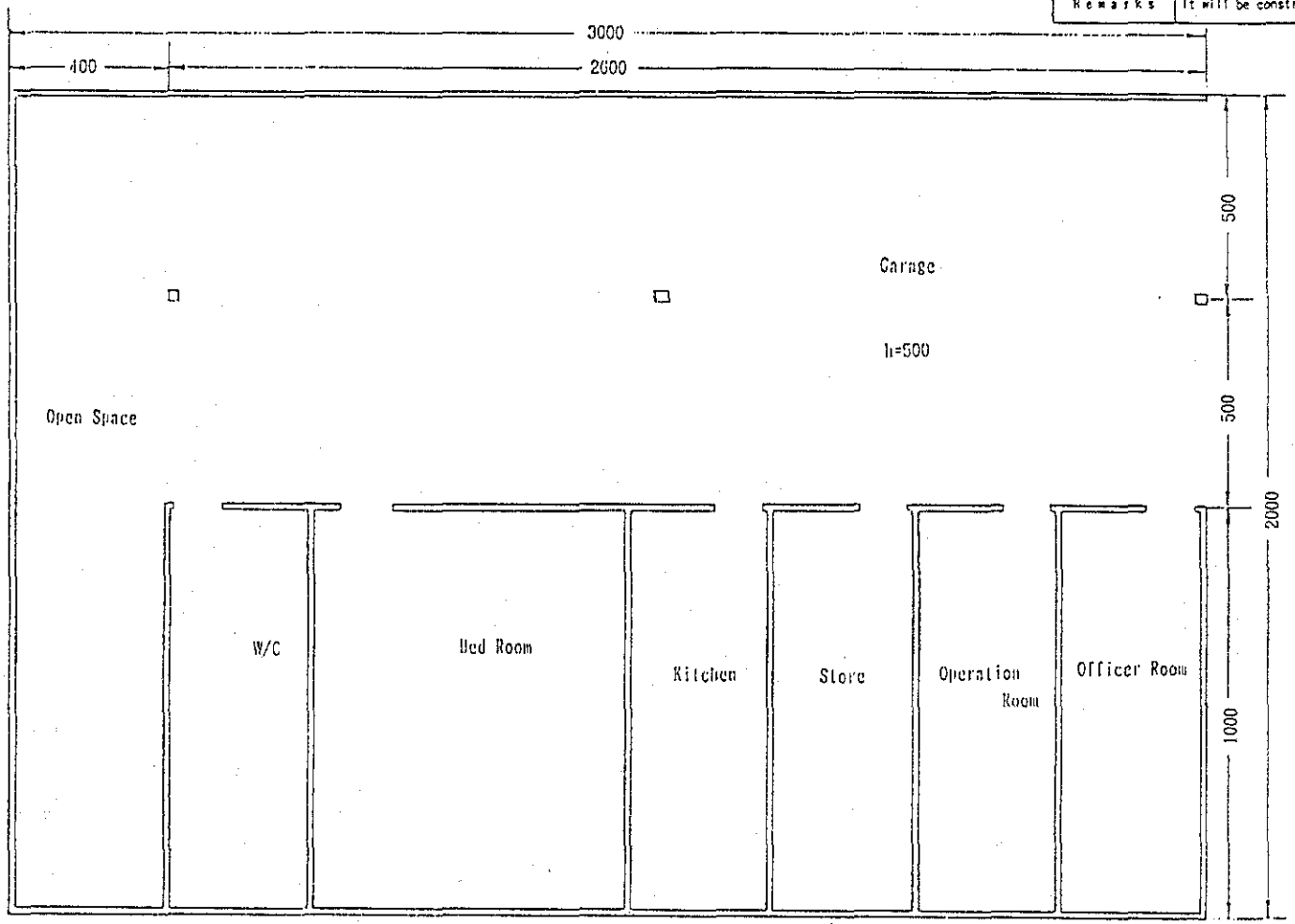


Fig. 6

El Agouza F/S

Name of F/S	El Agouza			
Structure	Concrete	Hight	Two-storied	
Area	Total	122.00m²	Garage	50.10m
Height of Garage	Entrance	m	Ceiling	3.0 m
Joint-Structure				
Remarks				

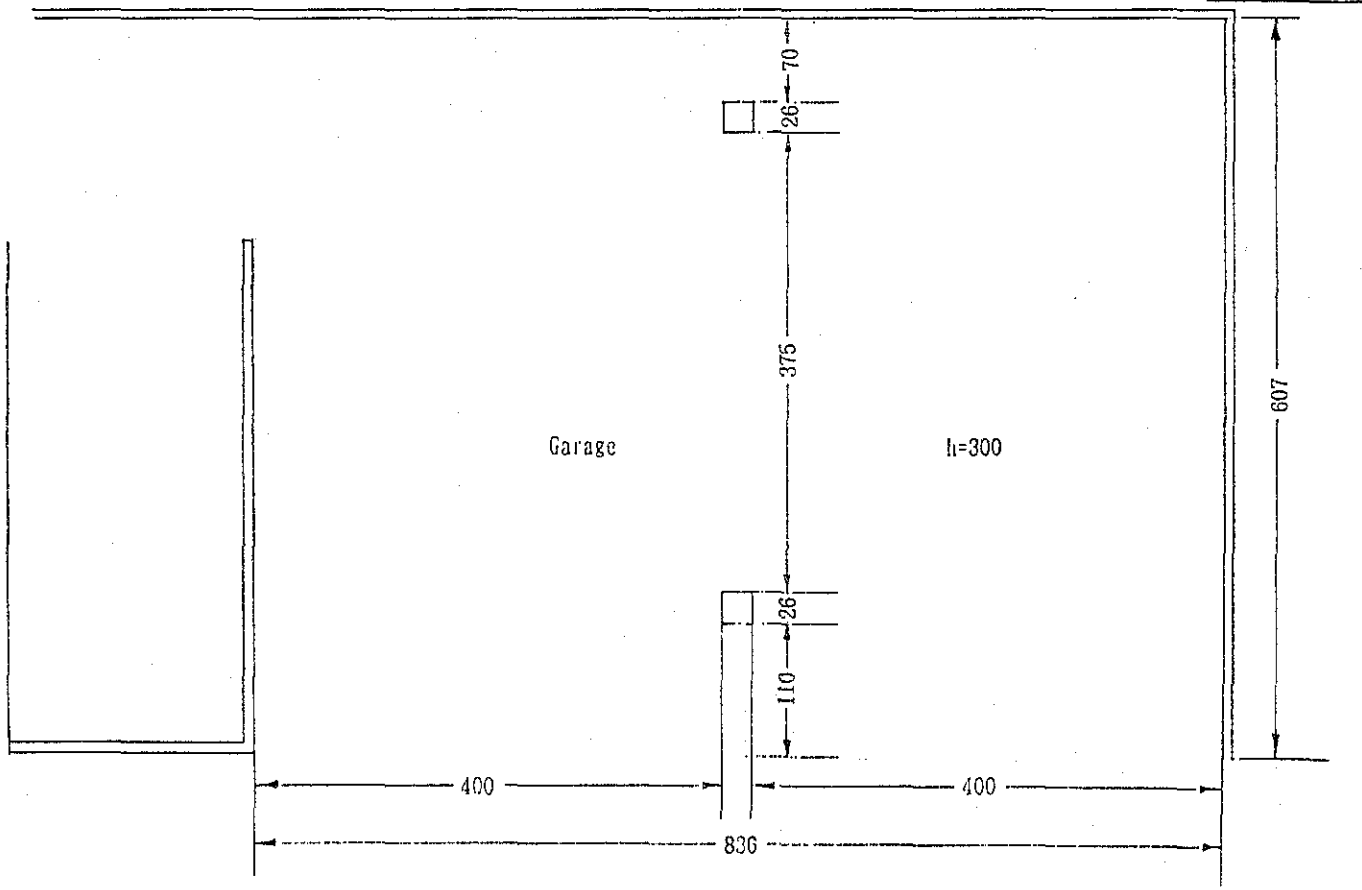


Fig. 7

El Massl Wal-Lekkah F/S

Name of F/S	El Massl Wal-Lekkah			
Structure	Concrete	Height	Two-storied	
Area	Total	220.00㎡	Garage	77.20 ㎡
Height of Garage	Entrance	3.8 m	Ceiling	3.8 m
Joint-Structure				
Remarks				

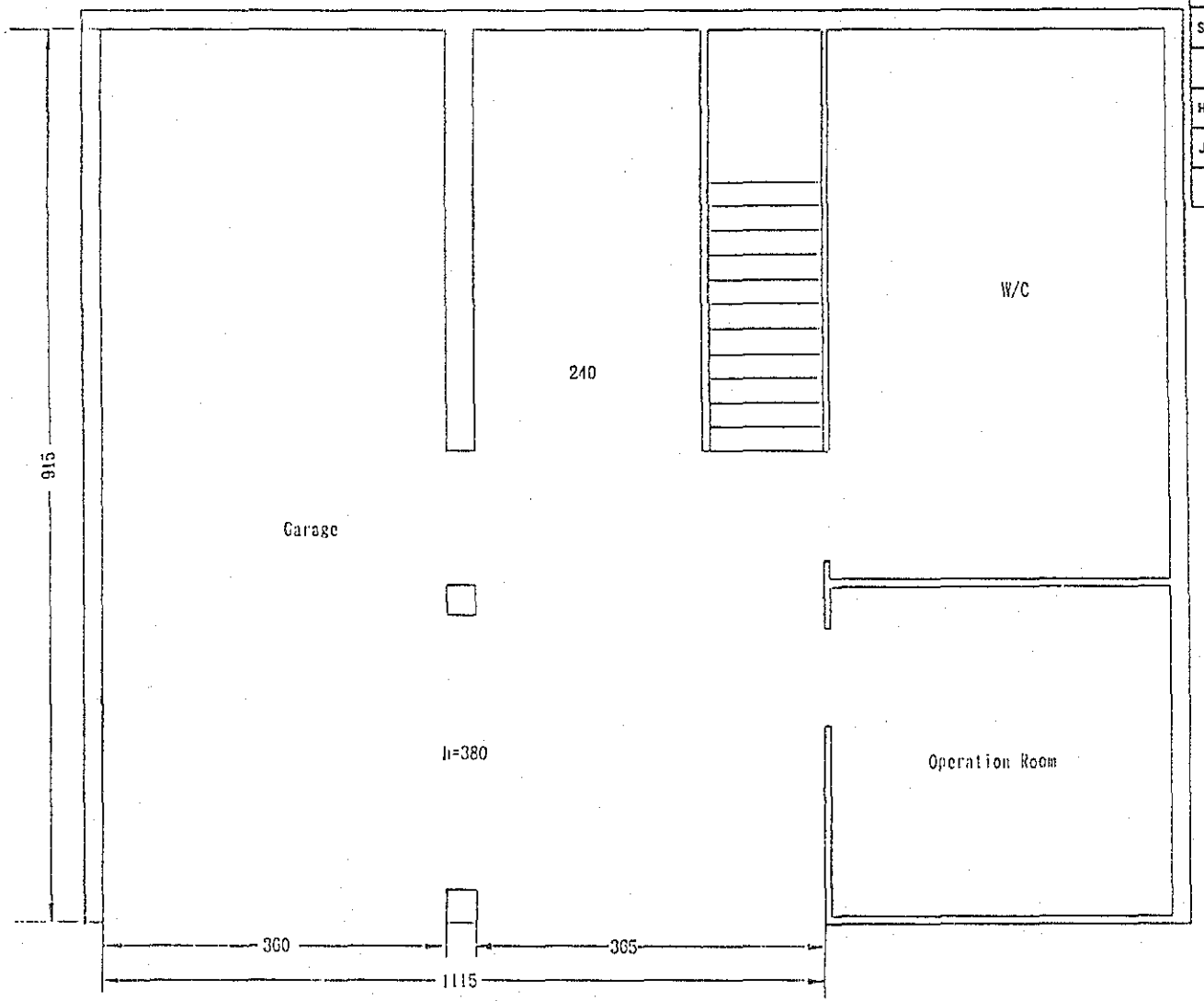
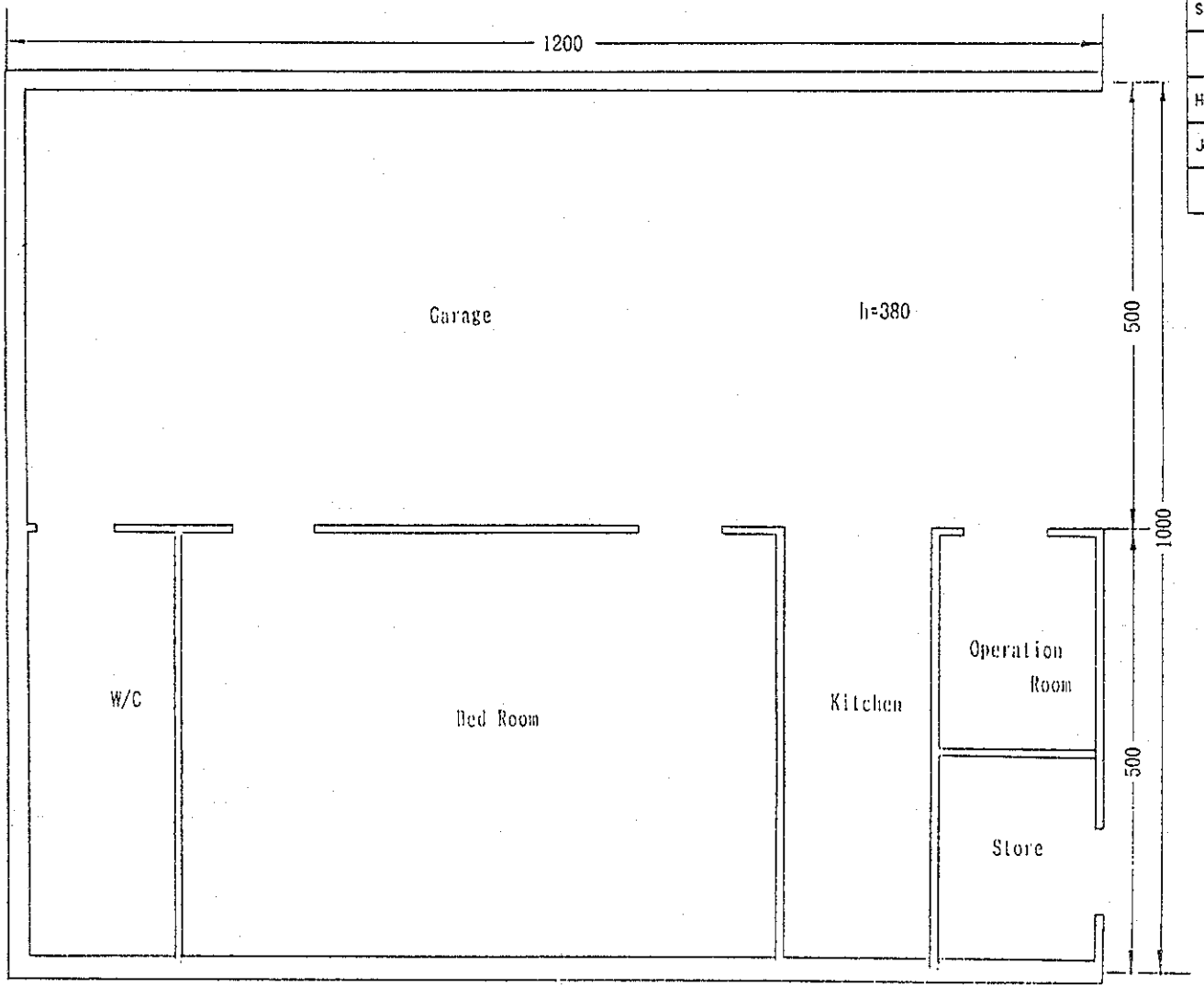


Fig. 8

Kafr Tohormoss F/S



Name of F/S	Kafr Tohormoss				
Structure	Concrete		Height	One-storied	
Area	Total	120.00㎡		Garage	60.00 ㎡
Height of Garage	Entrance	m		Ceiling	3.8 m
Joint-Structure					
Remarks	It will be constructed.				

Fig. 9

Hamadan F/S

Name of F/S	Hamadan			
Structure	Concrete	Height	Three-storied	
Area	Total	118.00㎡	Garage	62.00 ㎡
Height of Garage	Entrance	3.4 m	Ceiling	3.9 m
Joint-Structure	Occupying a part of G.F. of a flat			
Remarks				

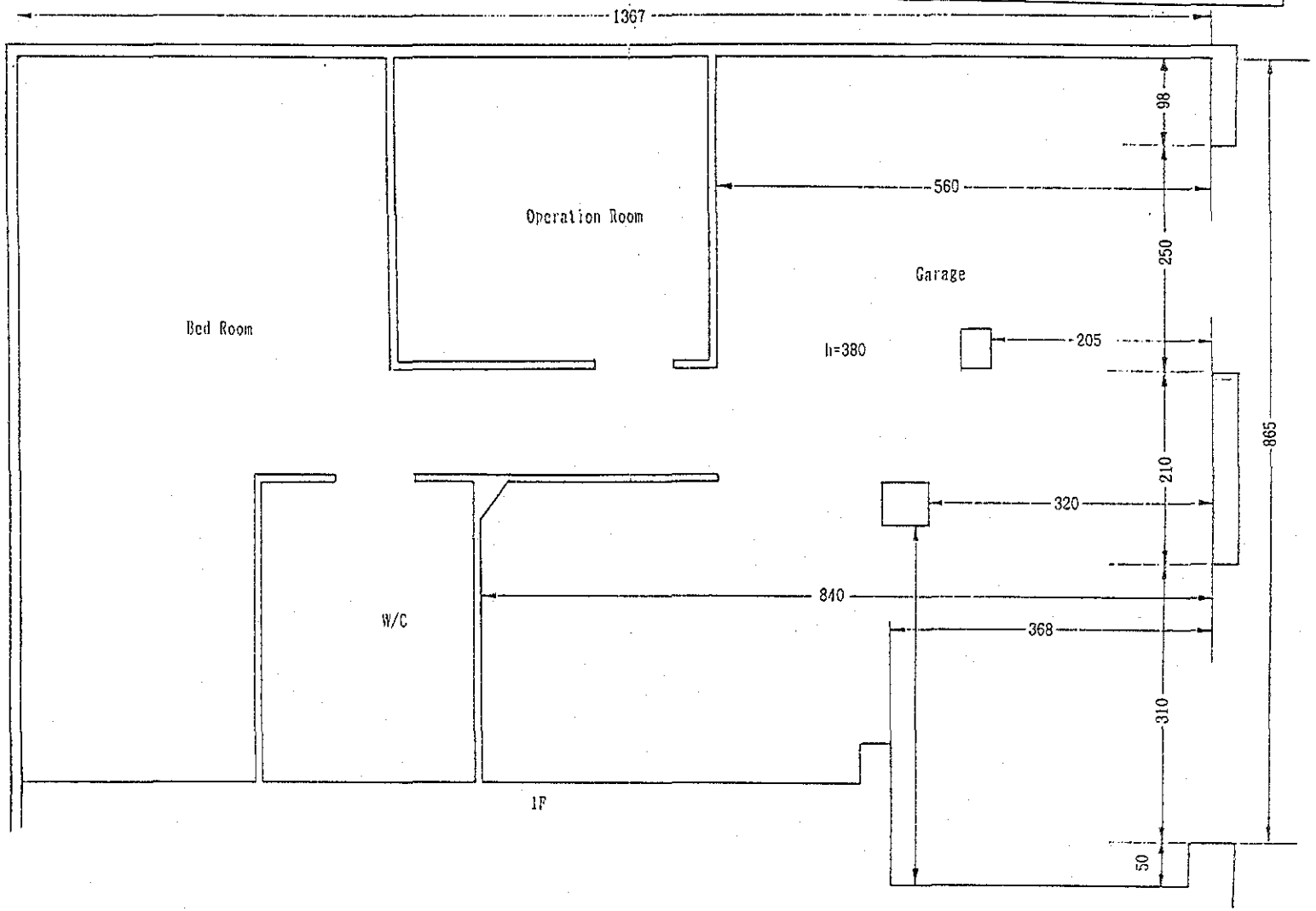


Fig.10

Sayed Darwish F/S

Name of F/S	Sayed Darwish			
Structure	Concrete	Height	One-storied	
Area	Total	216.00㎡	Garage	144.00㎡
Height of Garage	Entrance	m	Ceiling	5.0 m
Joint-Structure				
Remarks	It will be constructed.			

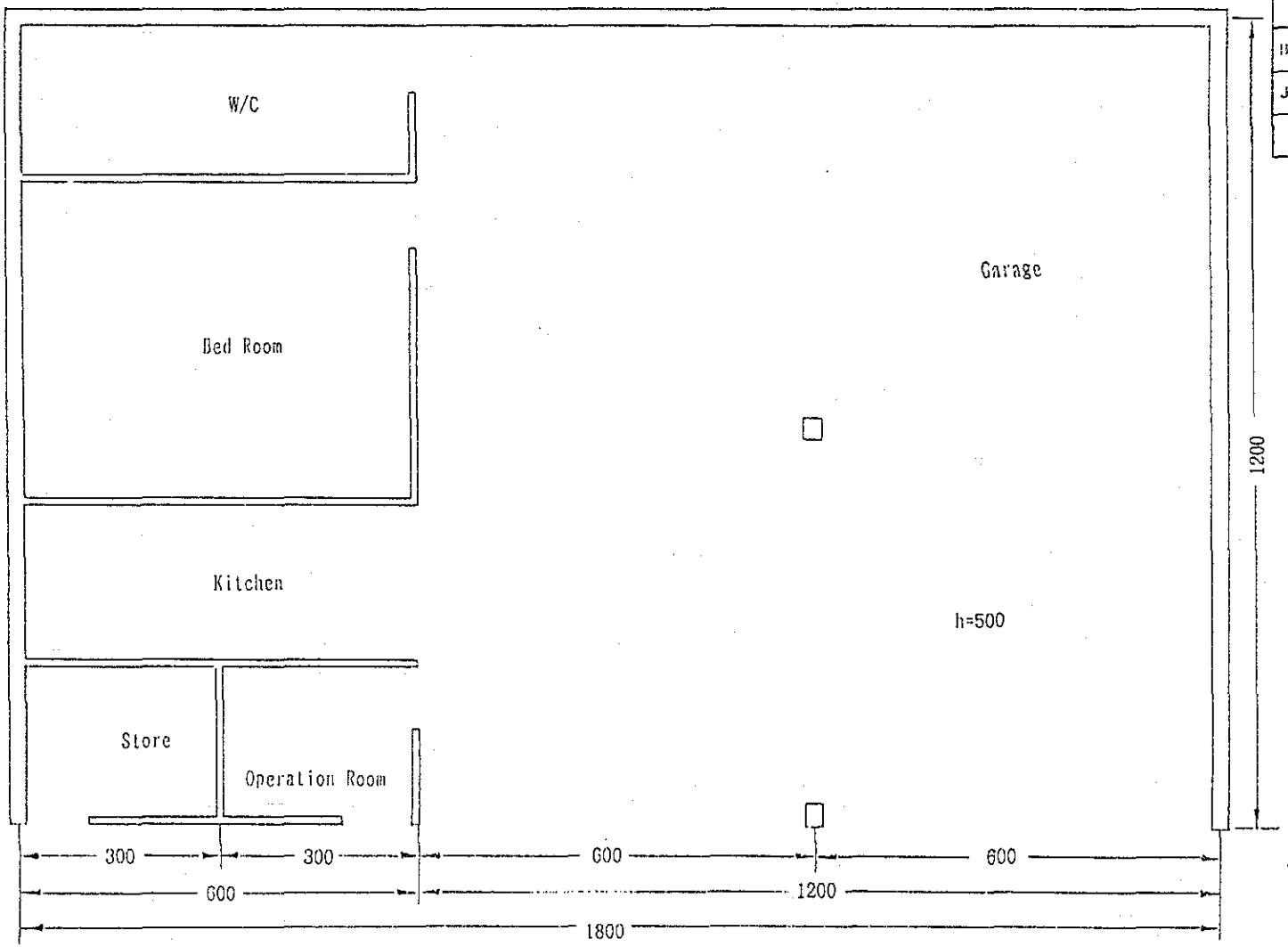


Fig.11

El Talbiya F/S

Name of F/S	El Talbiya			
Structure	Concrete	Height	Two-storied	
Area	Total	100.90㎡	Garage	56.00㎡
Height of Garage	Entrance	4.0 m	Ceiling	4.5 m
Joint-Structure	A part of G.F. & 1st F. is for Police			
Remarks				

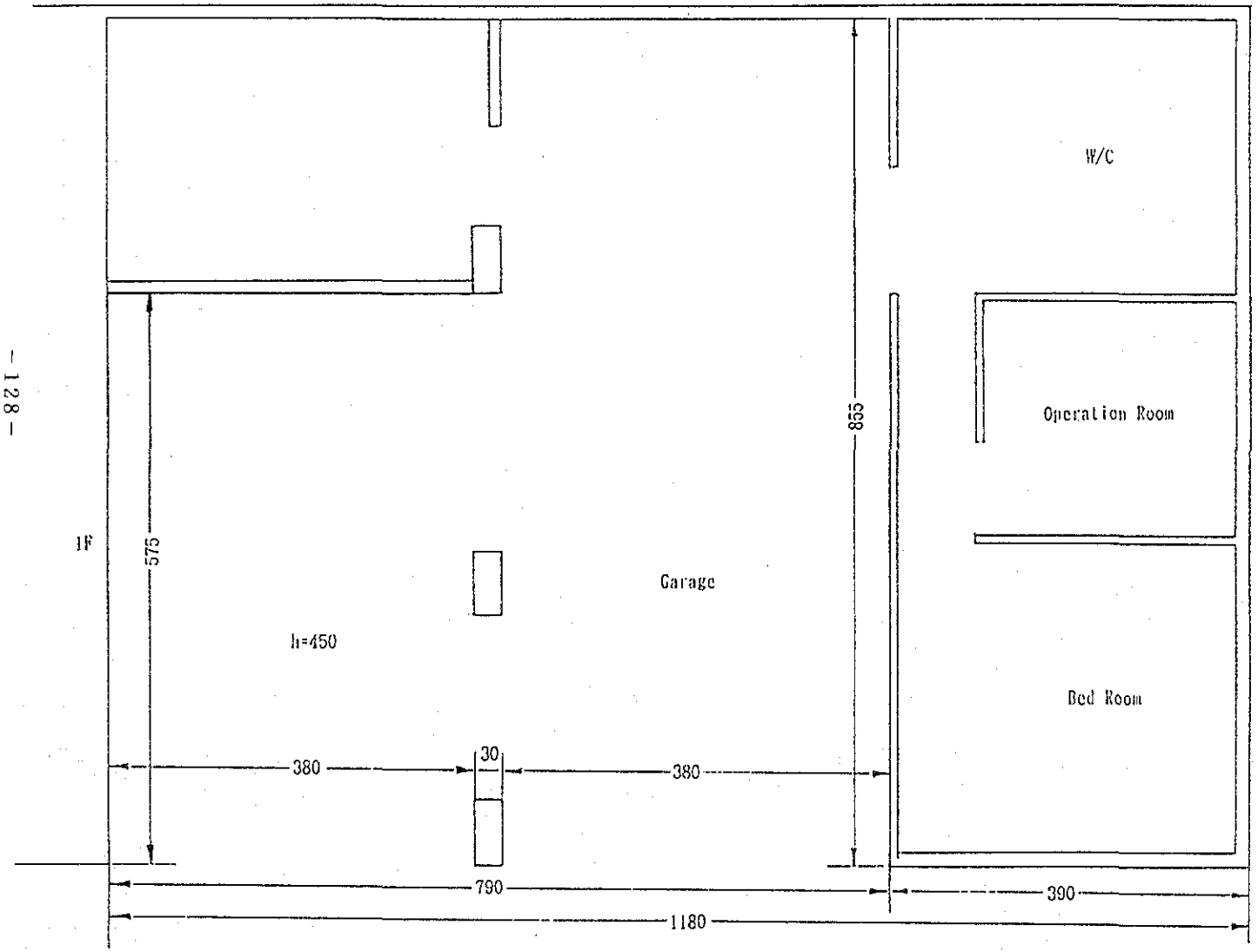


Fig.12

E l S t u d i o F / S

Name of F/S	E l S t u d i o			
S t r u c t u r e	Concrete	Height	Two-storied	
A r e a	T o t a l	㎡	Garage	150.60㎡
Height of Garage	Entrance	3.1 m	Ceiling	3.6 m
Joint-Structure				
R e m a r k s				

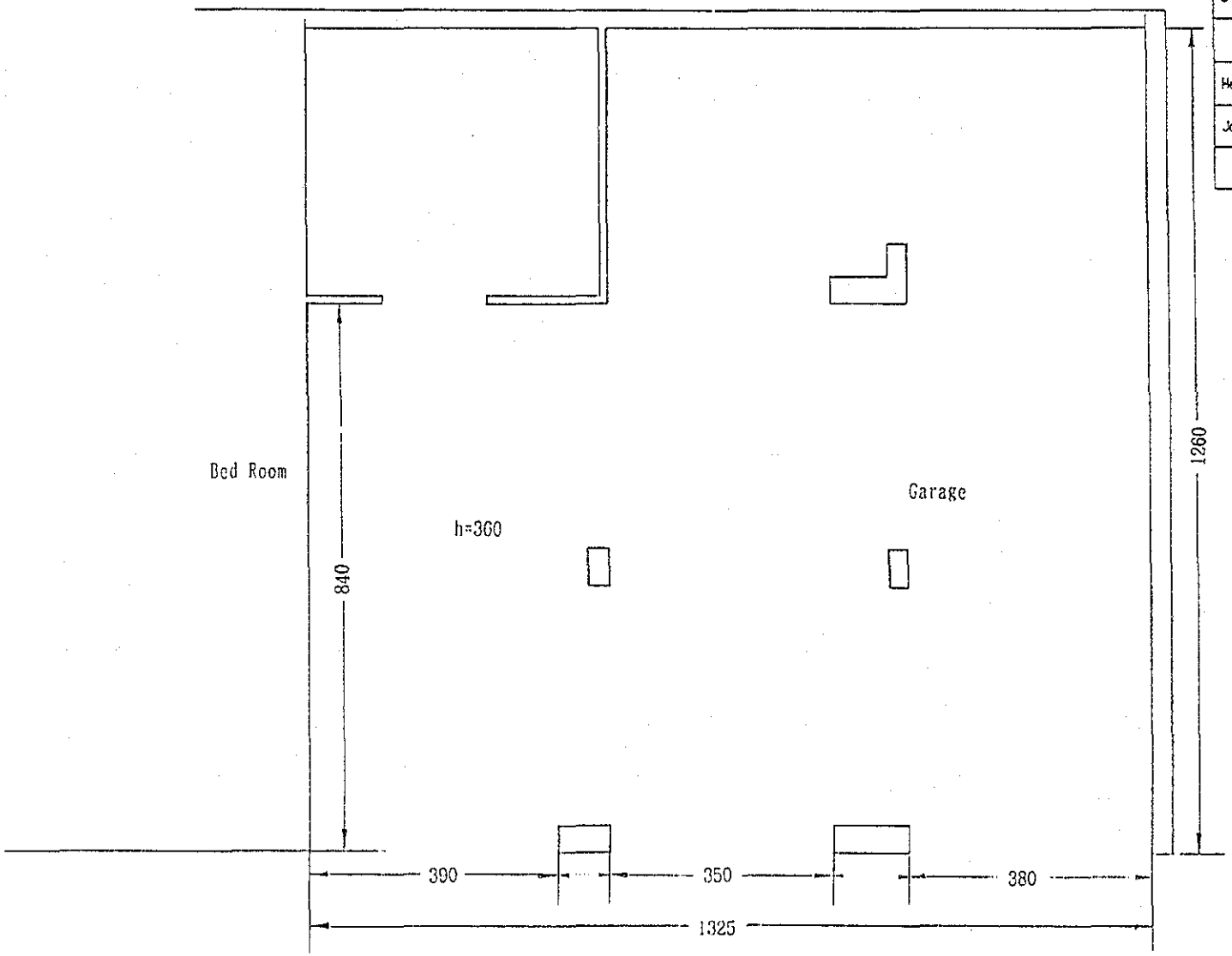


Fig.13

El Omraniya F/S

Name of F/S	El Omraniya			
Structure	Concrete	Height	Two-storied	
Area	Total	240.00㎡	Garage	88.60㎡
Height of Garage	Entrance	5.9 m	Ceiling	6.5 m
Joint-Structure				
Remarks	Under construction in a site for a cigarette factory			

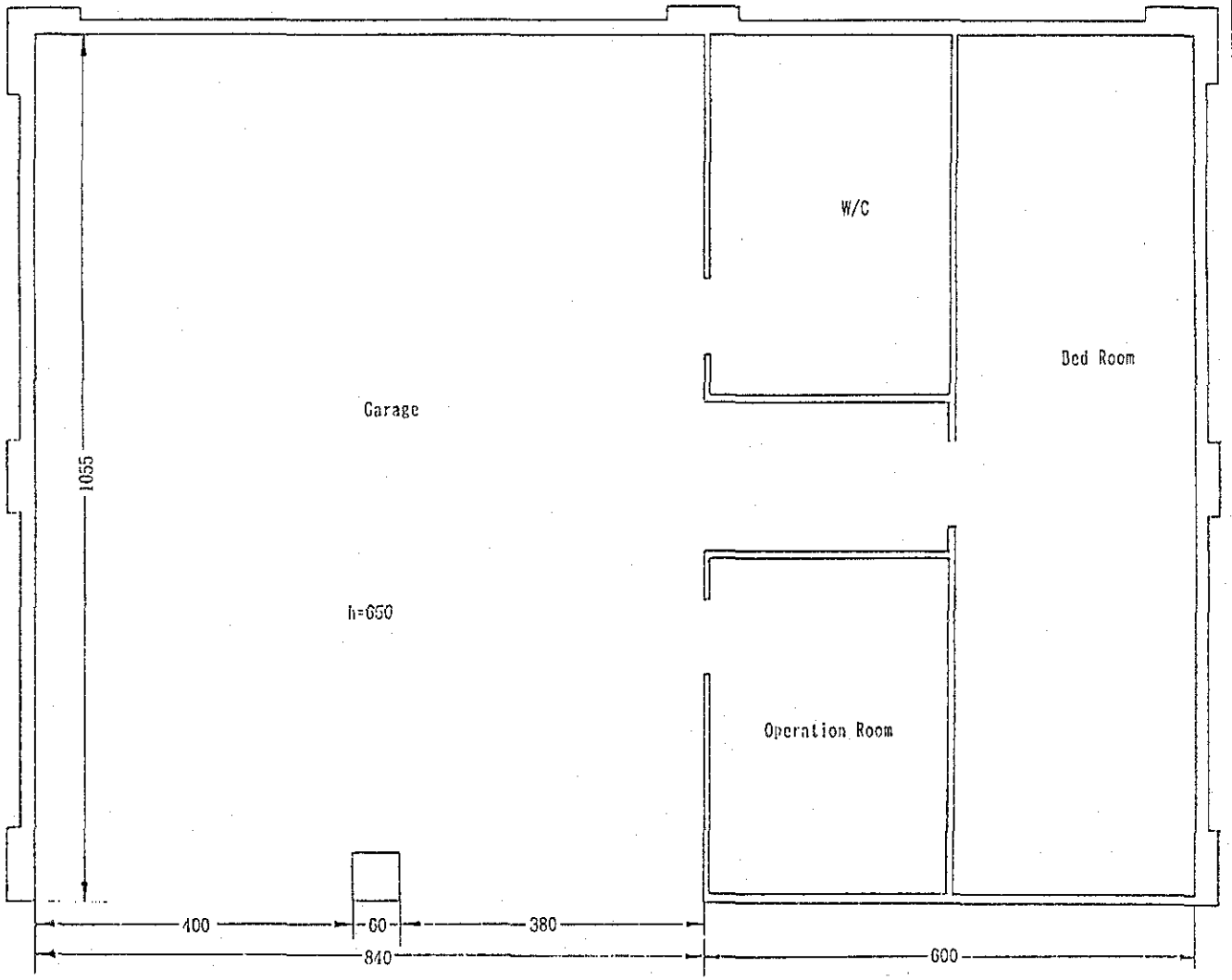


Fig.14

Abul Nomross F/S

Name of F/S	Abul Nomross			
Structure	Concrete	Height	Two-storied	
Area	Total	m²	Garage	115.60m²
Height of Garage	Entrance	3.4 m	Ceiling	3.8 m
Joint-Structure	A part of G.F. & 1st F. is for Police			
Remarks				

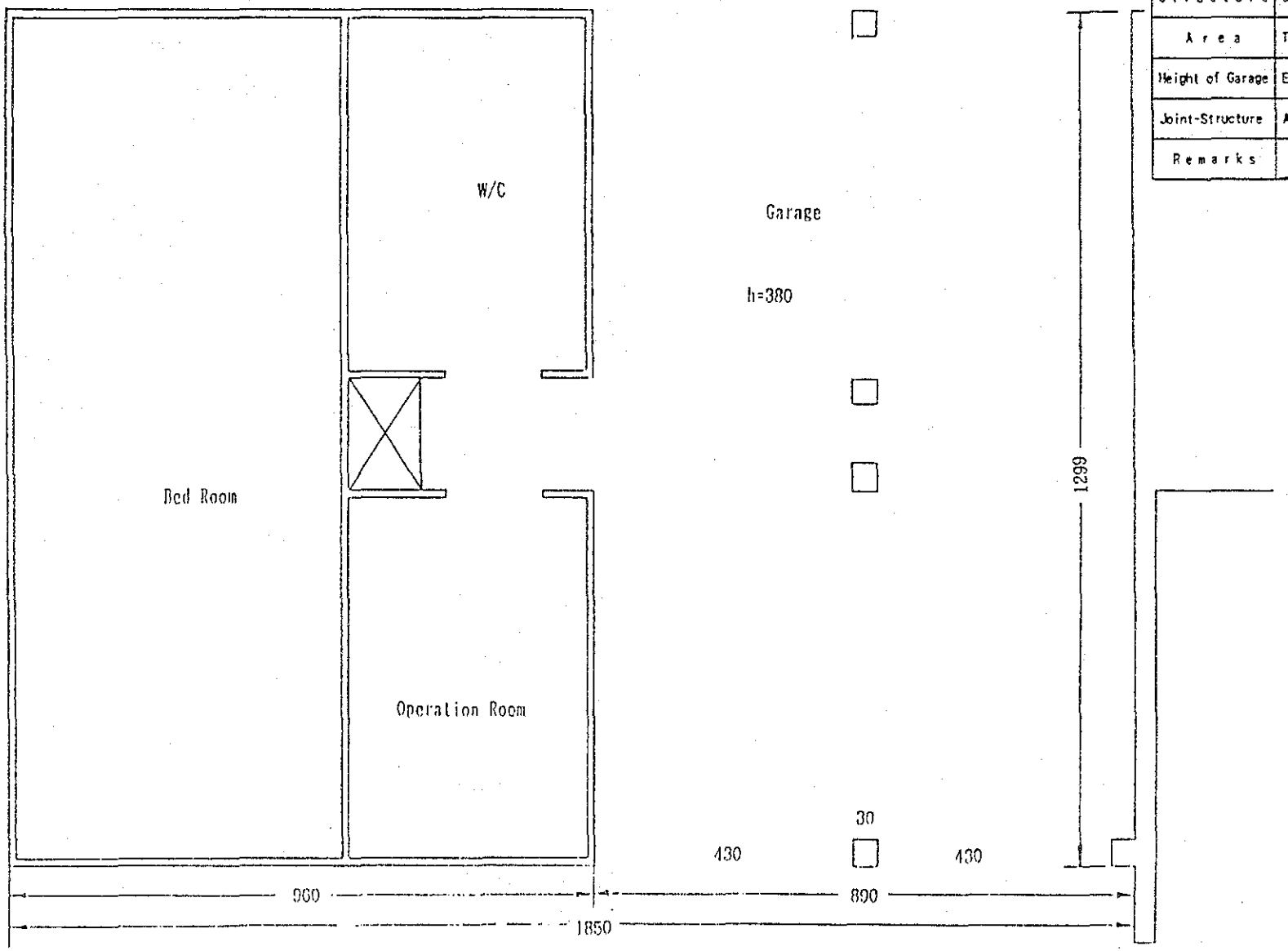
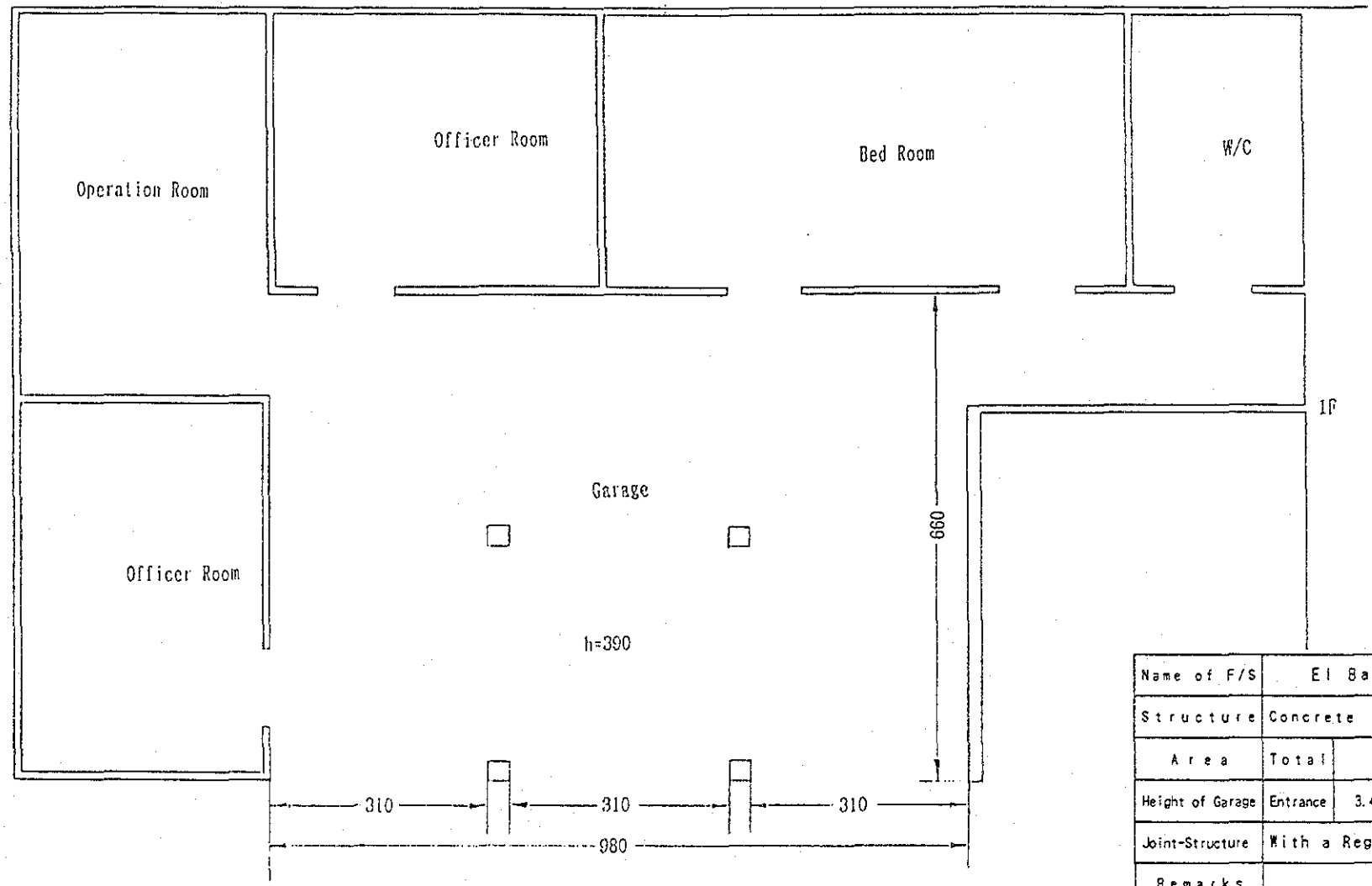


Fig.15

El Badrashein F/S



Name of F/S	El Badrashein			
Structure	Concrete	Height	Three-storied	
Area	Total	㎡	Garage	65.30㎡
Height of Garage	Entrance	3.4 m	Ceiling	3.9 m
Joint-Structure	With a Regional Office			
Remarks				

Fig.16

Name of F/S	El Safe			
Structure	Concrete	Height	Three-storied	
Area	Total	㎡	Garage	39.90 ㎡
Height of Garage	Entrance	3.3 m	Ceiling	3.8 m
Joint-Structure	With Police and Ambulance Sta.			
Remarks				

El Safe F/S

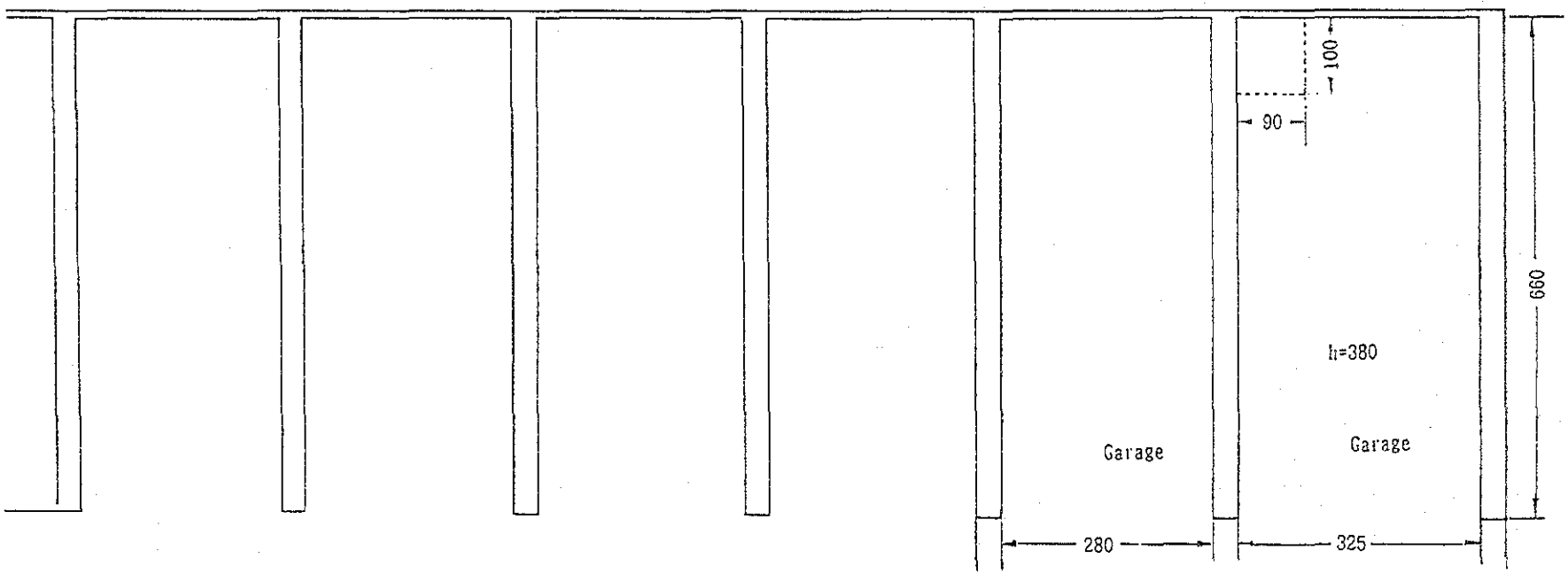
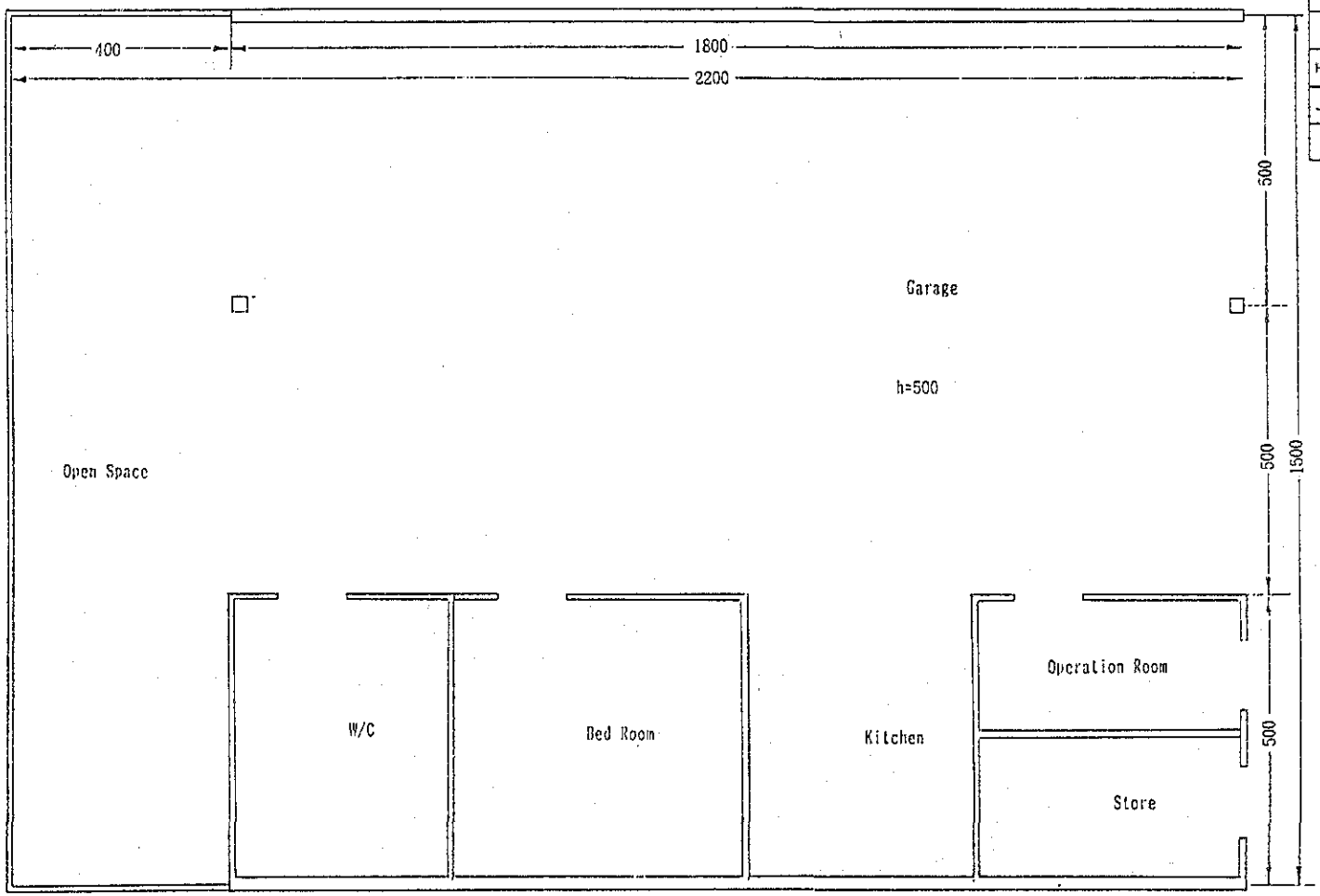


Fig.17

A t f i h F/S



Name of F/S	A t f i h			
Structure	Concrete	Height	One-storied	
A r e a	T o t a l	330.00 ㎡	Garage	150.00㎡
Height of Garage	Entrance	m	Ceiling	5.0m
Joint-Structure				
R e m a r k s	It will be constructed.			

Fig.18

Massanea 1 F/S

Name of F/S	Massanea 1 (GMC Factory)			
Structure	Concrete	Height	One-storied	
Area	Total	120.00 ㎡	Garage	72.00 ㎡
Height of Garage	Entrance	m	Ceiling	5.0 m
Joint-Structure				
Remarks	It will be constructed.			

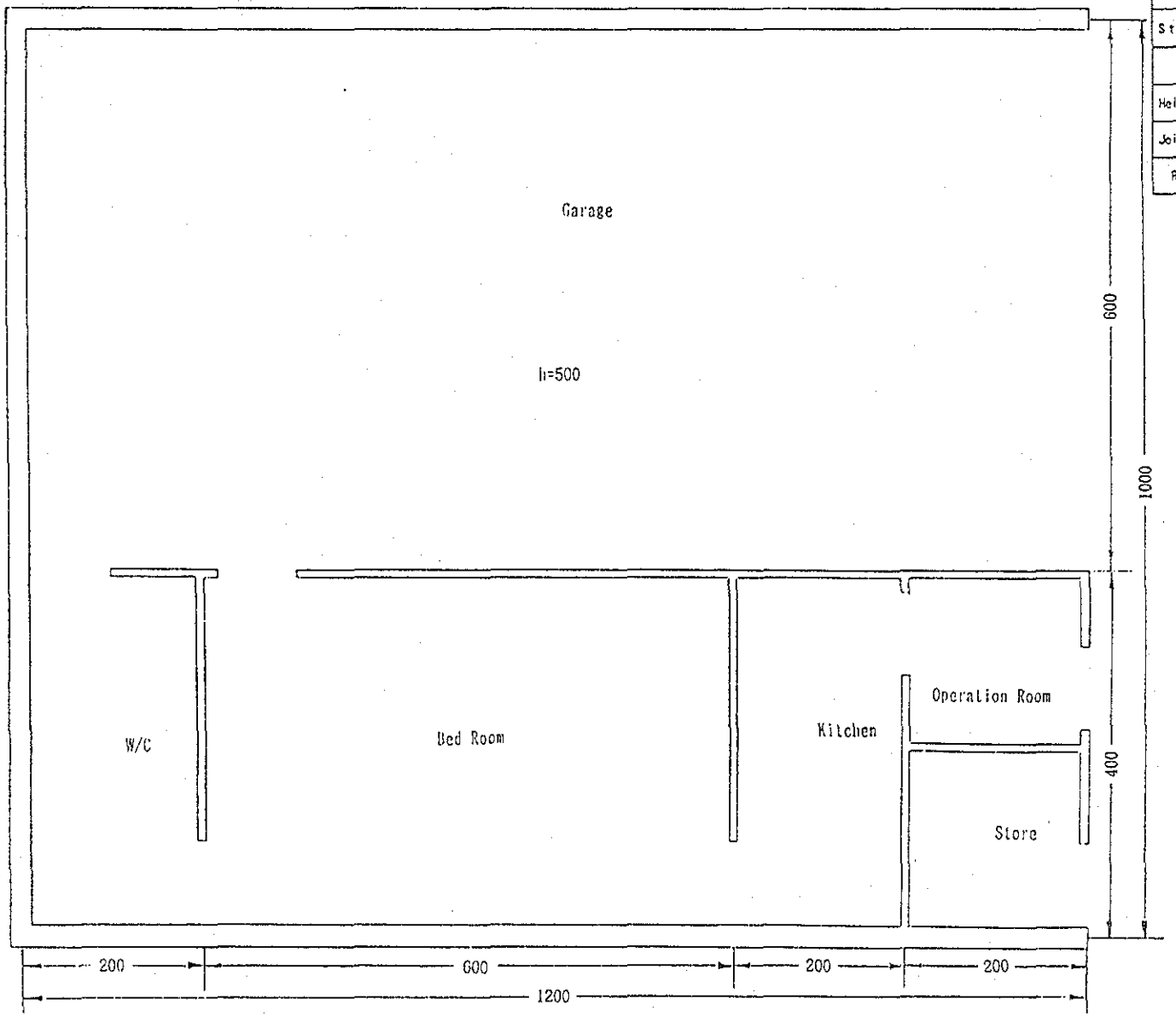


Fig.19

Massanea2 F/S

Name of F/S	Massanea 2 (SUZUKI Factory)			
Structure	Concrete	Height	One-storied	
Area	Total	133.00 ㎡	Garage	82.00 ㎡
Height of Garage	Entrance	m	Ceiling	5.0 m
Joint-Structure				
Remarks	It will be constructed.			

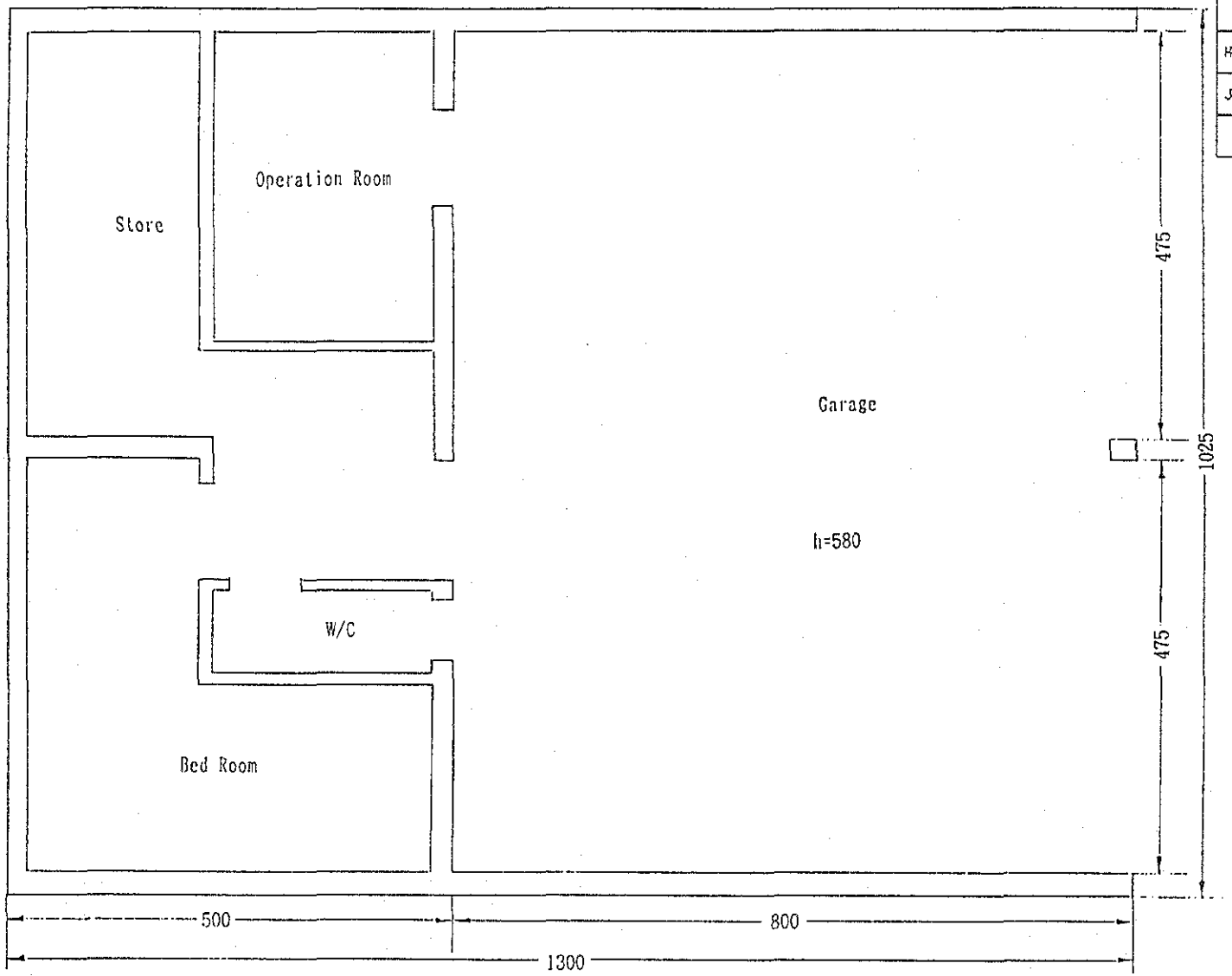
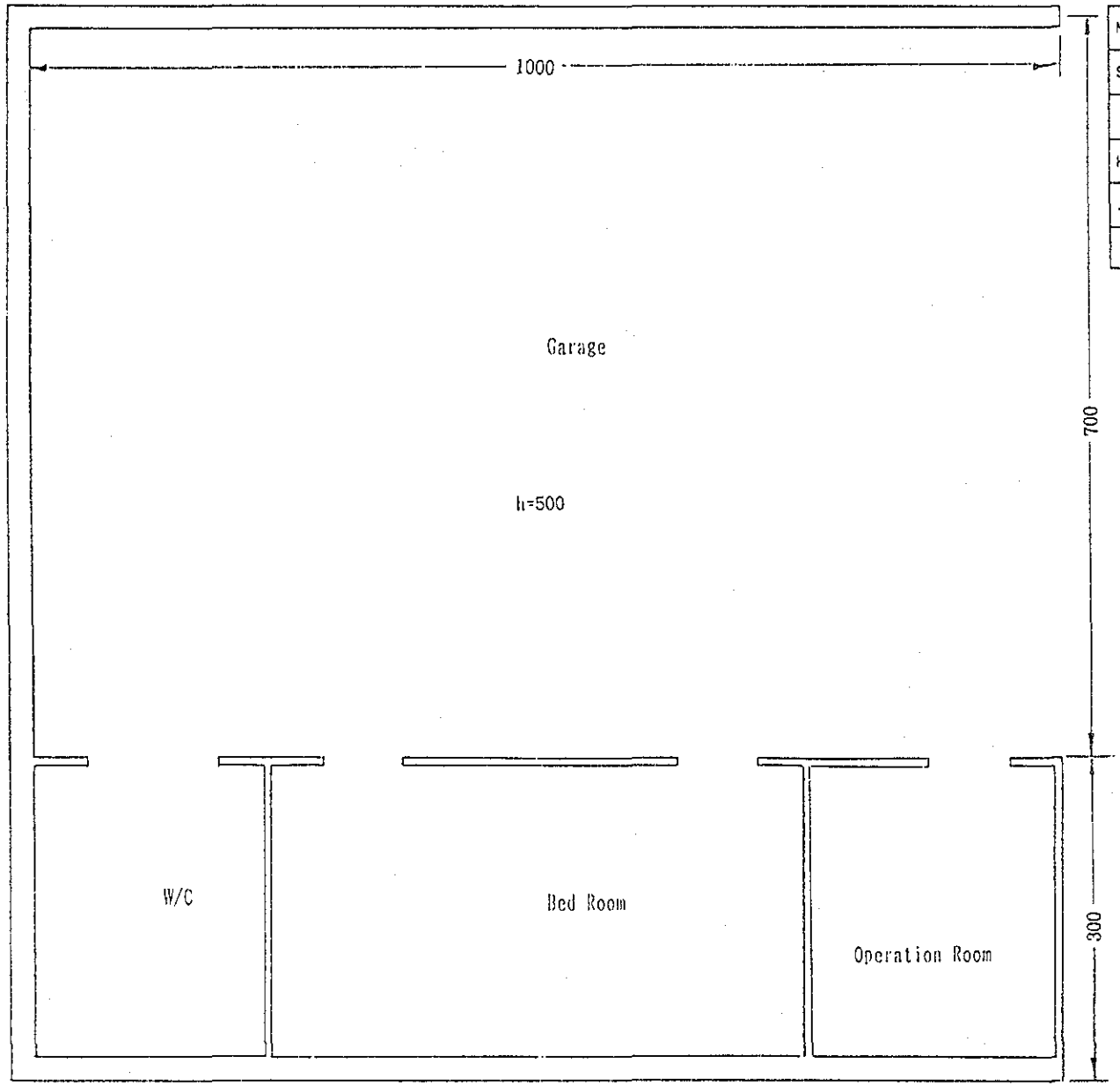


Fig.20

El Wahat El Bahariya (Oasis) F/S



Name of F/S	El Wahat El Bahariya(Oasis)			
Structure	Concrete	Height	One-storied	
Area	Total	100.00 ㎡	Garage	70.00㎡
Height of Garage	Entrance	m	Ceiling	5.0 m
Joint-Structure				
Remarks	It will be constructed.