

2 - 3 Basic Design

2 - 3 - 1 Design Policies

(1) Policy for Natural Conditions

The West Bank is approximately 130km long in a north-south direction and 30km to 50km wide in an east-west direction and is stretches located to the west of the Jordan River. The Region belongs to the Mediterranean climate zone that is generally mild. However, the Region's climate may vary slightly from place to place. The area along the Jordan River is basically a dry zone. It becomes more desert-like when descending in a north to south direction. The central area is a mountainous zone having heights in the range of 800m to 1,000m above sea level. The summers are relatively cool and it snows in the winters. The low land areas located in the northern and western parts of the West Bank are low elevation zones and have sufficient precipitation. The climate in these areas is mild.

Annual precipitation in the West Bank varies greatly from year to year and from area to area. The Jericho area has an annual precipitation of about 200mm. The central area has about 550mm and the northeastern lowland area has approximately 900mm of annual precipitation. A westerly wind prevails throughout the year in the West Bank.

Neither strong storms nor tornadoes have been recorded in the West Bank. The valley, which stretches from the Jordan River to the Red Sea through the Dead Sea, forms a trough which is known to be a frequent earthquake area. Earthquake damage has been recorded since the dawn of history in the area.

Based on the above-mentioned area conditions, the following factors have to be taken into account for the facility design of the Project:

- a) As the prevailing wind is westerly, toilets for pupils shall be arranged at the eastern most part of each school site.
- b) As earthquake damage has been recorded many times throughout history, The buildings shall be designed by anti-seismic design method as earthquake damage has been recorded many times throughout history.

As for the value of seismic force at each site, the zone coefficient shown in the seismic risk map prepared in 1982 by the Seismological Division of Institute for Petroleum Research and Geophysics, Israel will be taken into full consideration.

- c) As there are no records for storms and strong tornados in the West Bank and the maximum wind speed is less than 30 m/sec, it is not necessary to take into account the wind force effects for the structural design of concrete buildings. However, when check is required, wind force pressure will be calculated by an equation derived from the maximum average wind speed.
- d) No heating and air conditioning system shall be installed. However, by taking into consideration the hot summers in Jericho, ceiling fans shall be installed in the school buildings in this area.

(2) Policy for Social Conditions

1) Consideration for Religious Peculiarities

The Region is an Islamic society and the effects of the religion are obviously seen in the daily lives of its people. As part of the social code, men and women are strongly prohibited from sitting together thus special attention shall be given to this matter when preparing the architect design. In most of the low basic and high basic schools, male and female pupils and teachers are strictly separated. Among Project schools, there are two coeducation schools. Thus, special attention shall be paid to the separation of teacher's rooms as well as making separate toilets for male and female teachers. In separate male and female schools, special consideration shall be given to visitors. A separate toilet booth shall be provided for another different gender.

2) Consideration for Handicapped Pupils

Consideration for handicapped pupils is a social requirement for public schools in the Gaza Strip and the West Bank. It is very expensive to provide complete equal measures in school buildings for handicapped pupils. Thus, measures for these individuals shall be considered as follows based on discussions with the Palestinian side:

- a) The ground floor shall be a free-access floor provided with a slope between the floor and the school ground;
- b) On the free-access floor, a toilet for handicapped pupils, two ordinary classrooms, major special classrooms, and the administration rooms shall be arranged to allow the conduct of most daily school activities.

(3) Policy for Local Construction Conditions

1) Rules and Regulations for Building

In the West Bank, building permits shall be obtained and it is necessary to submit applications to each related municipality. As yet there are no building laws, but each municipality has their own urban planning which stipulates the floor area ratio, building coverage ratio, floor numbers, and setback of wall surface lines, etc. In rural areas, local offices of the Ministry of Local Government issue building permits.

For preparing building layout plans, the above mentioned urban planning regulations and guidelines will be taken into full consideration. Upon building design, cares to secure the safety of pupils in school buildings will be taken as much as possible, at least so as to comply with the minimum requirements stipulated by the Japanese Building Standard Law.

2) Local Consultants

In the West Bank, there are several prime consultants who have undertaken projects financed by UNRWA and the World Bank. Their engineering capabilities are high. It shall be a premise to obtain the cooperation of those consultants who know the local conditions in detail for the detailed design and construction supervision of Project facilities.

3) Local Contractors

There are approximately 150 contractors registered in the construction industry association in the West Bank. There are approximately 40 contractors who have the capabilities to undertake the construction of school facilities of equal sizes and grades of the Project facilities. The project construction plans is prepared based on the premise to positively utilize those local contractors. And Project facility is designed so as to adopt locally popular construction methods as much as possible.

4) Building Materials

In the West Bank, major building structures, such as columns and beams, are made of reinforced concrete. The walls are made of concrete blocks and finished with local limestone.

Many necessary building materials, such as ready-mixed concrete and concrete blocks as well as steel and wooden fittings and furniture, terrazzo tiles, etc., are

produced in the West Bank. Reinforcing bars and cement are produced in Israel and some neighboring countries. All products and raw materials necessary for ordinary building construction can be procured in the West Bank. As the Project is to construct school buildings, the design of Project facilities shall be prepared based on the premise of using 100% locally procurable materials.

5) Labor

As it is easier in the West Bank than the Gaza Strip for workers to find better paid jobs in Israel, it sometimes becomes difficult to hire construction workers in the West Bank during the peace. Basically, there is a shortage of skilled workers and the average wages in the West Bank are 40 % higher than in the Gaza Strip.

(4) Policies for Project Implementing Agency's Operation and Maintenance Capabilities

Project schools will have the same functions as existing schools and operated by shifting part or all of the pupils and teachers from existing schools. Thus, there will be no specific difficulties in securing school personnel. As for costs there will be no large increase in financial burden of the Implementing Organization by the Project. However, hiring of new teachers and school staff may be necessary for the increased number of classrooms and new schools to be built under the Project, and, as a result, a slight increase in personnel costs and utility costs may be unavoidable.

By taking into account the limited amount of budgetary funds of MOE, design of Project facilities shall be prepared so that the operation and maintenance costs of the facilities will be minimal.

(5) Policies for Setting the Scope of Facilities and Equipment and Their Grades

Based on the Grant Aid Scheme of the Government of Japan, the facility design and equipment plan for the requested school facilities for the Project will be prepared in accordance with the above-mentioned policies for various conditions and the basic concept described in the previous section. As for grades, Project school facilities are to be designed under the similar specifications which were used to build school facilities in the West Bank financed by donors such as EU, Norway and Germany. The science laboratory equipment shall be those which are usually available in the local market and school furniture shall be locally produced.

(6) Policy for Construction Period and Phasing

The average net construction period of a 16 to 20-classroom school is eleven months in the West Bank. It is approximately one month longer than the construction period in the Gaza Strip. The reasons are thought to be that there are many cases requiring land preparation work prior to or simultaneously with the construction of school buildings and that it takes extra time for stone finishing work popular in the West Bank.

When a Japanese contractor undertakes school construction, one month for preparation prior to commencing construction work, another month for installation, science laboratory equipment and school furniture and the inspection of completed facilities prior to the delivery will be respectively necessary. Thus, it is assumed that it will take thirteen months from the signing of contract to the delivery of the Work under the Project.

It might be possible to implement the construction work in all of the Project sites during a single fiscal year. However, by taking into consideration the special conditions of the region from an international viewpoint, it may be necessary to have a sufficient time to complete the entire Project construction. In addition, by taking into account the possibilities of construction suspensions that may be caused by unforeseen incidents with regard to the relationship with Israel, it would be appropriate to carry out Project construction in a few phases. It is concluded that the Project should be implemented in three phase of 1999, 2000 and 2001 fiscals for the following reasons:

- 1) It is necessary to conduct the construction works simultaneously at all the Project sites in order to complete the one phase Project within one fiscal year. If the number of sites of one phase is large, it is required for the Japanese contractor to assign as many Japanese engineers as required simultaneously. Since there is a few Japanese contractors having sufficient engineers available at one time, it will be difficult to execute a proper competitive tender for the Project.
In order that a small scale but competent enterprise can also participate in the tender, the opportunity of participation should be widened by limiting the number of sites in one Phase.
- 2) Further, there is a limit for the number of sites that a Japanese site manager can control simultaneously. It is considered to be appropriate for one manager to control approximately ten construction sites, i.e., approximately 150 classrooms

at one time as was done in the previous phase I project.

Upon dividing project sites in to phases, there are two major ways; one is to select priority areas and implement the Project region by region, and the other is to select priority schools from all regions for each phase. As the former method is evidently more cost saving, the Project will , thus, be implemented by this phasing. As the problems in school facilities in the south is more severe, Phase I shall start from the south then proceed to the north. As classroom shortage problem is an urgent issue the number of schools to be constructed in front phases shall be as many as possible. Thus, the following phasing is proposed.

Table 2-7 Phasing of the Project

Project Site	Directorate of Education	School Type and Size				
		Level	Type	Grade	No. of Cls	
Phase 1	19B Al-Mahd	Bethlehem	Combined Basic	Boys	1- 9	19
	20B Sa'ir	Hebron	Low Basic	Girls	1- 6	17
	21B Al-Moqata'eh	Hebron	Low Basic	Girls	1- 6	13
	22B Tarqomia	Hebron	Combined Basic	Girls	1- 8	20
	23 Kharas	Hebron	Low Basic	Co-ed	1- 4	11
	24 Habaiel Al-Rey	Hebron	Low Basic	Boys	1- 6	15
	25B ahAbu-Romman	Hebron	High Basic	Boys	1- 10	17
	26B Mo'tah	South Hebron	Combined Basic	Girls	1- 8	20
	27 Raqa'a Al-Jadidah	South	Low Basic	Girls	1- 6	11
	28B Al-Thaheri	HebronSouth	Low Basic	Boys	1- 6	11
29 Ithna	South Hebron	Combined Basic	Girls	1- 9	15	
Phase 2	7B Al-Hairy Al-Janooby	Qalqilia	Lower Basic	Girls	1- 4	19
	8 Al-Hadiqa	Qalqilia	Low Basic	Boys	1- 6	24
	9 Dairista	Salfeet	Combined Basic	Girls	1- 10	10
	11 Aqraba	Nablus	High Basic	Boys	7- 10	7
	14 Betonia	Ramallah	Low Basic	Boys	1- 6	15
	16 Beit Luqia	Ramallah	Lower Basic	Boys	1- 4	13
	17B Anata	Al Ram	Low Basic	Girls	1- 6	10
	18 Al-Nwa'meh	Jericho	Combined Basic	Co-ed	1- 9	13
Phase 3	1 Tubas	Jenin	Low Basic	Boys	1- 6	24
	2B Seerees	Jenin	Low Basic	Boys	1- 6	9
	3 Jenin	Jenin	Low Basic	Girls	1- 6	23
	6 Baqa Al-Sharqia	Jenin	Lower Basic	Girls	1- 4	8
	10 Al-Ma'ajeen	Nablus	Combined Basic	Boys	1- 9	22
	12B Rafeedia	Nablus	Combined Basic	Girls	1- 9	22

2-3-2 Basic Plan

(1) Site Development Plan

School sites are required to be basically flat, allowing for school characteristics. If an existing school site is located on a slope, levelling work by either landfill or cut work is required. In the Project schools, 17 school sites require land development work. These sites shall be developed prior to commencing school building construction as follows:

Table 2-8 Site Preparation Works

Project Site	Site Area (m ²)	Actual level (m)	Designe (m)	Content of Works
1 Tubas	4,858.86	364 ~ 353	349.2	Cut & fill, Retaining Wall
2B Seerees	5,205.74	391 ~ 399	394.3	Cut & fill, Retaining Wall
6 Baqa Al-Sharqia	4,431.87	103 ~ 109	106.1	Cut & fill, Retaining Wall
9 Dairista	4,390.07	411 ~ 421	414.9	Cut & fill, Retaining Wall
10 Al-Ma'ajeen	3,357.79	506 ~ 515	510.2	Cut & fill, Retaining Wall
16 Beit Luqia	3,805.78	329 ~ 338	335.6	Cut & fill, Retaining Wall
18 Al-Nwai'meh	4,013.52	-161 ~ -153	-157.2	Cut & fill, Retaining Wall
19B Al-Mahd	4,259.28	746 ~ 756	750.5	Cut & fill, Retaining Wall
20B Sa'ir	5,438.24	950 ~ 956	953.0	Cut & fill
21B Al-Moqata'eh	2,991.98	939 ~ 950	945.6	Cut & fill, Retaining Wall
23 Kharas	3,003.88	516 ~ 532	517.1	Cut & fill
24 Habaiel Al-Reyah	4,360.02	979 ~ 987	983.2	Cut & fill, Retaining Wall
25B Abu-Romman	3,078.17	949 ~ 957	951.7 / 955.2	Cut & fill, Retaining Wall
26B Mo'tah	4,857.19	979 ~ 987	700.8	Cut & fill, Retaining Wall
27 Raqa'a Al-Jadidah	4,397.28	820 ~ 829	824.0	Cut & fill, Retaining Wall
28B Al-Thaheria	4,805.42	618 ~ 630	624.3	Cut & fill
29 Ithna	3,636.57	442 ~ 437	438.3	Cut & fill

(2) Facility Layout Plan

1) Basic Policy for Facility Layout Plan

Each of the 25 Project schools is different in shape, orientation, access road condition, infrastructure condition, and site conditions. Thus, the facility layout plan of each school shall be prepared by taking into account these conditions. However, for the facility layout plan, the following points shall be the common principles:

- a) When levelling work is necessary, a school building shall be built on the cut area;
- b) As land area is limited, priority shall be given to making school grounds as large as possible within the limits of urban planning constraints in concerned Project areas and natural lighting conditions;
- c) To prevent direct sunlight from entering ordinary classrooms, classrooms shall be arranged so that classroom windows face the north or the south wherever possible;
- d) To prevent odor from pupil toilets entering the school building, the toilets shall be arranged to the east of the building where possible, by taking into account the prevailing wind direction in the area, thus preferably outside of the stairway located at the end of the building for exhausting by natural ventilation.
- e) School entrances shall be provided based on the following standards:
 - ① Entrance widths shall be decided upon in order to allow vehicles to enter the school ground.
 - ② If a site contacts two or more roads, the school entrance shall face the least traffic road.
 - ③ If the site faces only a heavy traffic road having a walkway, two entrances shall be provided: one for the pupil entrance and the other only for vehicles. In the future, guardrails shall be installed along the walkway in front of the pupil entrance by the road management authority.
- f) For the purpose of effective use of limited land space, school facilities should be arranged so that the school building and yard area will function as a single unit and the court yard surrounded by buildings may be used for various purposes. For this reason, no special entrance hall is planned in the school building so that approaching any room may be possible from the corridor and also, so pupils will be able to move freely in the yard. In order to approach rooms from the back of the building, a semi-outdoor

area opened to air, called a pilotis shall be provided to function as a passageway as well as a building entrance.

- g) Local building standards require a school building to have a parking lot for every 100m² of building area. However, this requirement is in fact eased by the building officials of local authorities. During the field survey, the study teams explained to the Palestinian side that it would not be possible to provide some Project schools with parking lots based on the requirement of one parking lot per every 100m² of building area because of their site conditions. It was thus instructed not to necessarily have one parking lot for every 100m² of building area. Thus, an attempt shall be made to provide as many parking lots as possible by taking into account site conditions.
- h) Effort shall be made to secure sufficient school ground space in order to build a basketball court and a morning gathering ground.

2) Summary of Each Project School's Facility Layout plan

In accordance with the basic policies, the facility layout plan of Project schools was prepared. The facility layout plan for each school is outlined as follow:

a) No. 1 Tubas (Low basic school for boys, 24 classrooms)

- ① The site faces two roads: an existing road to the south and a planned road to the east. The school entrance shall be made facing the existing road to the south.
- ② Although the site has an uneven shape, it is possible to secure sufficient space for a rectangular building area. By taking into account the approximately 1,000m² building area school building to be built, the building shall be U-shaped.

b) No. 2B Seerees (Low basic school for boys, 9 classrooms)

- ① Only one road contacts the school site. The school entrance shall be provided to the east of the site to connect with the existing road.
- ② The site shape is uneven. As the school building will have a building area of approximately 540m² it shall be I-shaped.

c) No. 3 Jenin (Low basic school for girls, 24 classrooms)

- ① The site contacts only one road to the west. The school entrance shall be made facing this road.
- ② The site has a trapezoidal shape. By taking into account the approximately 1,000m² building area school building to be built on the site, its plan shall be U-shaped.

- d) No. 6 Baqa Sharqia (Lower basic school for girls, 8 classrooms)**
- ① The school entrance shall be provided on the west side of the school site to which only one access road connects.
 - ② By taking into account the parallelogram shaped site and the approximately 460m² building area of the school building to be built, the school building shall be I-shaped.
- e) No. 7B Al-Hay Al-Janooby (Lower basic school for girls, 19 classrooms)**
- ① The school entrance shall be made on the south side of the site to face the existing main road.
 - ② The site is almost rectangular. As the building area of the school building to be built is approximately 720m², the building shall be L-shaped.
- f) No. 8 Al-Hadiqa (Low basic school for boys, 24 classrooms)**
- ① The site contacts only one road to the southeast. The school entrance shall be made facing this road.
 - ② The site is a trapezoidal shape. As the building area of the school building to be built is approximately 1,000m², the building shall be U-shaped.
- g) No. 9 Dairista (Combined basic school for girls, 10 classrooms)**
- ① As an approximately 70m long dedicated access road to the site will be constructed, the school entrance shall be built to the access road and not to the exiting road.
 - ② Although the site has an uneven shape, it is possible to secure a rectangular flat area. By considering the building area of the building to be built as being approximately 650m², the building shall be L-shaped.
- h) No. 10 Al-Ma'ajeen (Combined basic school for boys, 22 classrooms)**
- ① The school entrance shall be made on the south side of the site so that access from the existing road to the site can be directly made on the same level as the land to be reclaimed.
 - ② As the site has a triangular shape, the building to be built shall be L-shaped by taking into account its approximately 720m² building area.
- i) No. 11 Aqraba (High basic school for boys, 7 classrooms)**
- ① As the existing school building will be expanded under the Project and the site is connected to the 16m wide existing road to the east, the existing school entrance will be utilized as is.
 - ② The new school building shall be arranged parallel to the existing building. As the building area of the new building will be approximately 510m², the building shall be I-shaped.

- j) No. 12B Rafeedia (Combined basic school for girls, 22 classrooms)**
- ① The site connects with two roads: one to the southeast and the other to the south. As the south road is sharply curved, the school entrance shall be made facing the southeast road.
 - ② As the site has an uneven shape and is steeply sloped, school buildings to be built shall be I-shaped parallel buildings to fit their approximately 850m² building area on the site.
- k) No. 14 Betonia (Low basic school for boys, 15 classrooms)**
- ① The school site contacts two roads: one to the north and the other to the west. As the north road is sloped toward the west and the west road is lower, to allow easy access to the land to be reclaimed, the school entrance shall be made facing the north road.
 - ② The site is nearly square. As the building to be built will have an approximately 710m² building area, it shall be U-shaped.
- l) No. 16 Beit Luqia (Lower basic school for boys, 13 classrooms)**
- ① As there is a large elevation difference between the site and the south road, the school entrance shall be made facing the west main road.
 - ② The shape of the site is uneven. By taking into account the shape of the reclaimed land and an approximately 540m² building area of the new building to be built, the building shall be L-shaped.
- m) No. 17B Anata (Low basic school for girls, 10 classrooms)**
- ① The school entrance shall be made facing the main road in the north which is the only road that connects to the site.
 - ② The site is almost rectangular. As high voltage power lines run across the middle of the site, the school building shall be arranged on only half of the site. Square shaped flat land can be secured on half of the site. By taking into account the building area of the building to be approximately 550m², the building shall be L-shaped.
- n) No. 18 Al-Nwai'meh (Combined basic school, co-ed, 13 classrooms)**
- ① Only one road connects the site to the south. The school entrance shall be made facing this existing road.
 - ② The site has an uneven shape. By taking into account the approximately 720m² building area of the school building to be built, the building shall be L-shaped.

- o) No. 19B Al-Mahd (Combined basic school for boys, 19 classrooms)**
- ① The school entrance shall be made facing the only existing road east of the site.
 - ② As the site is approximately square, an L-shaped building shall be appropriate as the school building, which will have an approximately 850m² building area.
- p) No. 20B Sa'ir (Low basic school for girls, 17 classrooms)**
- ① Only one main road connects to the north of the site. The school entrance shall be made facing this road.
 - ② The site has a long and narrow rectangular shape. The building to be built shall be L-shaped to accommodate an approximately 740m² building area.
- q) No. 21B Al-Moqata'ah (Low basic school for girls, 13 classrooms)**
- ① The site connects with roads to the west and the northwest. As the site will be reclaimed to an elevation lower than both roads, the school entrance shall be made to the west of the site which will have less elevation difference than the other existing road.
 - ② The shape of the site is uneven. By taking into consideration an approximately 650m² building area of the building to be built, it shall be L-shaped.
- r) No. 22B Tarqomia (Combined basic school for girls, 20 classrooms)**
- ① The site connects with two roads: to the northeast a 20m planned wide road and to the northwest an 8m wide road. Thus, school entrance shall be made facing the northwest road which has less traffic.
 - ② The site is trapezoidal. Judging the floor space of the new building to be built as being 870m², the building shall be L-shaped.
- s) No. 23 Kharas (Lower basic school co-ed, 11 classrooms)**
- ① The school entrance shall be provided on the south west boundary line facing to the only existing road.
 - ② The site is mostly square having approximately 3,000m². By taking into account an approximately 540m² building area of the building, the recommended building plan shall be U-shaped.
- t) No. 24 Hapaiel Al-Reyah (Low basic school for boys, 15 classrooms)**
- ① The site is connected to an existing school that has an entrance. This entrance will be used for the Project school.
 - ② The site is narrow and long. By taking into account an approximately 770m² building area of the new building to be built, it shall be an L shaped, almost I shaped, building.

- u) **No. 25B Abu-Rumman (Combined basic school for boys, 17 classrooms)**
 - ① The site is located at the dead-end of a road. The school entrance shall be made only facing this road.
 - ② The site is triangular and is small in view of the size of the Project school to be built. It will be appropriate to build parallel I-shaped buildings.
- v) **No. 26B Mo'tah (Combined basic school for girls, 20 classrooms)**
 - ① The school entrance shall be made facing the existing south side road to suit the reclamation elevation of the site.
 - ② The site is rectangular. Parallel I-shaped school buildings shall be arranged, thus taking into consideration an approximately 870m² building area of the buildings.
- w) **No. 27 Raqa'a Al-Jadidah (Low basic school for girls, 11 classrooms)**
 - ① An approximately 150m long dedicated approach road will be constructed to connect the site to an existing road. The school entrance shall be made facing this approach road.
 - ② The shape of the site is uneven. In view of an approximately 540m² building area of the new building to be built, an I-shape will be appropriate for the building.
- x) **No. 28B Al-Thaheria (Low basic school for boys, 11 classrooms)**
 - ① To allow direct access to the reclaimed land elevation, the school entrance shall be made facing the existing road to the south side.
 - ② After land reclamation, the cut area of the site will be a rectangular shape. By taking into consideration an approximately 540m² building area of the new building to be built, the building shall be I-shaped.
- y) **No. 29 Ithna (Combined basic school for girls, 15 classrooms)**
 - ① As the existing road to the north is steep, the school entrance shall be built facing the existing road to the southwest of the site.
 - ② The shape of the site is uneven and it will be appropriate to secure a school ground to the south, the front road side. Thus, the new building, having an approximately 720m² building area, shall be I-shaped.

(3) Architectural Plan

1) Floor Plan

a) Set-up of Standard Plan

As the Project is to build twenty-five schools of different sizes under different site conditions, their floor plans shall be prepared to suit the

different site conditions and various other factors. However, the Project schools are public schools and their curriculum and management method are the same. Thus, rooms are required to have common functions, sizes, and shapes wherever possible.

For the preparation of the floor plans of the Project schools, a standard design for each room type shall be first prepared. Then, the rooms of standard designs shall be arranged for the floor plan of each school taking into consideration the site conditions of each school.

b) Design of Rooms

Standard design of rooms shall be made based on the following policies:

- ① The function, size, and shape of each room shall follow the facility standards of MOE as closely as possible;
- ② The basic module of the floor plan shall be 2.75m × 6.60m.

c) Floor Plan of School Building

The following principles shall be followed during preparation of the building floor plan:

- ① The basic floor plan of the school building shall incorporate a single band corridor type. The corridor width shall be 2.40m.
- ② To effectively use land, a school building shall be basically three stories which allow easy movement to upper or lower floors. However, if necessary, it may be four stories to suit the size and conditions of the site.
- ③ Two stairways shall be provided. If a school has more than 22 classrooms, three stairways shall be provided. The width of the stairways shall be 3.60m.
- ④ The administration comprising a headmaster's room and teachers' room, the first aid room, more than one classroom, and major special rooms shall be arranged on the major access floor (normally on the ground floor).
- ⑤ Ordinary classrooms shall be grouped as much as possible.
- ⑥ To avoid odors from entering into school buildings, toilets for pupils shall be arranged to the leeward.
- ⑦ A pupil's toilet unit shall have six booths. However, the unit number shall be changed according to the school size.
- ⑧ As canteen sales aid school income to be used for school operation and maintenance, space for a canteen shall be secured in some part of the school.

d) Each School's Planned Facility Size

As a result of the basic plan which was prepared in accordance with the above-mentioned methods, facility size of each school site shall be as shown in the following table:

Table 2-9 Facility Size of Each School Site (Area)

Phase	No.	Project Site	School Type and Size			Site Area (m ²)	Floor Area (m ²)
			Type	Grade	No. of Cls		
Phase 1	19B	Al-Mahd	Boys	1- 9	19	4,259.28	2,556.90
	20B	Sa'ir	Girls	1- 6	17	5,483.24	2,212.47
	21B	Al-Moqata'eh	Girls	1- 6	13	2,991.98	1,849.26
	22B	Tarqomia	Girls	1- 8	20	3,426.67	2,645.46
	23	Kharas	Co-ed	1- 4	11	3,003.88	1,512.36
	24	Haba'iel Al-Reyah	Boys	1- 6	15	4,360.02	2,063.97
	25B	Abu-Romman	Boys	1- 0	17	3,078.17	2,460.42
	26B	Mo'tah	Girls	1- 8	20	4,857.19	2,699.91
	27	Raqa'a Al-Jadidah	Girls	1- 6	11	4,397.28	1,618.47
	28B	Al-Thaheria	Boys	1- 6	11	4,805.42	1,618.47
	29	Ithna	Girls	1- 9	15	3,636.57	2,185.65
		Sub-total			169		23,423.34
Phase 2	7B	Al-Hairy Al-Janooby	Girls	1- 4	19	3,735.45	2,185.65
	8	Al-Hadiqa	Boys	1- 6	24	3,565.20	3,013.03
	9	Dairista	Girls	1- 10	10	4,390.07	1,831.11
	11	Aqraba	Boys	7- 10	7	10,063.19	1,479.42
	14	Betonia	Boys	1- 6	15	3,200.99	2,151.55
	16	Beit Luqia	Boys	1- 4	13	3,805.78	1,658.61
	17B	Anata	Girls	1- 6	10	5,617.23	1,575.96
	18	Al-Nwai'meh	Co-ed	1- 9	13	4,013.52	2,079.00
		Sub-total			111		15,974.33
Phase 3	1	Tubas	Boys	1- 6	24	4,858.86	3,013.03
	2B	Seerees	Boys	1- 6	9	5,205.74	1,429.17
	3	Jenin	Girls	1- 6	23	3,590.07	3,013.03
	6	Baqa Al-Sharqia	Girls	1- 4	8	4,431.87	1,199.13
	10	Al-Ma'ajeen	Boys	1- 9	22	3,357.79	2,919.85
	12B	Rafeedia	Girls	1- 9	22	6,676.94	3,002.67
		Sub-total			108		14,576.88
		Total			388		53,974.55

2) Section Plan

For a building that is not provided with an air conditioning system, climatic conditions become a large factor in deciding its cross section. In a heavy rain area, a flat-type roof should not be used. In a humid climate area, natural ventilation shall be first considered for deciding a building shape. In a region having drastic climatic changes from area to area, the shape of buildings may also be changed accordingly.

As described in the previous section, the West Bank has climatic changes to some extent from area to area. In a high elevation area like Hebron, the minimum temperature is sometimes below 0 °C in the winter and it sometimes snows. Thus, it is said that a heating system is generally necessary for buildings. However, a heating system is not normally provided to school buildings. On the contrary, temperatures in the summer are not so high and the air is dry. It is very comfortable without an air conditioning system.

Tulkarem, a northern area in the West Bank, is located at a low altitude. The minimum temperature in the winter is approximately 10 °C thus a heating system is not needed. But in the summer, the temperature and humidity are higher than in a mountainous area and it is uncomfortable compared to the mountainous area. It is generally bearable without an air conditioning system. However in Jericho, which is located in the Jordan Valley, the winter is mild but the summer is extremely hot.

Although the West Bank is climatically varied from area to area, the area difference is not so great as to require the changes of building features from area to area. Generally speaking, the Region is mild, has many clear days, and a dry climate. By taking into account the above conditions, the cross section factors of Project buildings shall be decided upon as follows:

a) Roof Type

Annual rainfall in the West Bank is 500mm to 900mm. The rainy season is limited to a period of 4 winter months and an economical flat-roof type is suitable. Generally, the majority of buildings are flat-roof types. Thus, an economical flat-roof type shall be adopted for the Project and the cross sectional shape of Project buildings should be a simple box type.

b) Floor Height

In accordance with the standard design of MOE, the floor height of Project school buildings shall be 3.5m and a comfortable interior environment shall be created by securing a sufficient ceiling height.

Heavy rains occasionally occur during winters and often create flooding in poor drainage areas. To prevent floodwater from coming into a school building, the ground floor shall be 60cm higher than the ground elevation.

c) Cross Sectional Structure of Slabs

For roofs and floors, joist slabs that are made by sandwiching concrete blocks are commonly used. Slab thickness is approximately 30cm including finishing portions and is effective for securing insulation capability as well as preventing noise from upstairs. Joist slabs will also be adopted for the Project.

d) Eaves

Classroom windows provided on the opposite side of the corridor will be the main openings, making maximum use of natural lighting. To prevent the entry of direct sunlight, eaves shall be provided above the windows.

3) Structure Plan

a) Subsoil Condition

① Geology

The geology in the West Bank generally consists of rock. On such a site the earth work is difficult. However, as the subsoil is strong, which reduce to size of foundation. In areas not composed of rock the subsoil is mainly gravel sand and the ground is normally strong.

② Bearing Capacity of Soil

It is said that rocky ground normally has 50tons/m² to 100tons/m² of bearing capacity. Yet, it is generally assumed that the bearing capacity of soil in the West Bank is approximately 35tons/m². The subsoil at a depth of a building foundation is weathered and, as a result, a relatively smaller bearing capacity is adopted for the safety of the foundation.

True bearing capacity of the ground can only be determined by conducting boring tests, but it is expected that the areas with gravel sand may have a bearing capacity of 20 to 25tons/m².

According to the column arrangement of Project school buildings, strip foundations shall be adopted. The minimum width of strip foundation is usually limited to be 1m or more.

In case of the Project school buildings, the maximum weight of building loaded at a column is calculated approximately 20 ton/m². Therefore, even if more bearing capacity of soil is expected, the width of foundation shall be the same (1m). For the basic design, the following three types of subsoil conditions are assumed:

- Rock or gravel sand (20 ton/m²) Other than listed below
- Sand or sandy clay (15 ton/m²) No. 6, No. 7B, No. 8, No. 21B
No. 22B, No. 26B,
- Clay (10 ton/m²) No. 2, No. 3, No. 11

b) Structure Type of School Buildings

① Foundation

The prevailing subsoil in the West Bank is either rock or gravel sand and is stable. As the building foundation bed can be set at a relatively shallow depth, the foundation shall be the strip foundation spread directly on the bearing subsoil.

As the foundation must be built on the natural ground, the footing bottom shall be set at a 2m to 1m depth from the ground surface.

When natural ground in a landfill area is deep, a foundation type having separated foundation beams and a strip foundation footing shall be used.

② Major Frame

Project school buildings shall be reinforced concrete frame structures having columns and beams arranged at 2.75m x 9.00m grid.

c) Standards for Structure Design

No building standards are set in the Gaza Strip and the West Bank. European or American technical standards are normally adopted. Structure design for the Project shall be prepared by referencing the structural design of existing similar buildings and based on the following Japanese standards:

- ① Building standards, law and its Ministerial Resolution, and the Notification of the Ministry of Construction;
- ② Structure design guideline; the Japan Architectural Association (JAA)
- ③ Reinforced concrete structure design standards; the JAA
- ④ Building foundation structure design standards; the JAA.

d) Material and Its Strength

Concrete material for reinforced concrete structures shall be ready mixed concrete and comply with the Japan Industrial Standard (JIS) FC 250 or equivalent. Reinforcing bars of JIS SD 295A (D10-D13) and SD 345 (D16-D25) equivalent shall be used.

Commonly used 35kg/cm² concrete blocks shall be used.

e) Live Loads and External Forces

① **Dead Load:** Roof: 480kg/m^2

Floor: 620kg/m^2

Wall: 540kg/m^2 ($t = 200$)

430kg/m^2 ($t = 150$)

② **Live Load:** Roof: 90kg/m^2 (for calculating floors and small beams)

65kg/m^2 (for calculating large beams, columns and foundations)

30kg/m^2 (for calculating seismic forces)

Floor: Classroom

300kg/m^2 (for calculating floors and small beams)

210kg/m^2 (for calculating large beams, columns and foundations)

110kg/m^2 (for calculating seismic forces)

Floor: Corridor

400kg/m^2 (for calculating floors and small beams)

300kg/m^2 (for calculating large beams, columns and foundations)

210kg/m^2 (for calculating seismic forces)

③ **Wind Load:** $W = C \times q \times A$ (kg/m^2)

where, C = wind speed coefficient

$q = H \times \sqrt{\quad}$ 30kg/m^2 speed pressure, which is given by assuming the max speed to be 30/sec

A = area in m^2

④ **Seismic Forces:** Horizontal seismic forces shall be calculated by equation

$Q = C_i \times W$ (kg/m^2),

It is judged from past records that seismic force is VII by modified Mercalli Scale and M = 6 by Richter Scale and ground acceleration to be 0.15G. Thus, $C_i = 0.15$ will be applied in the area of Jericho nearest to the centrum.

$C_i = 0.15 \rightarrow$ No.18

$C_i = 0.10 \rightarrow$ No.1, No.2B, No.3, No.10, No.11, No.12, No.17B, No.20

$C_i = 0.05 \rightarrow$ Other 17 sites

(4) Building Utility Plan

1) Electrical Facility

The entire West Bank is fundamentally a power supplied area. All electricity is imported from Israel. Importation of high voltage electricity and its distribution are under the control of the Palestinian Energy Authority (PEA).

Supply of low voltage electricity is managed by each municipality. In the Jerusalem Area, the Jerusalem Electricity Company handles the low voltage electricity supply.

As a supply of electricity is available in the entire Project Area, electrical facilities shall be designed for Project schools based on the following common policies:

a) Supply Method

3 phase-4 wire low voltage lines shall be connected from 380/220V city supply lines to each Project school site at the electric poles installed nearby the road. Then the lines pass underground to the main distribution board in the building. Power shall be supplied from the main distribution board to the power boards and the distribution boards.

b) Power Supply

To pump water up to the elevated water tank, 380 volt 3-phase power shall be supplied to the pump control board.

c) Lighting and Receptacles

It is not considered that Project schools will be used at night time, but a supplemental lighting system having fluorescent tubes shall be provided. Design illuminance shall be 300 luxes for teachers' rooms and ordinary classrooms. Two double fluorescent tube lighting fixtures (40watts \times 2) shall be installed at every 2.75m span.

As for receptacle outlets, two units shall be installed in each classroom. The number of outlets in the teachers' room, library, science laboratory, and multipurpose room shall be decided upon in accordance with the furniture arrangement condition.

d) Telephone

For Project sites where telephone lines are available, telephone lines shall be connected from city telephone lines to the terminal board installed in the teachers' room. Initially, only one line shall be installed. Additional lines shall be installed in the future. Telephone units shall be the mutual transfer type. One telephone unit shall be installed in the headmaster's room, secretary room, teachers' room, and first aid room respectively.

e) Announcing Facility

Two outdoor speakers shall be installed on school building walls for morning assemblies, ceremonies, and meetings. The amplifier shall be installed in the teachers' room. The announcing and several smaller speaker at corridors for general information announcing facility shall have a timer and chimes to automatically announce the beginning and end of classes.

2) Water Supply Facility

The West Bank is basically a public water supply zone. The maximum distance to connect pipes from city water supply lines to Project schools is approximately 200m with some exceptions. Sources of city supply water are deep wells constructed at appropriate locations. Most of the wells are under the management of Israel's water supply authority. Each municipality in the West Bank receives its water supply from Israel and manages the distribution to ordinary users. Water supply to Project school No. 2 Seerees shall be conducted by a water supply vehicle. Water supply to Project school No. 11 Aqraba shall be made from an existing well on the site. As all other Project schools can obtain water from city supply lines, they shall be provided with water supply facilities to be designed based on the following policies:

a) Water Supply Method

Water shall be received in receiving tanks, pumped up to elevated tanks, and then distributed to each necessary point by gravity flow.

b) Water Receiving Tank

The tank shall be ready made polyethylene tanks installed on the ground. By taking into account the possible suspension of the city water supply during the summer, the capacity of a water receiving tank shall be decided upon based on a daily water use of 50 liters per person.

c) Elevated Water Tank

A combined unit of several ready made polyethylene resin tanks shall be installed on the roof of school building. The number of necessary tanks shall be calculated based on the daily water consumption of each school.

However, as water use will be concentrated during the class recess periods, the capacity of the water tank shall be one quarter of the daily use amount.

d) Pipe Material

Locally available polyvinyl chloride pipes shall be used.

3) Drainage Facility

a) Drainage System

Sewage and waste water pipes shall be separately installed. The sewage and waste water shall be combined in the final pit then discharged into either a percolation pit to be installed in a site or an existing city sewer line.

As rainwater drainage is good in the Project areas, it shall be directly infiltrated into the ground.

b) Sewage Treatment System

In Project areas that are located in a city sewer provided zone, sewerage shall be directly discharged into the city sewer lines from the final pits. In Project areas that are located in a no city sewer provided zone, sewerage shall be treated in a septic tank to be installed on the sites, then the treated sewerage shall be infiltrated into the ground. However, in case the city sewer system does not have a treatment plant, sewerage shall be treated on the Project site by the septic tank then discharged into the city sewer line in view of environmental considerations. Sludge accumulated in septic tanks shall be periodically transported to a sewerage treatment plant for treatment.

c) Septic Tank

The septic tank shall be an underground-type reinforced concrete tank. Its structure type and capacity shall follow similar schools standards.

d) Percolation Pit

In accordance with similar schools standards, the percolation pit shall be made of reinforced concrete and concrete blocks.

e) Toilet Bowls

Toilet bowls for pupils shall be the Asian type both for boys and girls that are generally used in the West Bank. In a teachers' toilet, one Asian type toilet bowl and one western style toilet bowl shall be installed.

f) Pipe Material

Polyvinyl chloride pipe that is commonly used in the Region shall be used.

4) Other Facilities

a) A piped gas system shall be installed to the multipurpose room and science laboratories.

b) Fire extinguishing units shall be installed at appropriate locations in the school buildings.

(5) Building Material Plan

Finishing materials and construction methods to be adapted for the Project and the reasons for the adaptation are listed as follows:

Table 2-10 Adopted Building Finish Schedules

Building Element	Local Popular Finish	Adopted Finish	Reason for Adopting
Roof	Asphalt water proofing painted	Ditto	Water proofing & heat insulation
Exterior Wall	Lime stone finish	Partial Stone finish	Harmonized with the environment & cost education
Door Exterior	Steel frame door painted	Ditto	Solidity
Door Interior	Wooden flush door painted	Ditto	Low cost & easy maintenance
Window Frame	Aluminum window frame	Ditto	Durability
Ceiling	Plaster with trowel finish painted	Ditto	Low cost & easy maintenance
Interior Wall	Mortar with trowel finish painted	Ditto	Low cost & easy maintenance
Floor	Terrazzo tile	Ditto	Low cost & easy maintenance and aesthetic view

Table 2-11 Adopted Building Construction Methods

Building Element	Local Popular Method	Adopted Method	Reason for Adopting
Structural Frame	Reinforced concrete (RC)	Ditto	Solidity & Durability
	Ready mixed concrete	Ditto	Common Method
Ext. / Int. Wall	Concrete blocks without reinforcement	Reinforced C.B.	More Durability and less cracks
Slab	R.C. Joist slab cast with C.B.	Ditto	Common Method, heat & sound insulation

(6) Equipment Plan

1) Science Laboratory Equipment

Science laboratory equipment to be provided for low basic schools and high basic schools under the Project shall be as shown in Table 2-12 and Table 2-13.

Table 2-12 Science Laboratory Equipment for a Low Basic School

No.	Item	Specification	Number		Use
			Basis	No.	
1	Magnifier	Reading glass, 3x 2" dia.	1 pc / pupil	45	Observation of living organisms
2	Forceps	Nickel, straight 4 1/2"	1 pc / pupil	45	Ditto
3	Microscope	For pupil, 4x 10x 40x objectives	1 pc / class	1	Observation of microorganisms
4	Slide sets	Slides of animals, vegetables, minerals, insects, and common organisms in yard, pond and sea	1 set/ class	1	Ditto
5	Thermometer	Glass clinic fever thermometer, dual scale (F and C)	1 pc / group	10	Measurement of temperature
6	Plate glass mirror	4"x6"	1 pc / group	10	Study of mirror reflections
7	Syringe	Plastic syringe 60ml	1 pc / group	9	Study of air pressure
8	School balance	Color coded plastic pan w/ easy pour corners, capacity : 2,000g (0.5g), with metric weight set 50gx1g	2 set/ class	2	Study of weight and balance
9	Spring scale	Polystyrene housing, with ring at top and hook at bottom, 2000g x 25g	1 pc / teacher	1	Ditto
10	Table scale	2kg	2 set/ class	2	Ditto
11	Mass set	Set of nine(9) hooked masses constructed of brass, 10g-1000g	1 pc / teacher	1	Ditto
12	Demonstration balance set	50cm wood stick w/ zero center, three knife-edge lever clamps, 50g and 100g masses, support base	1 pc / teacher	1	A principal of level
13	Electricity kit	simple electric circuit experiment set, peg board, bulb sockets w/ bulb, batteries, jiffy clip leads switch, etc.	1 pc / teacher	1	Study of electricity
14	Horseshoe magnet	Alnico, 2x 1 1/8" supplied with keeper	1 pc / group	9	Study of magnetic power
15	Bar magnet	Polished steel 6x3/4x1/4"	1 pc / group	9	Ditto
16	Compass	12sets, 42mm dia.	1 pc / group	9	Measurement of direction

Table 2-12 Cont'd

No.	Item	Specification	Number		Use
			Basis	No.	
17	Thermometer	Etched stem 7-8mm, Mercury-filled, Celsius and Fahrenheit, -20C~110C	1 pc / group	9	Measurement of water temp.
18	Thermometer	Wall type, recessed tube, 1 3/4x 7 3/8" high	2 pc / class	2	Measurement of temp.
19	Max/Min thermometer	Push bar reset, F and C scales	2 pc / class	2	Ditto
20	Alcohol lamp	Ground glass cap, wick, wick holder and	2 pc / teacher	2	Heating Study Purpose
21	Tripod	Iron, h=6", ring ID=1 3/4", OD=3 1/2"	1 pc / teacher	1	Supporting goods
22	Wire gauze	Ceramic fiber center, 4x4"	1 pc / teacher	2	Ditto
23	Beaker	With graduation, 250ml, 400ml	1 set/ group	10	Various experiment Study Purpose
24	Test tubes	With rim, 16x150mm, (72 tubes)	6 pc / group	2	Ditto
25	Test tube rack	6 holes, 25mm dia. in top plate, 6 vertical pins for drying	1 pc/ group	9	Ditto
26	Laboratory tongs	Nickel plated	1 pc / teacher	2	Ditto
27	Tube brush	3" long, 1/2" dia.	1 pc / teacher	9	Washing
28	Florence boiling flask	With flat bottom, 250ml	1 pc / teacher	10	Various experiment
29	Graduated cylinder 100ml, 250ml	With pour out and base, 100ml, 250ml	1 set / group	10	Ditto
30	Medicine dropper	Plastic pipet w/ 1ml rubber nipple, length 3 2/1" 12/set	1 pc / group	10	Collection of liquid
31	Glass bin and plate	Wide mouth glass bin 120ml, glass plate 3x3"	1 pc / group	10	Collection of gas
32	Spatula / scoop	Stainless steel scoop w/ handle 6 1/2" long	6 pc / class	6	Collection of powder
33	Glass stirring rod	w/ rounded end, 3x125mm	2 pc / class	2	Stiring of liquid

Table 2-13 Science Laboratory Equipment for a High Basic School

No.	Item	Specification	Number		Use
			Basis	No.	
1	Magnifier	Reading glass, 3x2" dia.	1 pc / pupil	45	Observation of living organisms
2	Forceps	Nickel, straight 4 1/2"	1 pc / pupil	45	Ditto
3	Microscope	For pupil, 4x 10x 40x objectives	1 pc / group	11	Observation of microorganisms
4	Slide glass	3x1" 1.0-1.2mm 72 slides / 1 box	1 set/ group	11	Ditto
5	Cover glass	0.18-0.25mm, 22x22mm 18 / 1 box	1 set/ group	11	Ditto Dissection
6	Dissecting set	For pupil, 7 basic instruments w/ plastic case	1 set/ group	11	
7	Dissecting pan	Aluminum pan w/ vinyl pad	1 pc / group	11	Ditto
8	Thermometer	Glass clinic fever thermometer, dualscale(F and C)	1 pc / group	11	Measurement of temp.
9	Concave lens	Glass, diameter 75mm, Focal length 20cm	1 set/ group	11	Study of light
10	Convex lens	Glass, diameter 75mm, Focal length 20cm	1 set/ group	11	Ditto
11	Optic bench set	Wood bench with all materials	1 pc / group	11	Ditto
12	Concave mirror set	Diameter 50mm, focal length 100mm	1 set/ group	11	Ditto
13	Convex mirror set	Diameter 50mm, focal length 100mm	1 set/ group	11	Ditto
14	Plate glass mirror	Glass, 4"x6"	1 pc / group	11	Ditto
15	Prism	Glass, 25x25mm	1 pc / group	22	Ditto
16	Glass block	Rectangular, 75x50x18mm	1 pc / group	11	Ditto
17	Double beam balance	200x10g, 10x0.1g	2 pc / class	2	Measurement of reagent
18	School balance	Color coded plastic pan w/ easy pour corners, capacity: 2,000g(0.5g), with metric weight set 50gx1g	1 pc / group	11	Measurement
19	Table scale	2kg	2 pc / group	2	Ditto
20	Spring scale	Polystyrene housing, with ring at top and hooks at bottom, 2000g x 25g	1 pc / group	11	Study of balance
21	Helical spring set	Steel helical spring w/ weight of 500g, 1000g	1 pc / group	11	Ditto
22	Mass set	Set of nine (9) hooked masses constructed of brass, 10g~1000g	1 set / group	11	Ditto

Table 2-13 Cont'd

No.	Item	Specification	Number		Use
			Basis	No.	
23	Wheel and axle	Ball-bearing plastic pulley w/ 4 dia. mounted on a single steel rod	1 pc / group	11	Ditto
24	Sheave pulley	Nylon single pulley, 50mm dia.	1 pc / group	11	Ditto
25	Water pressure apparatus	Plastic cylinder (18" high; ID 2") w/ three holes on one side, rubber stopper, tooth picks 8mm plastic tubing 20" long	1 pc / group	11	Study of pressure
26	Ammeter	3 range type	1 pc / group	11	Study of electricity
27	Voltmeter	1 range type, 0-10V	1 pc / group	11	Ditto
28	Mortar generator kit	motor w/ handle, incandescent lamp and socket	1 pc / group	11	Ditto
29	Rheostat (A)	Resistors sliding contact, 8~2.3Amp	1 pc / group	11	Ditto
30	Rheostat (B)	Resistors sliding contact, 1.8~0.3Amp	1 pc / group	11	Ditto
31	Dynamo model	DC motor model, 1 1/2~3V	1 pc / group	11	Ditto
32	Galvanometer	Triple range, 500-0-500A, 100-0-10A, 5-0-5V	1 pc / group	11	Ditto
33	Electricity circuit kit	With peg board, bulb socket w/ bulb, batteries, jiffy clip leads switch steel wool, etc.	1 set/ group	11	Ditto
34	Wire set	Set of bare copper, nichrome wire, PVC covered wire(18 gauge)	1 set/ group	11	Assembling of electric experiment apparatus
35	Soldering gun kit	Soldering gun w/ soldering tip, cutting tip, flux brush, rosin core solder, plastic case, etc.	1 set/ group	11	Ditto
36	Clip leads set	Packages of 10 leads(24" long), five red and five black, with alligator clips on both ends	1 set/ group	11	Ditto
37	Bar magnet	Polished steel 6x3/4x1/4"	2 pc / group	22	Study of magnetic power
38	Electromagnet coil and steel bar set	With two(2) Gilley coils on plastic addle forms, round and square iron cores 5sets	1 set/ group	11	Ditto
39	Magnetic needle compass	5 1/2" needle with stand	1 pc / group	11	Study of magnetic power
40	Compass	12 sets, 42mm dia.	1 pc / group	11	Direction
41	Medical thermometer	Etched stem 7-8mm, Mercury-filled, Celsius and Fahrenheit, -20C~110C	1 pc / group	11	general temp. measurement
42	Thermometer	Wall type, recessed tube, 1 3/4 x 7 3/8" high	2 pc / class	2	Study of weather
43	Barometer	4" dia., wall mounts	1 pc / class	1	Ditto

Table 2-13 Cont'd

No.	Item	Specification	Number		Use
			Basis	No.	
44	Anemoscope & Anemometer	w/ portable handle	1 pc / class	1	Ditto
45	Hygrometer	-5~50 Celsius, 20~120 Fahrenheit	1 pc / class	2	Ditto
46	Max & Min. Thermometer	C & F scale, push bar reset, w/ case	2 pc / class	2	Ditto
47	Syringe	Plastic, 60ml	2 pc / class	12	Apparatus for studying cloud
48	Xylopipes	20 xylophone pipe set	1 set/ teacher	1	Study of sound
49	Tuning forks w/ resonator box	4 tuning fork set	1 set/ teacher	1	Ditto
50	Calorimeter	Aluminum double wall container, 350ml	1 pc / group	11	Measurement of calorie
51	Molecular model set	Colored wooden balls and springs	1 set/ class	1	Study of molecule structure
52	Beaker	Glass, w/ graduation, 250ml, 400ml	1 set/ group	12	Various experiment
53	Round bottom flask	Glass, 500ml, stopper # 6.5	1 pc / group	12	Ditto
54	Florence boiling flask	Glass, 250ml, stopper # 4	1 pc / group	12	Ditto
55	Conical flask	Glass, 250ml, stopper # 6.5	1 pc / group	12	Ditto
56	Distilling	Glass, w/ side tube, 200ml, stopper #	1 pc / group	12	Ditto
57	Round jar	Glass, 20cm dia., 10cm depth	1 pc / group	12	Ditto
58	Test tube	Glass, 16x150mm, 72 tubes /set	12 pc / group	2	Ditto
59	Test tube stand	6 holes - 25mm, 6 rods	1 pc / group	12	Support of test tube
60	Laboratory tong	Nickel plate	1 pc / group	12	Handling of test tube
61	Test tube brush	3" long, 1/2" dia.	1 pc / group	12	Washing
62	Petri dish	Glass, 60mm dia x15mm depth	2 pc / group	22	Culture
63	Support stand	Table type, attached horizontally or vertically	1 pc / group	11	Various experiment
64	Clamp	Round jaws, adjustable from 4 1/4"-5"	1 pc / group	11	Supporting goods
65	Support ring	2" dia.	1 pc / group	11	Ditto
66	Gas burner	For use 1/2" tube, w/ frame adjustable	1 pc / group	11	Heating & burning
67	Alcohol lamp	Glass, 2oz capacity	1 pc / group	12	Ditto
68	Tripod	Steel, 6"high	1 pc / group	12	Supporting
69	Wire gauze	Ceramic fiber center, 4x4"	1 pc / group	20	Supporting

Table 2-13 Cont'd

No.	Item	Specification	Number		Use
			Basis	No.	
70	Pipet	Glass, 10ml	1 pc / group	12	Measurement of liquid
71	Graduated cylinder	Glass, 100ml, 250ml	1 set / group	12	Ditto
72	Medicine Dropper	Plastic, 3 2/1" long, set of 12 pieces	1 pc / group	12	Ditto
73	Thistle funnel	Plastic, 29mm	1 pc / group	12	Filtration
74	Funnel	Glass, 50mm	1 pc / group	12	Ditto
75	Funnel support	Polyethylene, single hole, w/ base	1 pc / group	11	Supporting
76	Filter paper	White, open-textured paper, 100 circles	1 set / class	2	Filtration
77	Stirring rod	Glass, 3mm dia. x 125mm long	1 pc / group	12	Stirring of liquid
78	Deflagration spoon	dia 3/4", 15" long	1 pc / group	11	Burning chemicals
79	Spatula /Scoop	Stainless steel w/ wooden handle, 6 1/2" long	1 pc / group	11	Collection of powder
80	Mortar and pestle	160mm dia., 600ml	1 set / group	11	Grinding
81	Pinch clamp	Flat brass wire, for 2 1/2" tube	1 pc / group	11	Parts of experiment apparatus
82	PVC tube	Translucent PVC tube, 3/16" bore dia., 10m long	1 pc / class	1	Ditto
83	Rubber tube	Rubber, 3/16" bore dia., 10m long	1 pc / class	1	Ditto
84	Delivery tube set	Glass, 6mm dia. 4kinds of tube set	1 set / group	11	Ditto
85	Rubber stopper set	1hole, 2holes, no hole of # 0, 3, 4, 6.5	1 set / group	11	Ditto
86	Glass bin and plate	Glass bin 120ml. glass plate 3x3"	1 pc / group	24	Collection of liquid
87	Evaporating dish	Porcelain, 70mm dia., 28mm height.	1 pc / group	12	Evaporation
88	Set of glass bottles for powder	Glass, w/ cap, 1, 2, 4, 8, 16, 32oz capacities / each	1 set / class	3	Storage of powder
89	Set of glass reagent bottles	Glass, w/ cap, 1, 2, 8, 16oz capacities/each	1 set / class	3	Storage of liquid

2) School Furniture

Educational furniture and equipment to be provided for each low basic and high basic school under the Project are as shown in Table 2-14 and Table 2-15.

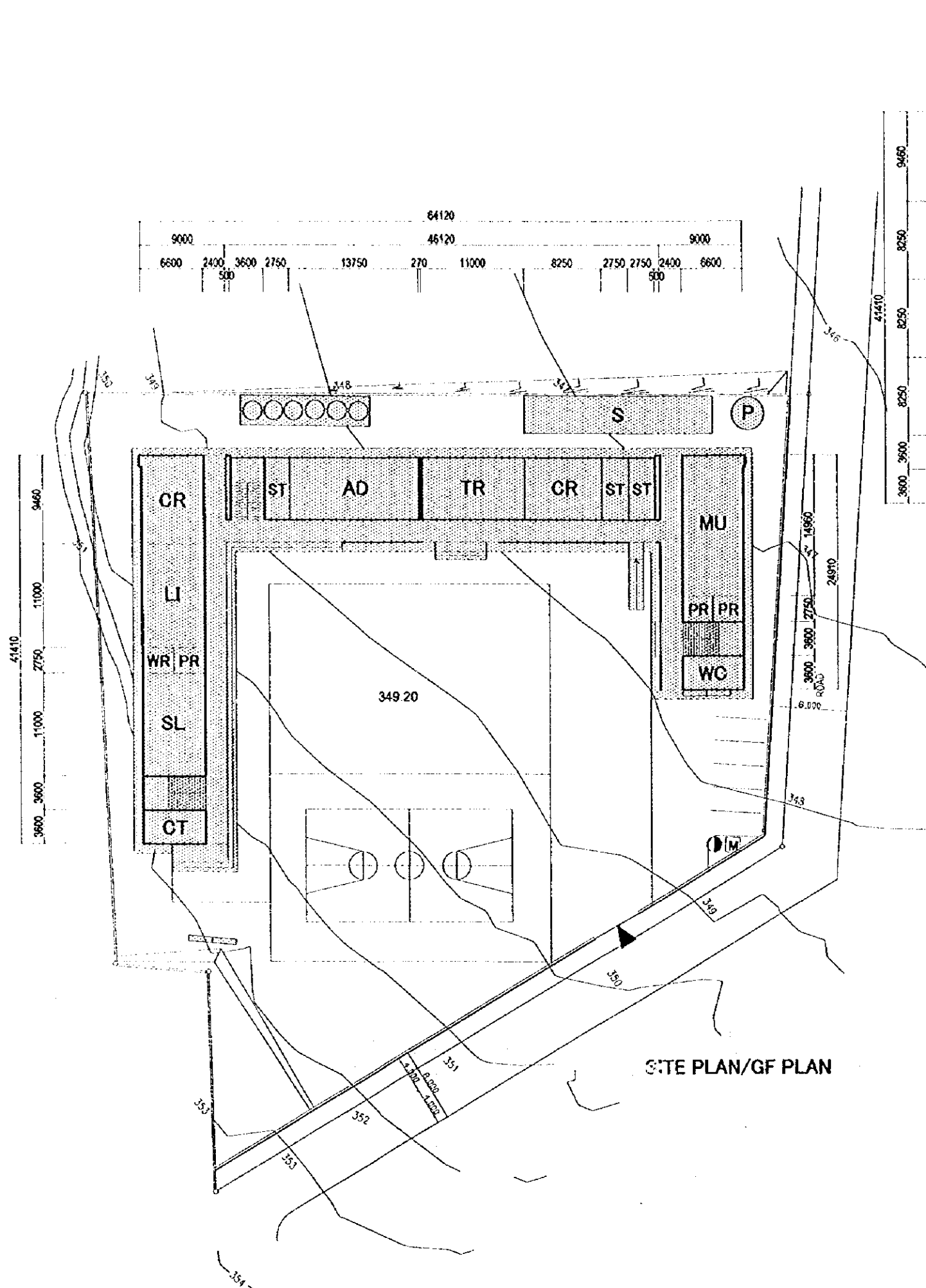
Table 2-14 Furniture Units for a Low Basic School

Room	Item	Specification	Qty	
Classroom - Low grade	1-1	Pupils desk	For 2 pupils (H=58cm)	20
	2-1	Pupils chair	For 1 pupil (H=34cm)	40
Classroom - High grade	1-2	Pupils desk	For 2 pupils (H=64cm)	20
	2-2	Pupils chair	For 1 pupil (H=38cm)	40
Science lab. & Prep. room	19-1	Stool chair	Chrome iron pipe, H=46cm	42
	19-2	Stool chair	Chrome iron pipe, H=60cm	2
Multipurpose room & Prep. room (General Type)	3	Teacher's desk		1
	4	Teacher's chair		1
	10	Metal cabinet -1	193x90x45cm, w/ 2doors	2
	11	Metal cabinet -2	193x90x45cm, w/ 4doors	1
	12	Metal cabinet -3	193x90x45cm, w/ 12 doors	1
	13	Wardrobe for sport goods	185x120x45cm	2
	17	Multipurpose chair	Chrome iron pipe, H=45cm	40
	19-1	Stool chair	Chrome iron pipe, H=46cm	40
Multipurpose room & Prep. room (Science Lab. Type for low basic school)	24	Working table	H=70cm, 240x100cm top board	4
	10	Metal cabinet -1	193x90x45cm, w/ 2doors	2
	11	Metal cabinet -2	193x90x45cm, w/ 4doors	1
	12	Metal cabinet -3	193x90x45cm, w/ 12 doors	1
	13	Wardrobe for sport goods	185x120x45cm	2
	17	Multipurpose chair	Chrome iron pipe, H=45cm	40
	19-1	Stool chair	Chrome iron pipe, H=46cm	40
Library & Prep. room	24	Working table	H=70cm, 240x100cm top board	4
	1-2	Pupils desk	For 2 pupils (H=64cm)	18
	2-2	Pupils chair	For 1 pupils (H=38cm)	40
	3	Teacher's desk		1
	4	Teacher's chair		1
	10	Metal cabinet -1	193x90x45cm, w/ 2 doors	1
	19-2	Stool chair	Chrome iron pipe, H=60cm	1
Teachers room	4	Teacher's chair	In classroom	-
	5	Teacher's desk	In staff room	-
	12	Metal cabinet -3	193x90x45cm, w/ 12 doors	-
	17	Book shelves	Plywood, 193x90x30cm	2
Headmaster room	4	Teacher's chair		8
	6	Headmaster desk	H=76cm, 150x70cm top board	1
	7	Headmaster chair	With elevation adjustment	1
	8	Metal file cabinet -2	132.5x46x65cm, w/4 drawers	2
	10	Metal cabinet -1	193x90x45cm, w/ 2 doors	2
	14	Metal file cabinet -1	193x90x45cm, w/ 2 doors	1
	16	Book shelves	Plywood, 193x90x30cm	2
	22	Computer table	H=76cm, 110x60cm top board	1
Secretary room	24	Meeting table	H=76cm, 160x80cm top board	2
	6	Headmaster desk	H=76cm, 150x70cm top board	1
	8	Metal file cabinet -2	132.5x46x65cm, w/4 drawers	2
	10	Metal cabinet -1	193x90x45cm, w/ 2 doors	2
	14	Metal file cabinet -1	193x90x45cm, w/ 2 doors	1
	19	Secretary chair	With elevation adjustment	1
	22	Computer table	H=76cm, 110x60cm top board	1
First aid room	23	Photo copy machine table	H=76cm, 110x80cm top board	1
	4	Teacher's chair		1
	8	Metal file cabinet -2	132.5x46x65cm, w/4 drawers	2
	9	Metal cabinet	193x90x45cm, w/ 1 doors	2
	10	Metal cabinet -1	193x90x45cm, w/ 2 doors	1
	15	Laboratories locker	193x90x40cm	1
	19-1	Stool chair	Chrome iron pipe, H=46cm	1
First aid room	22	Computer table	H=76cm, 110x60cm top board	1
	25	Consulting bed	For resting, 60x195cm	1

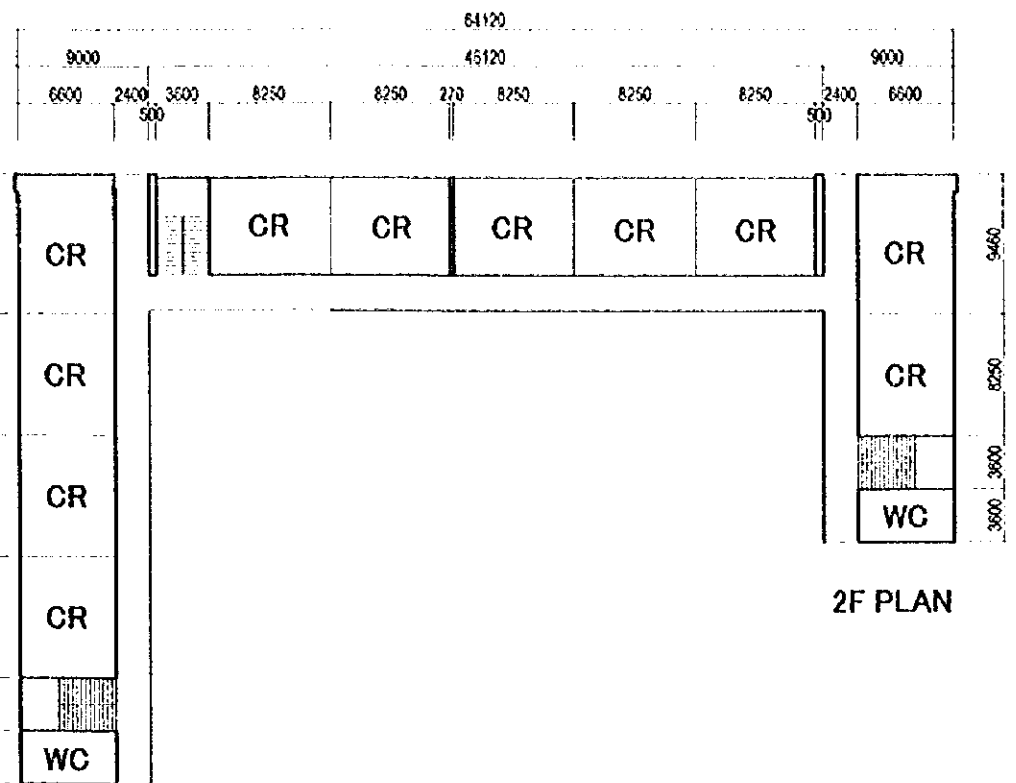
Table 2-15 Furniture Units for a High Basic School

Room	Item	Specification	No.
Classroom	1-3 Pupils desk	For 2 pupils (H=70cm)	20
	2-3 Pupils chair	For 1 pupil (H=42cm)	40
Science lab. & Prep. room	19-2 Stool chair	Chrome iron pipe, H=60cm	42
Multipurpose room & Prep. room	3 Teacher's desk		1
	4 Teacher's chair		1
	10 Metal cabinet -1	193x90x45cm, w / 2 doors	2
	11 Metal cabinet -2	193x90x45cm, w /4 doors	1
	12 Metal cabinet -3	193x90x45cm, w/ 12 doors	1
	13 Wardrobe for sporting goods	185x120x45cm	2
	19-2 Stool chair	Chrome iron pipe, H=60cm	40
	17 Multipurpose chair	Chrome iron pipe, H=45cm	40
	21 Working table	H=70cm, 240x100cm top board	4
Library & Prep. room	1-3 Pupils desk	For 2 pupils (H=70cm)	18
	2-3 Pupils chair	For 1 pupil (H=42cm)	40
	3 Teacher's desk		1
	4 Teacher's chair		1
	10 Metal cabinet -1	193x90x45cm, w/ 2 doors	1
	20 Stool chair	Chrome iron pipe, H=60cm	41
	22 Computer table	H=76cm, 110x60cm top board	20
Teachers room	4 Teacher's chair		1
	5 Teacher's desk		1
	12 Metal cabinet -3	193x90x45cm, w/ 12 doors	1
	17 Book shelves	Plywood, 193x90x30cm	2
Headmaster room	4 Teacher's chair		8
	6 Headmaster desk	H=76cm, 150x70cm top board,	1
	7 Headmaster chair	With elevation adjustment	1
	8 Metal file cabinet -2	132.5x46x65cm, w/4 drawers	2
	10 Metal cabinet -1	193x90x45cm, w/ 2 doors	2
	14 Metal file cabinet -1	193x90x45cm, w/ 2 doors	1
	16 Book shelves	Plywood, 193x90x30cm	2
	20 Computer table	H=76cm, 110x60cm top board	1
	22 Meeting table	H=76cm, 160x80cm top board	2
Secretary room	6 Headmaster table	H=76cm, 150x70cm top board,	1
	8 Metal file cabinet -2	132.5x46x65cm, w/4 drawers	2
	10 Metal cabinet -1	193x90x45cm, w/ 2 doors	2
	14 Metal file cabinet -1	193x90x45cm, w/ 2 doors	1
	18 Secretary chair	With elevation adjustment	1
	20 Computer table	H=76cm, 110x60cm top board	1
	21 Photo copy machine table	H=76cm, 110x80cm top board	1
First Aid room	4 Teacher's chair		1
	8 Metal file cabinet -2	132.5x46x65cm, w/4 drawers	2
	9 Metal cabinet	193x90x45cm, w/ 1 doors	2
	10 Metal cabinet -1	193x90x45cm, w/ 2 doors	1
	15 Laboratories locker	193x90x40cm	1
	19-2 Stool chair	Chrome iron pipe, H=60cm	1
	20 Computer table	H=76cm, 110x60cm top board	1
	23 Consulting bed	For resting, 60x195cm	1

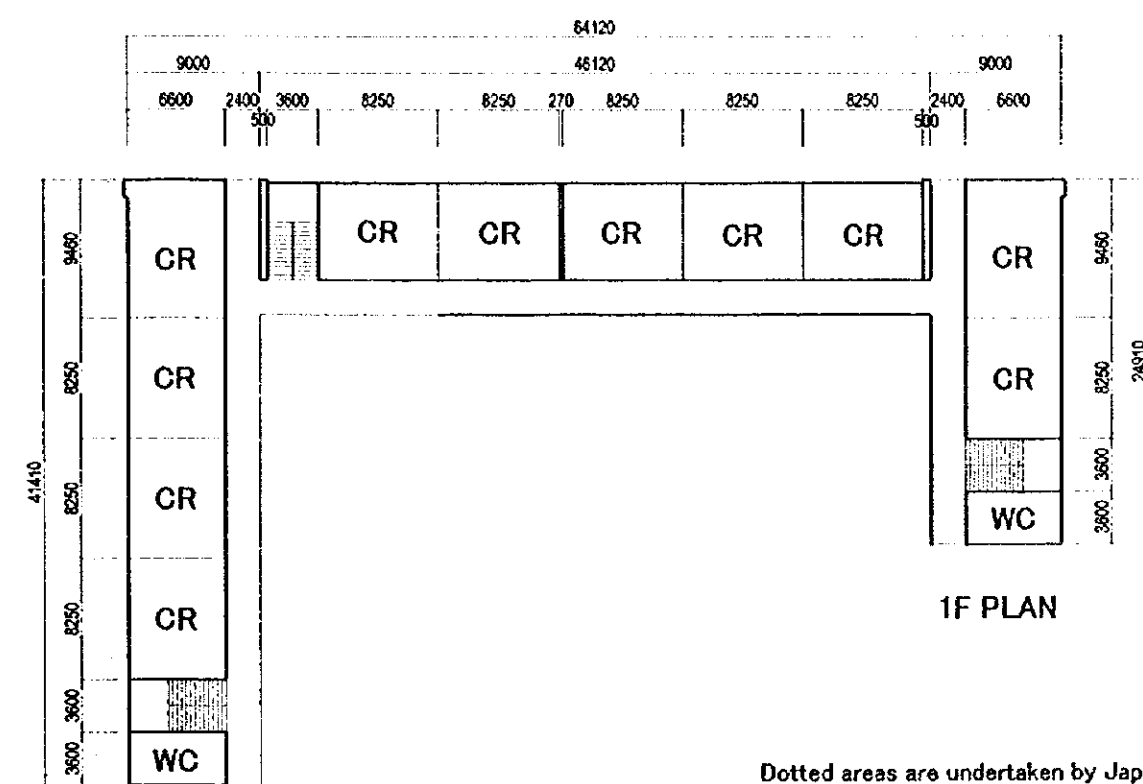
(7) Basic Design Drawings



SITE PLAN/GF PLAN



2F PLAN

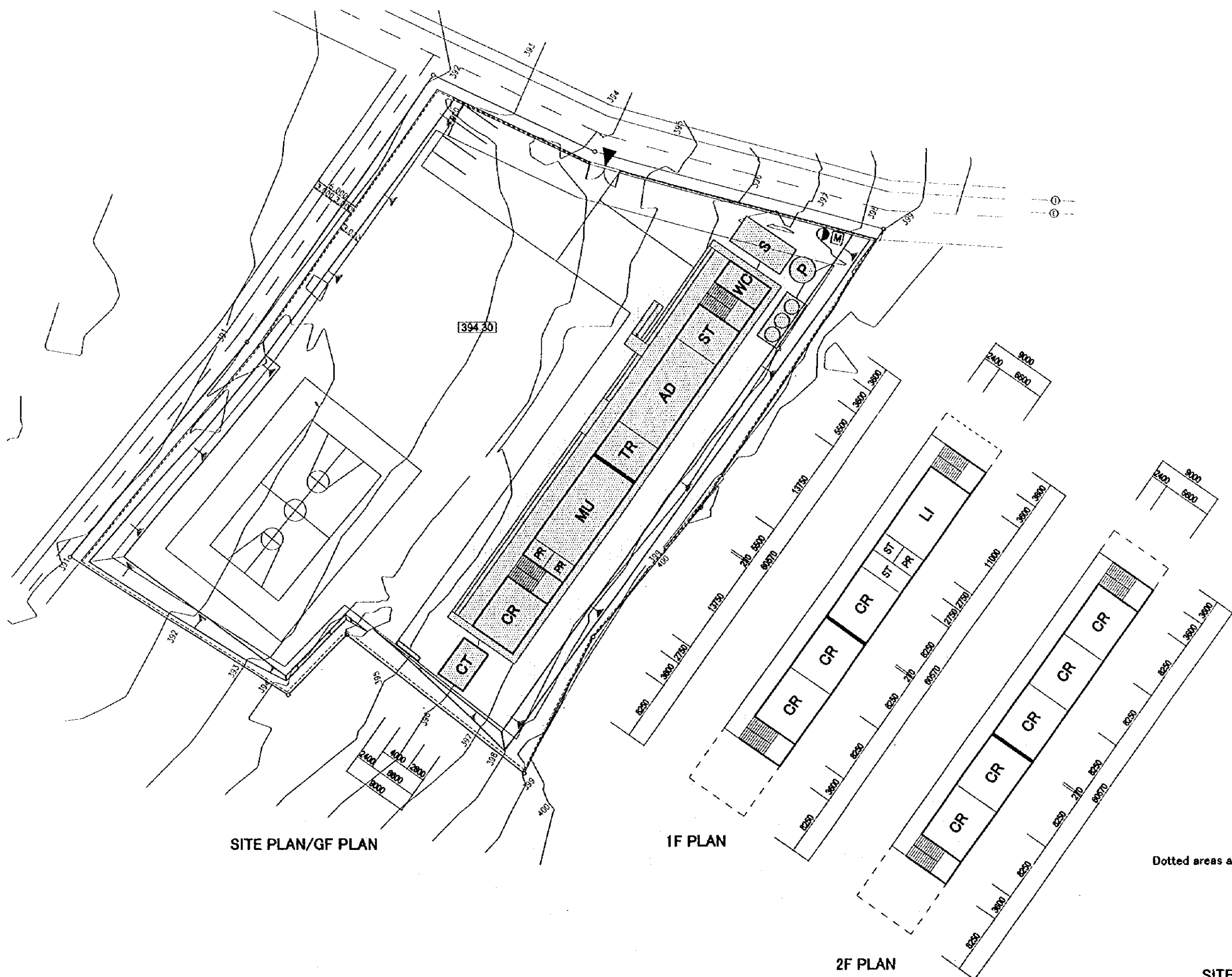


1F PLAN

LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
[P]	PERCOLATION PIT
[E]	ELECTRIC & TELEPHONE POLE
[M]	METER
[W]	WATER TANK
[F]	DRINKING FOUNTAIN

Dotted areas are undertaken by Japanese side.





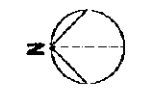
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SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
[P]	PERCOLATION PIT
[E]	ELECTRIC & TELEPHONE POLE
[M]	METER
[W]	WATER TANK
[F]	DRINKING FOUNTAIN

SITE PLAN/GF PLAN

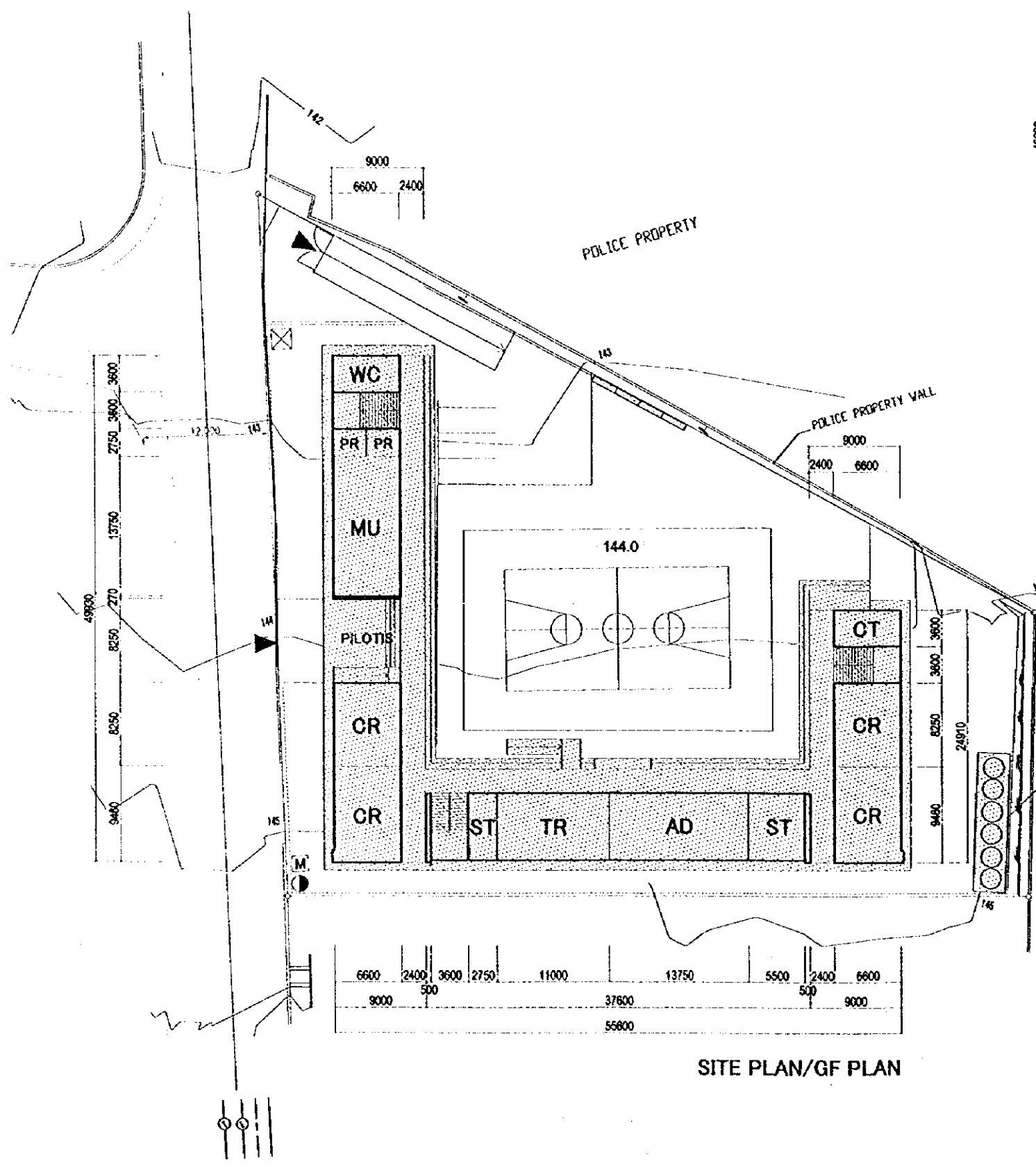
1F PLAN

2F PLAN

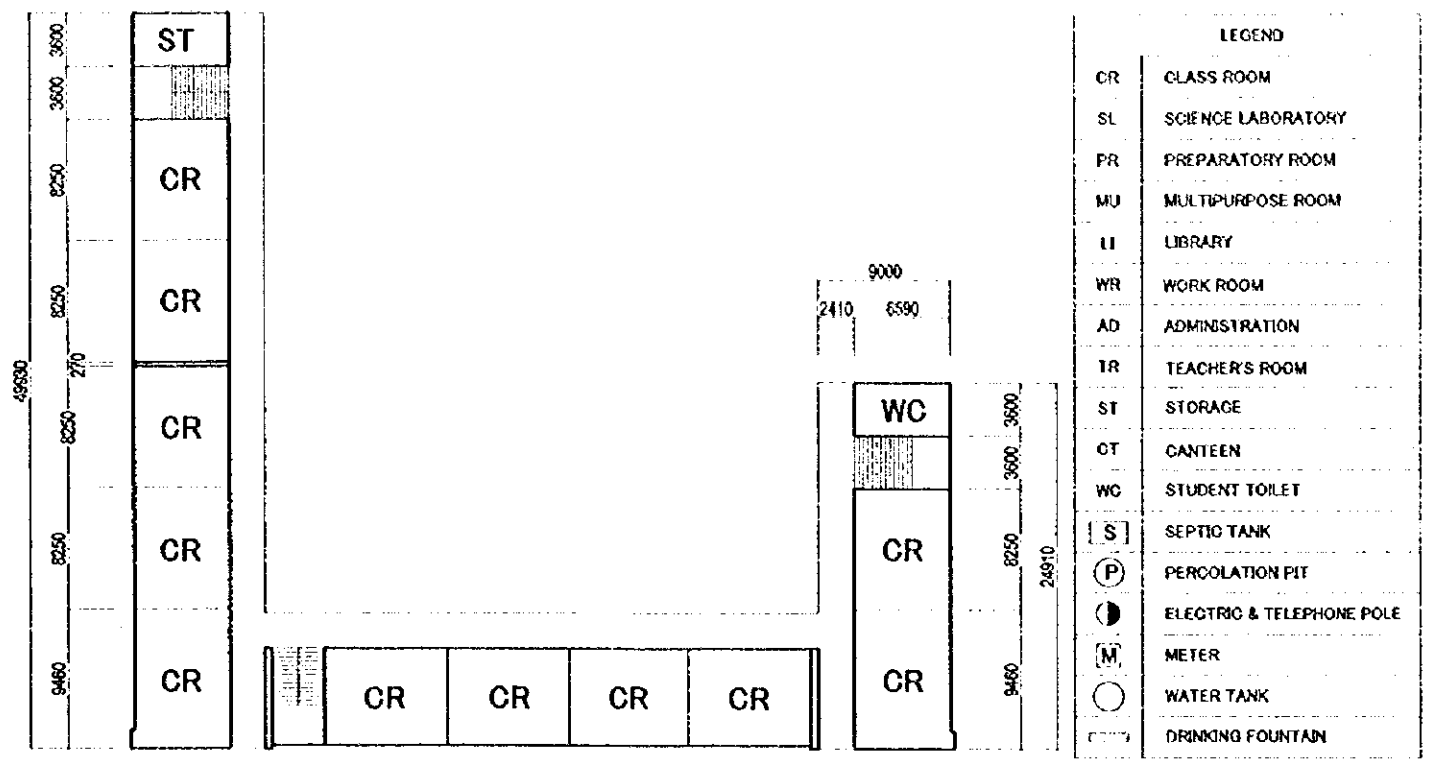
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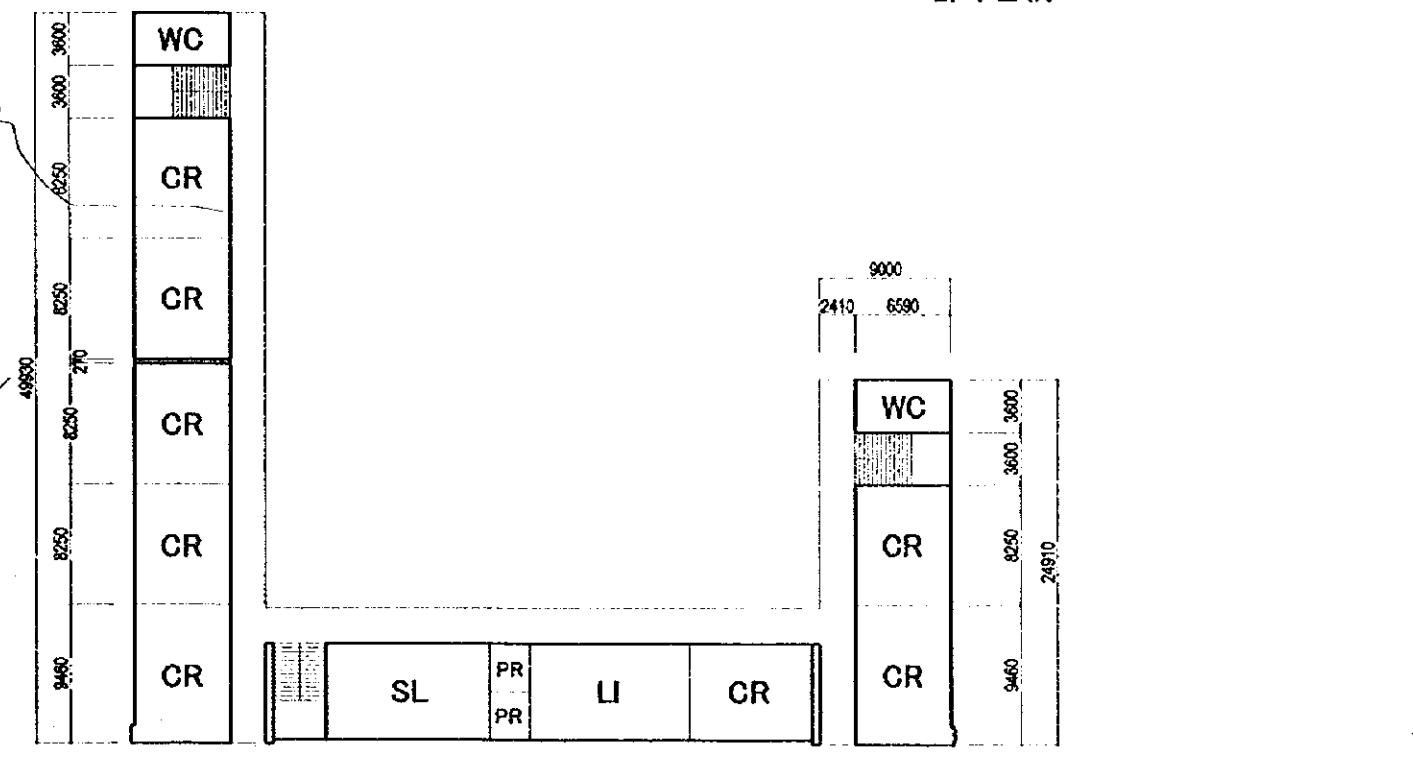
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No.2B Seerees



SITE PLAN/GF PLAN



2F PLAN



1F PLAN

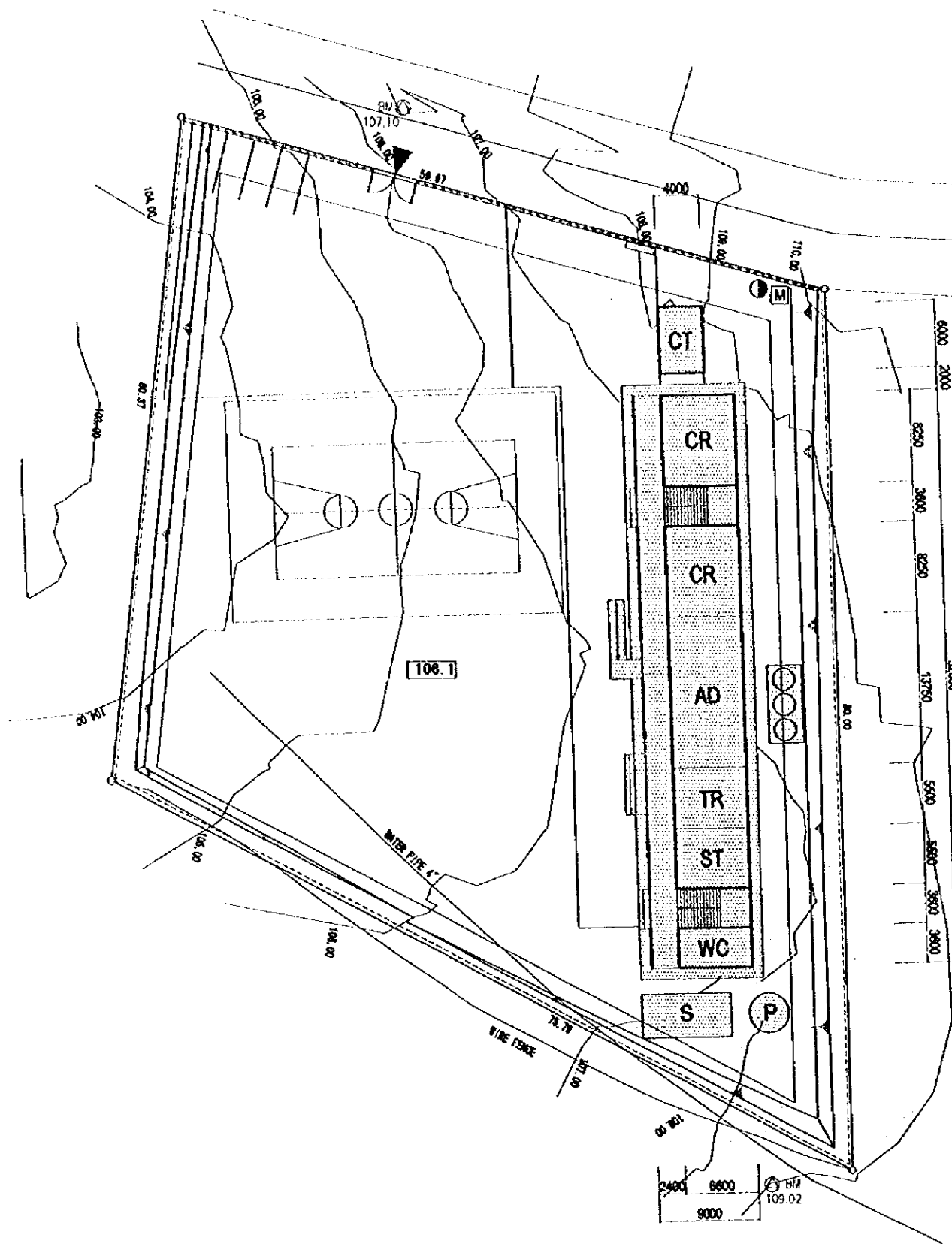
LEGEND

CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
OT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(F)	DRINKING FOUNTAIN

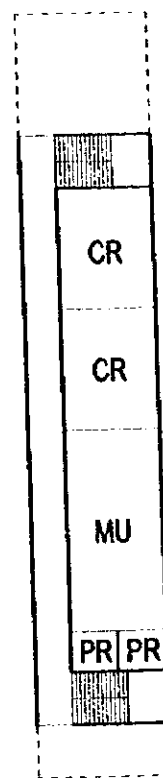
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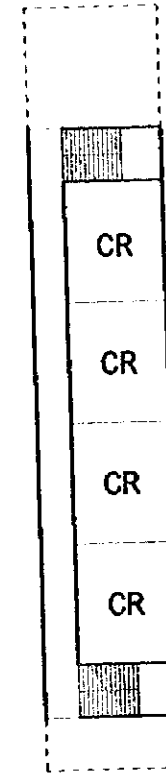
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No.3 JENIN



SITE PLAN/GF PLAN



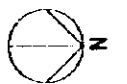
1F PLAN



2F PLAN

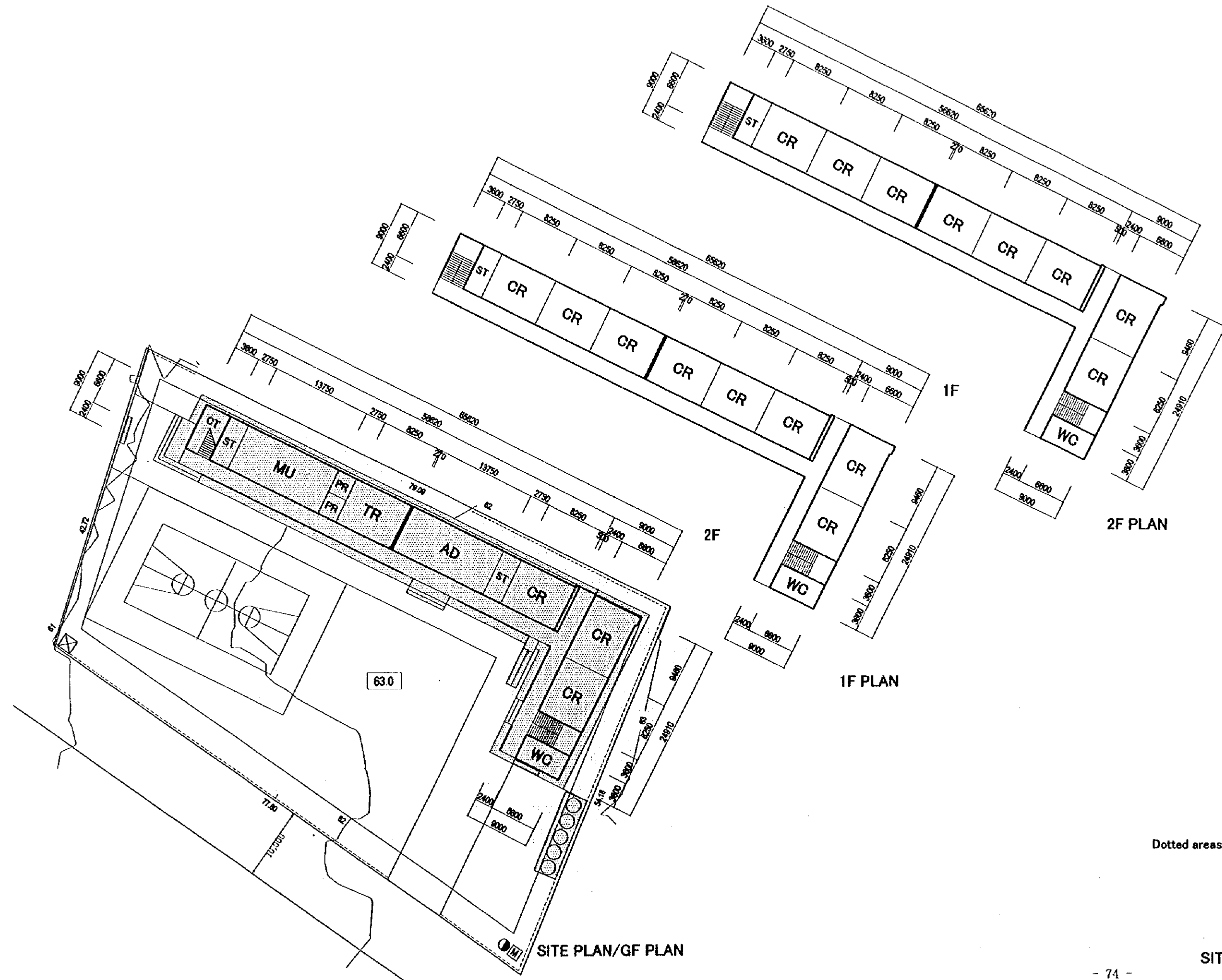
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SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LJ	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
[P]	PERCOLATION PIT
[E]	ELECTRIC & TELEPHONE POLE
[M]	METER
[O]	WATER TANK
[F]	DRINKING FOUNTAIN

Dotted areas are undertaken by Japanese side.

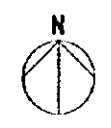


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No.6 Baqa Sharqia

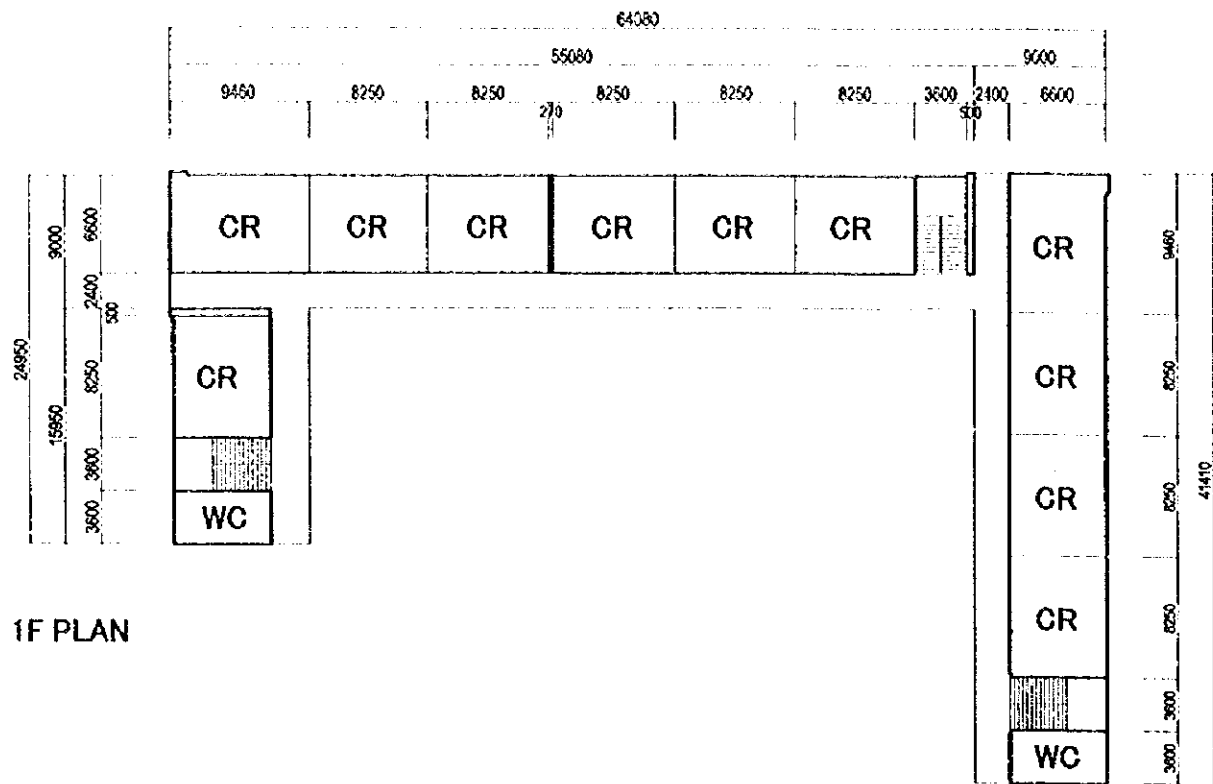
LEGEND	
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SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
[P]	PERCOLATION PIT
[E]	ELECTRIC & TELEPHONE POLE
[M]	METER
[W]	WATER TANK
[F]	DRINKING FOUNTAIN



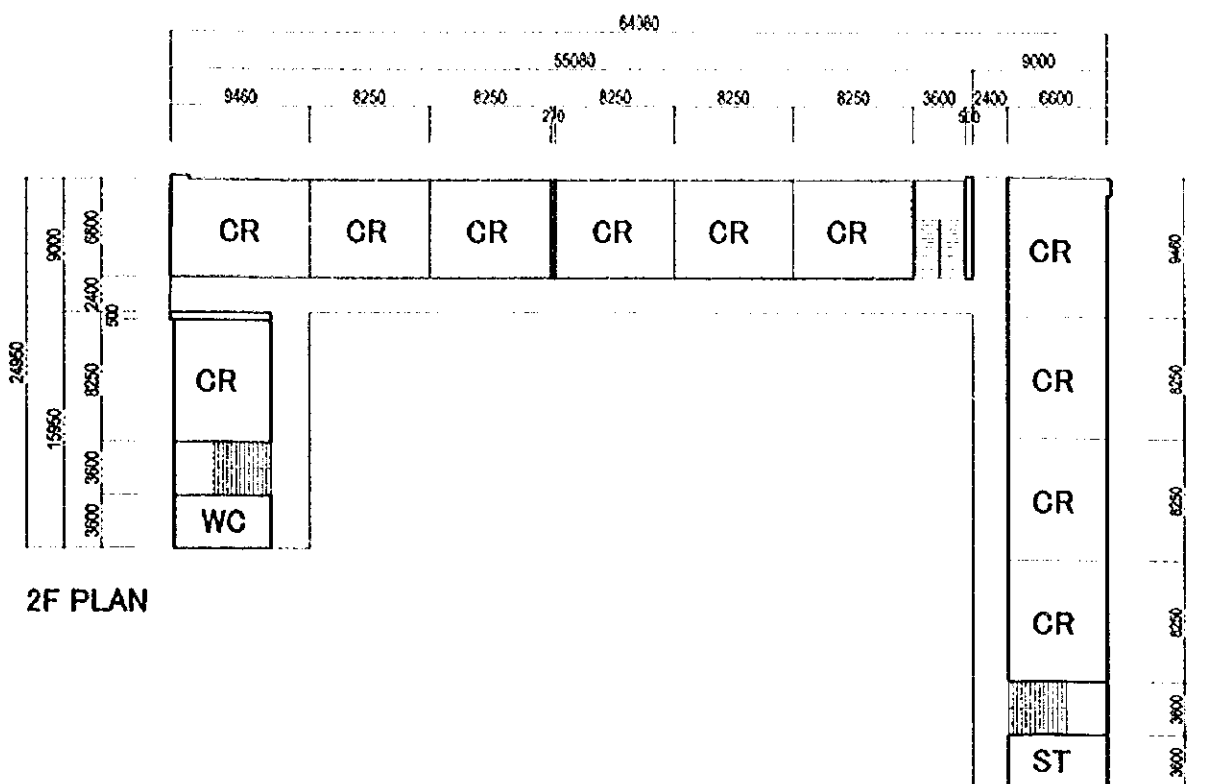
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No.7B Al Haiy Al-Janooby

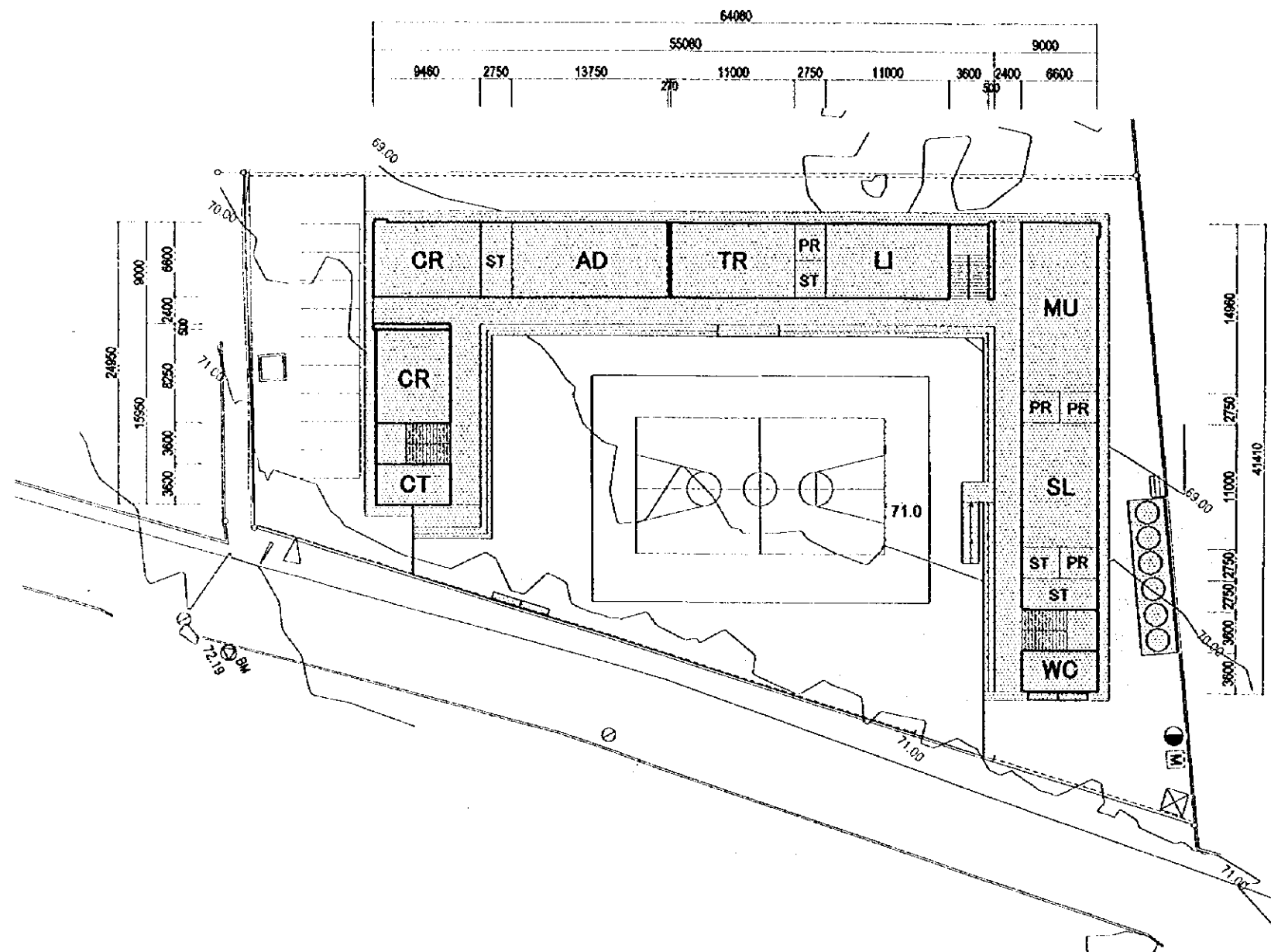


1F PLAN



2F PLAN

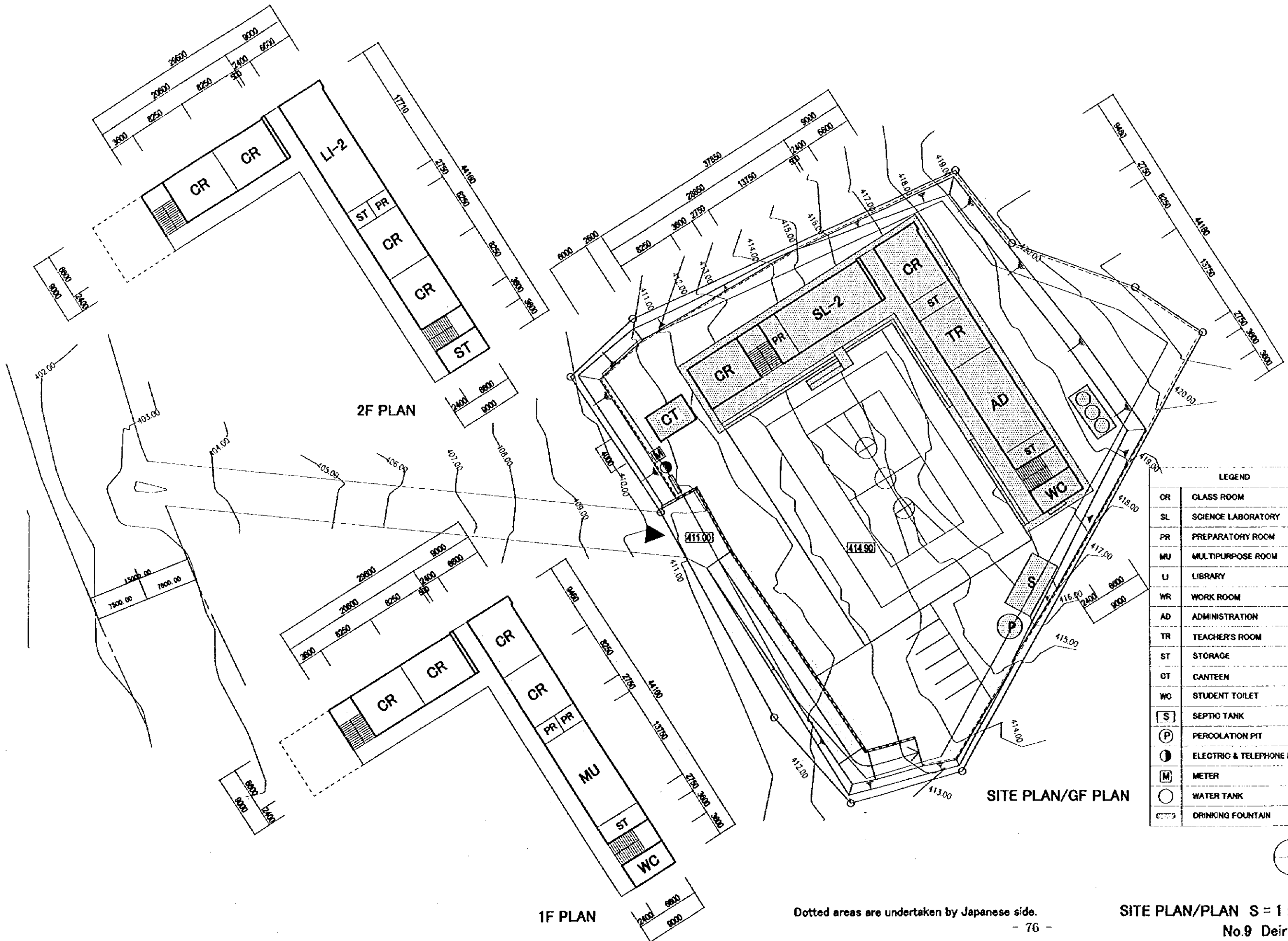
LEGEND	
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SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
[P]	PERCOLATION PIT
[E]	ELECTRIC & TELEPHONE POLE
[M]	METER
[W]	WATER TANK
[F]	DRINKING FOUNTAIN



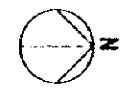
SITE PLAN/GF PLAN

Dotted areas are undertaken by Japanese side.





LEGEND	
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SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(F)	DRINKING FOUNTAIN



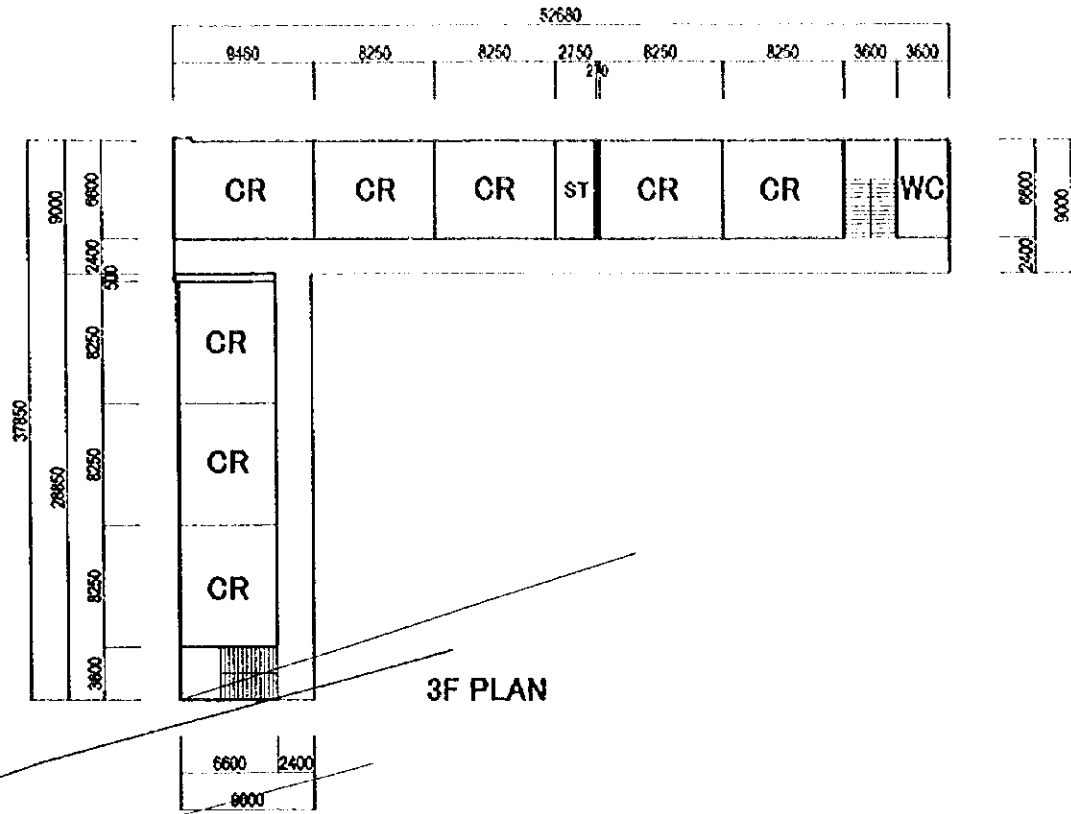
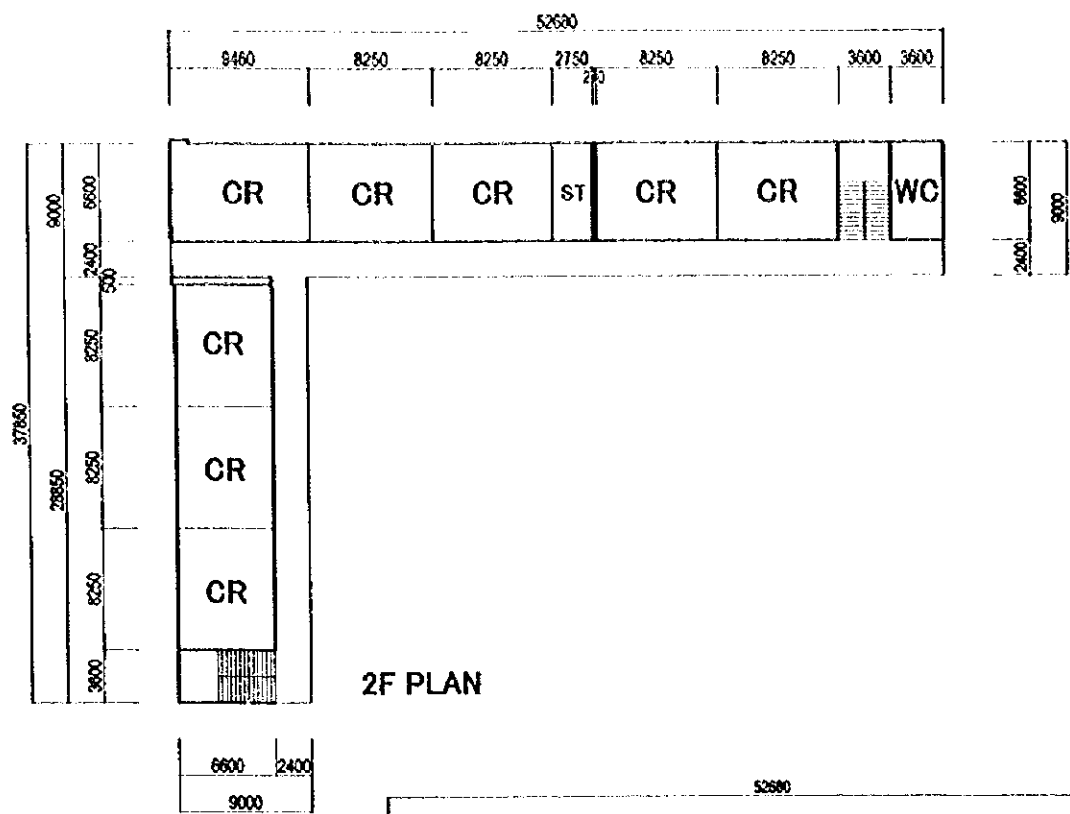
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No.9 Deir Istia

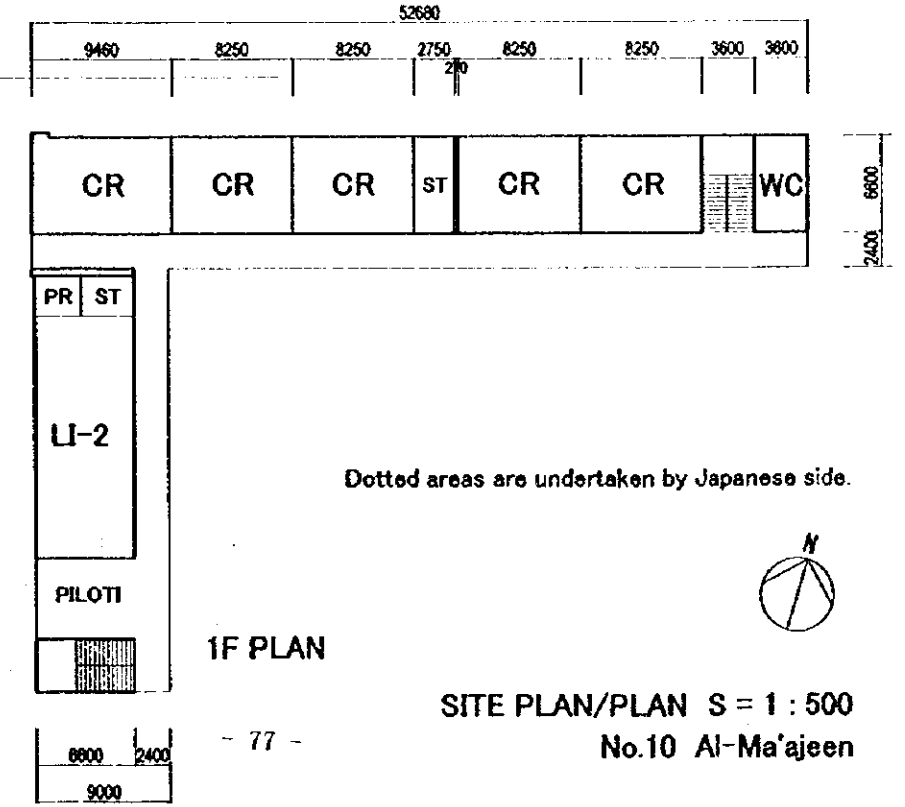
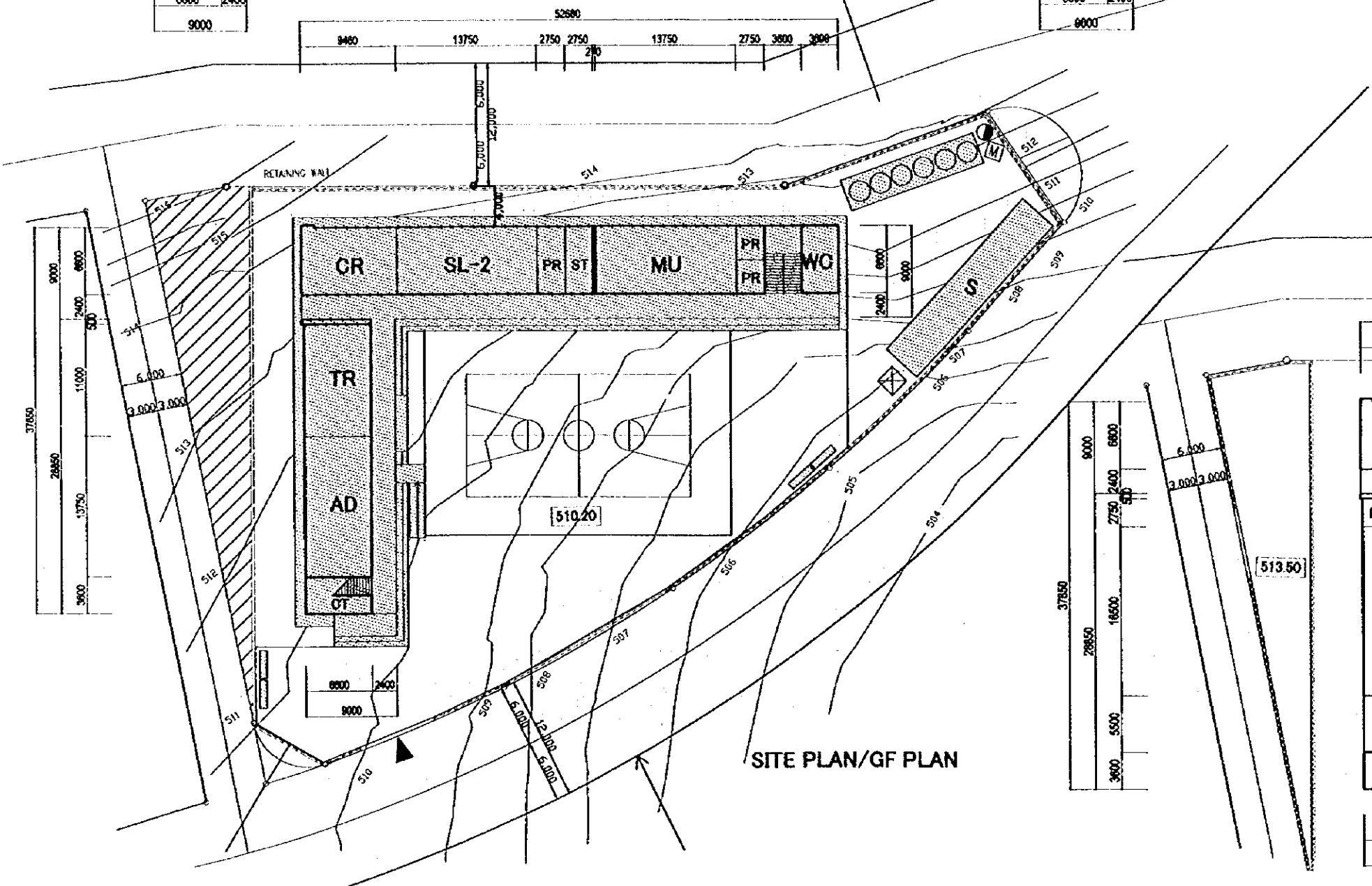
SITE PLAN/GF PLAN

2F PLAN

1F PLAN



LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(F)	DRINKING FOUNTAIN

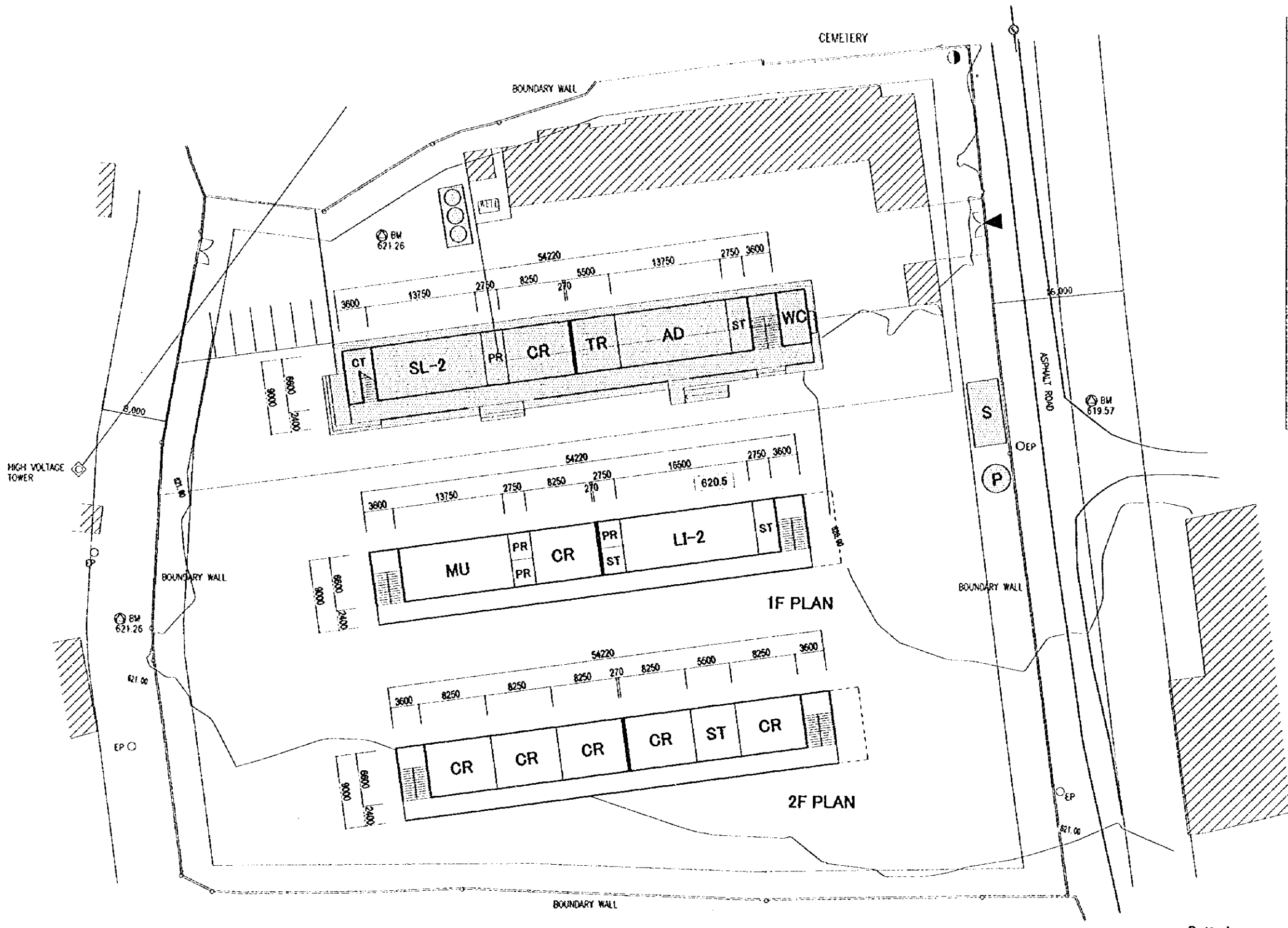


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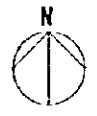
SITE PLAN/PLAN S = 1 : 500
No.10 Al-Ma'ajeen

LEGEND	
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SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(F)	DRINKING FOUNTAIN

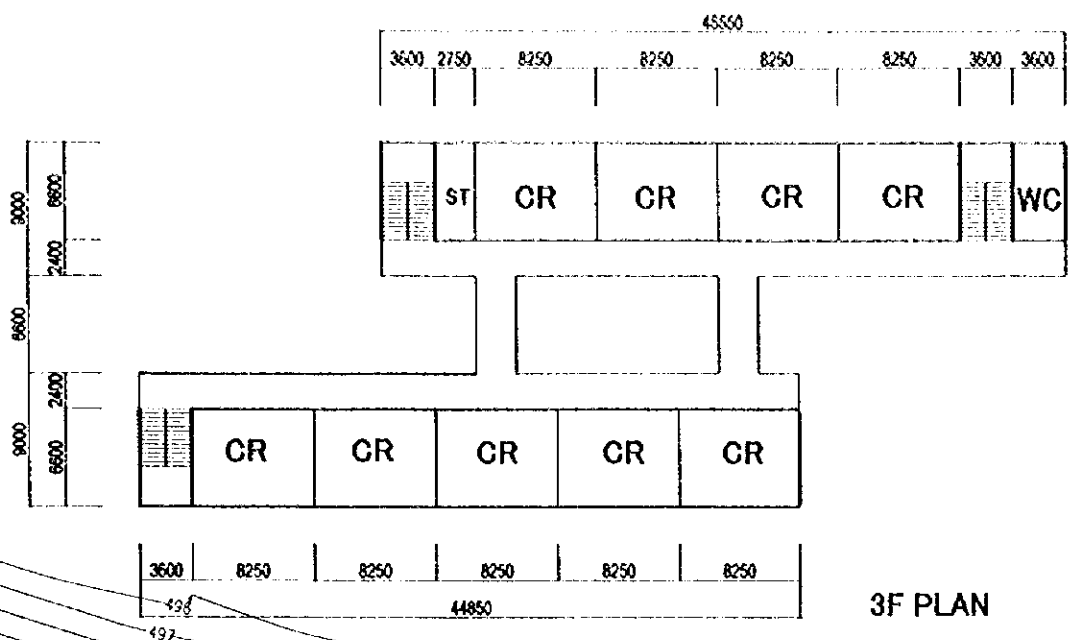
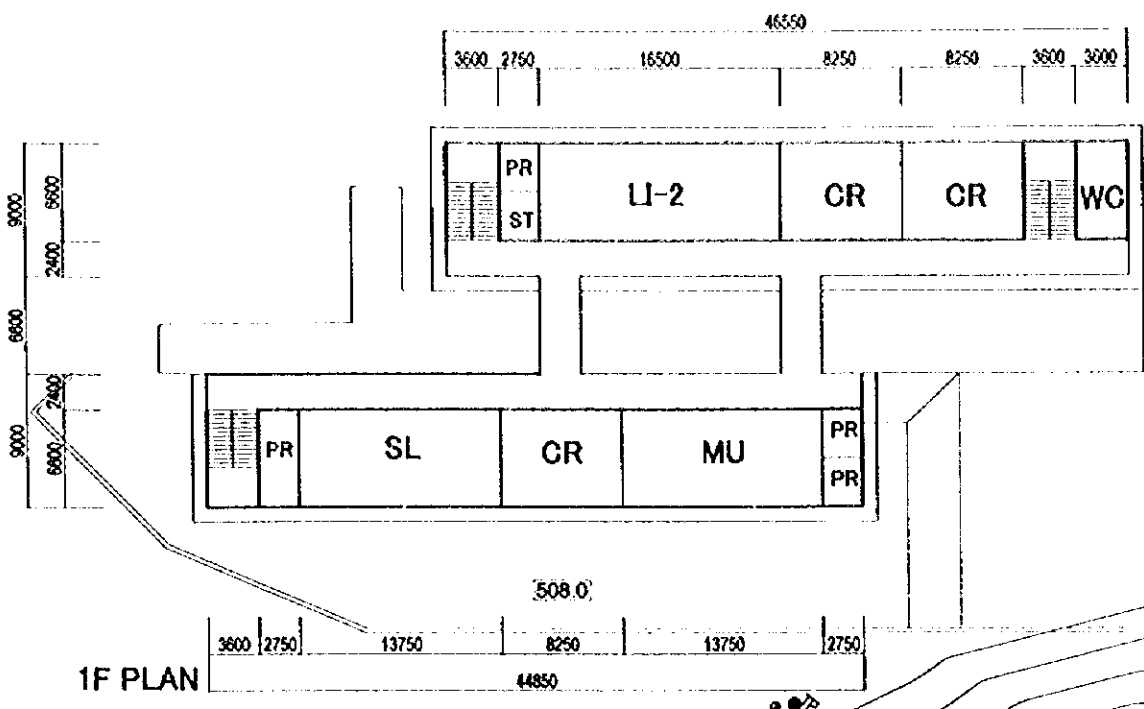


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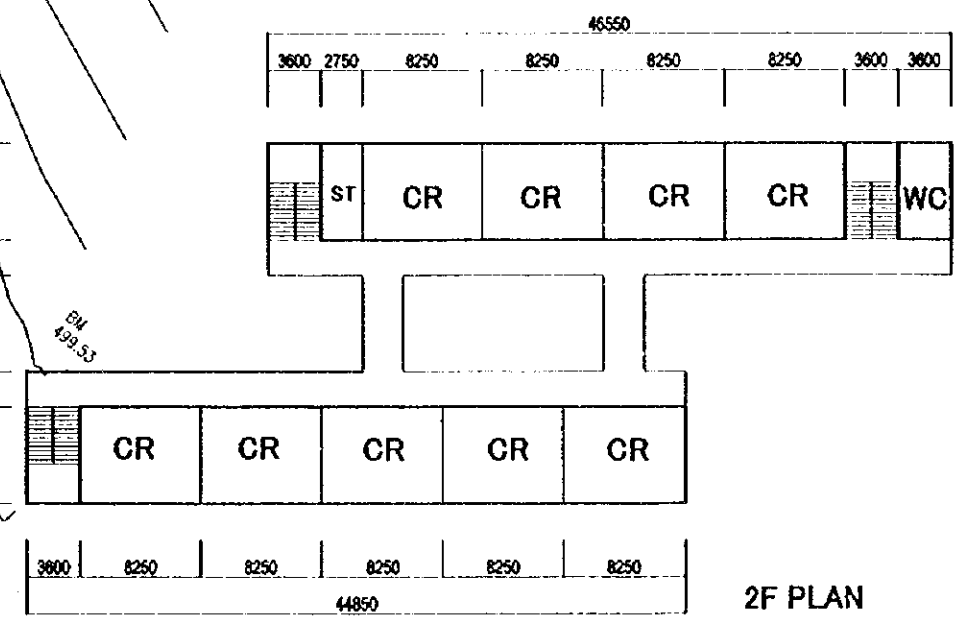
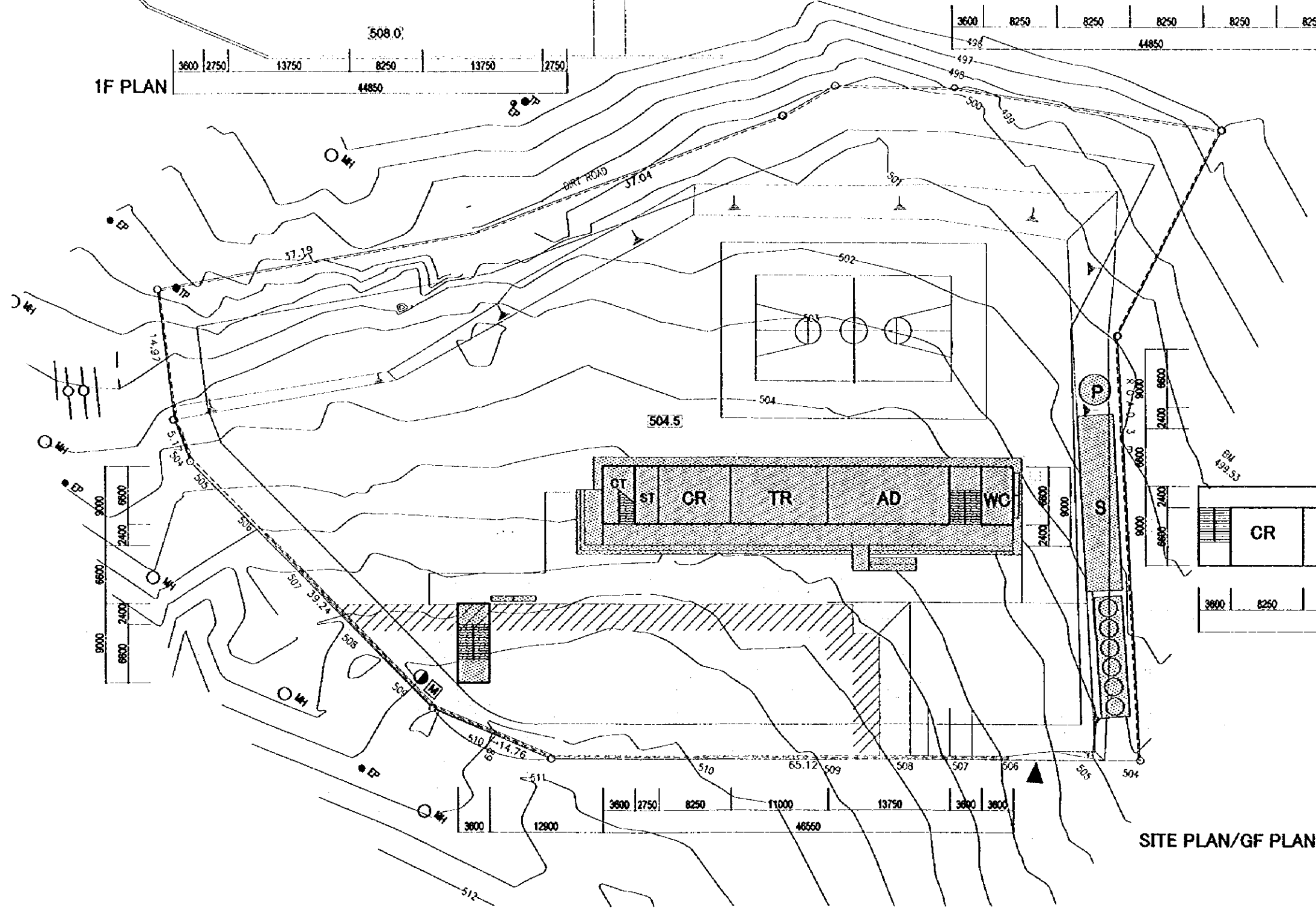
SITE PLAN/GF PLAN



SITE PLAN/PLAN S = 1 : 500
No.11 Aqrqba



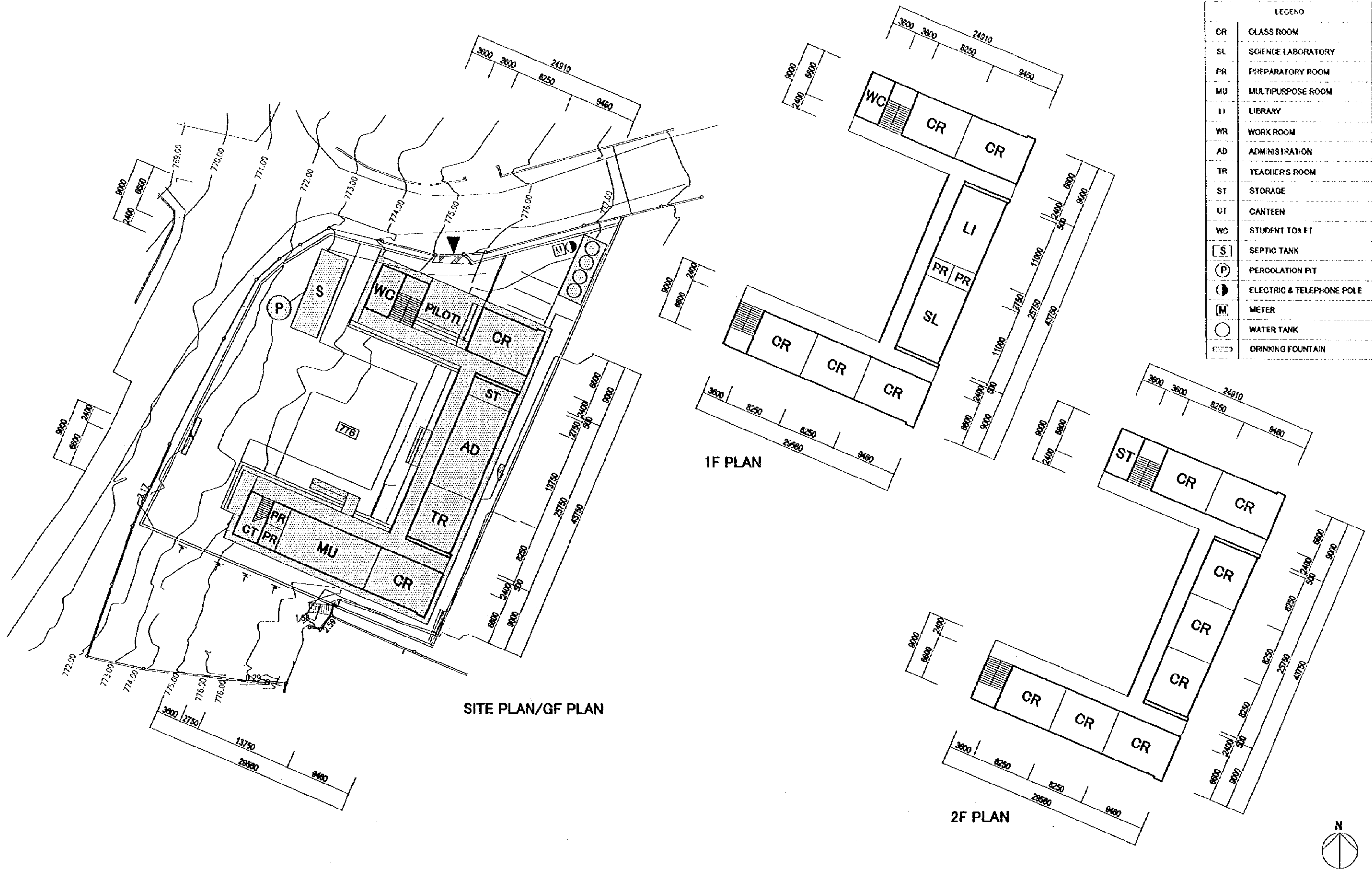
LEGEND	
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SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
OT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
[P]	PERCOLATION PIT
[E]	ELECTRIC & TELEPHONE POLE
[M]	METER
[W]	WATER TANK
[F]	DRINKING FOUNTAIN



Dotted areas are undertaken by Japanese side.



SITE PLAN/PLAN S = 1 : 500
No.12B Rafeedia



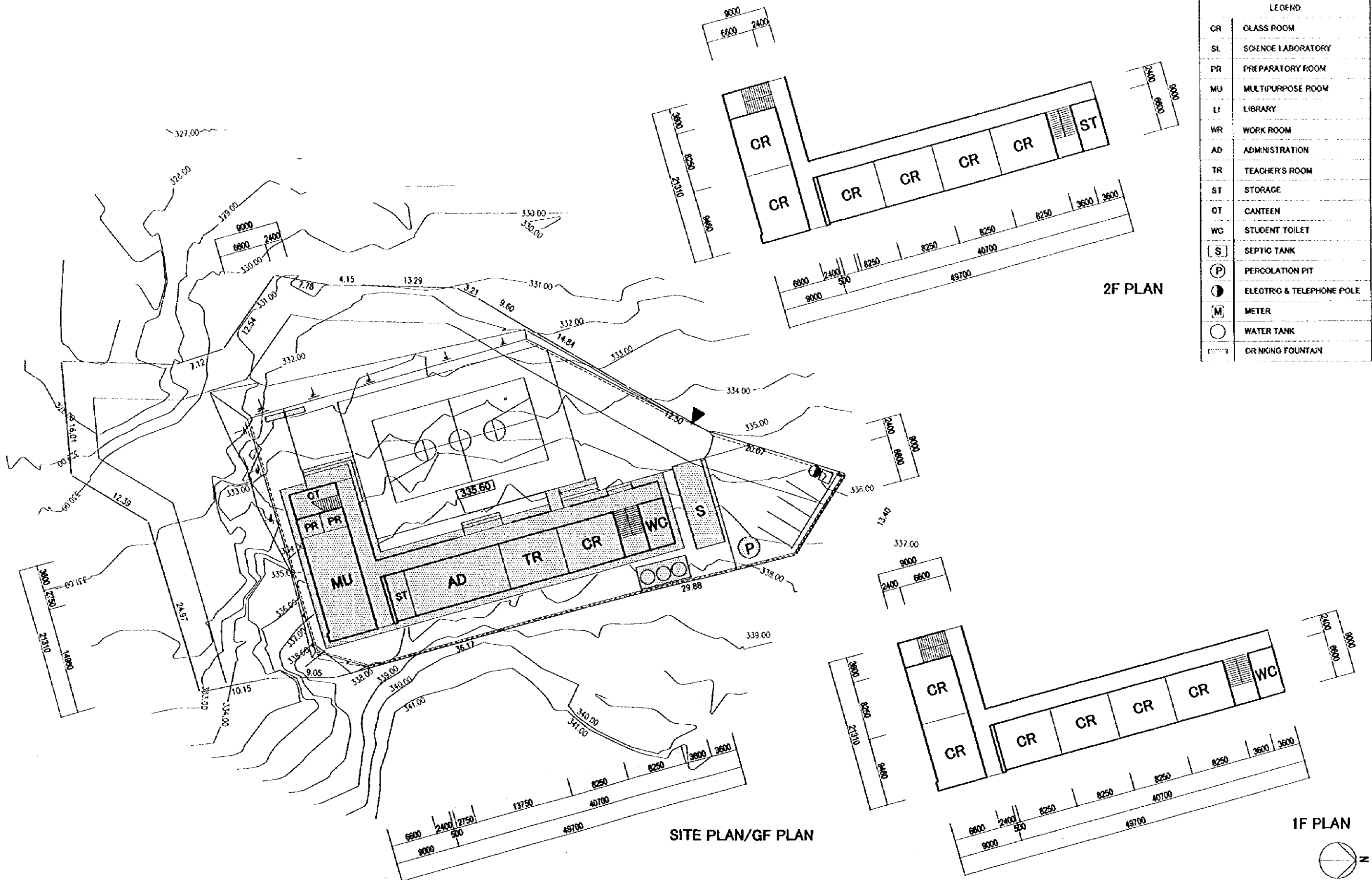
LEGEND	
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SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(DF)	DRINKING FOUNTAIN

SITE PLAN/GF PLAN

1F PLAN

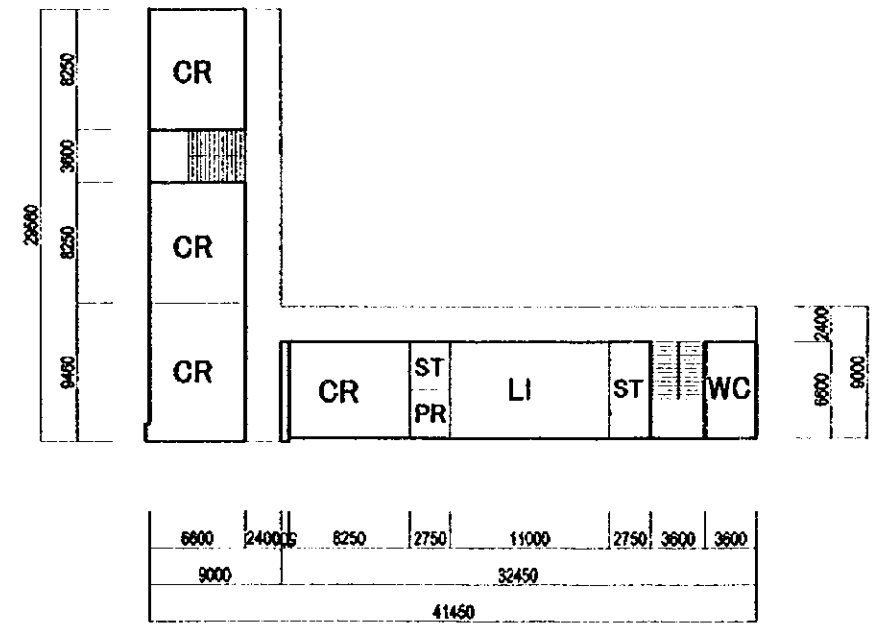
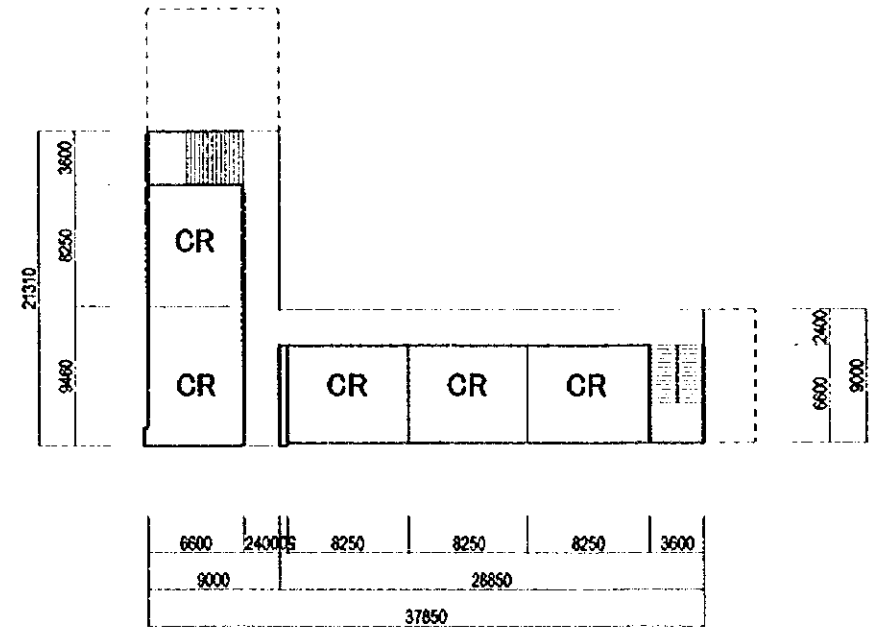
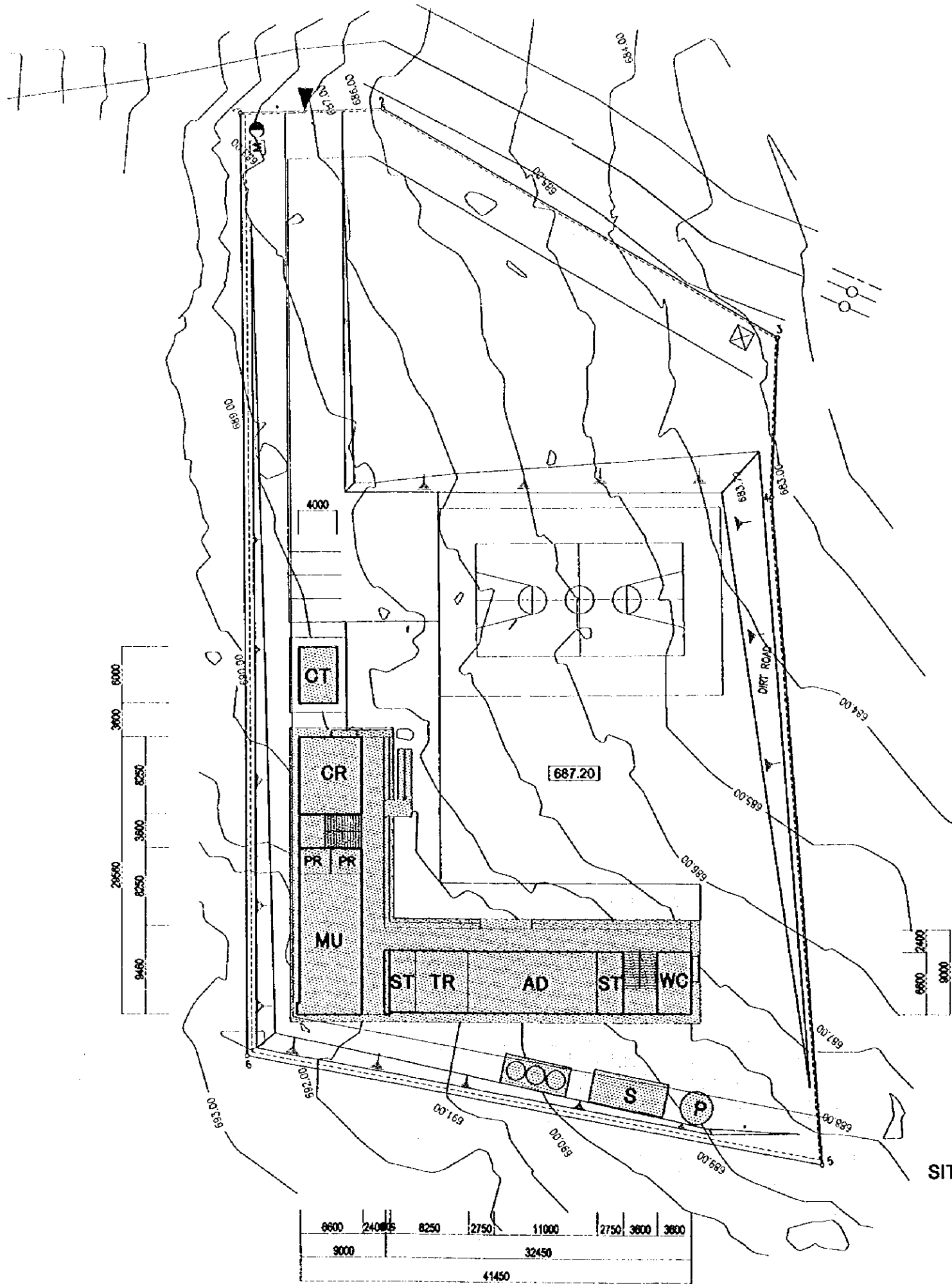
2F PLAN

Dotted areas are undertaken by Japanese side.



Dotted areas are undertaken by Japanese side.

SITE PLAN/PLAN S = 1 : 500
No.16 Beit Liqia

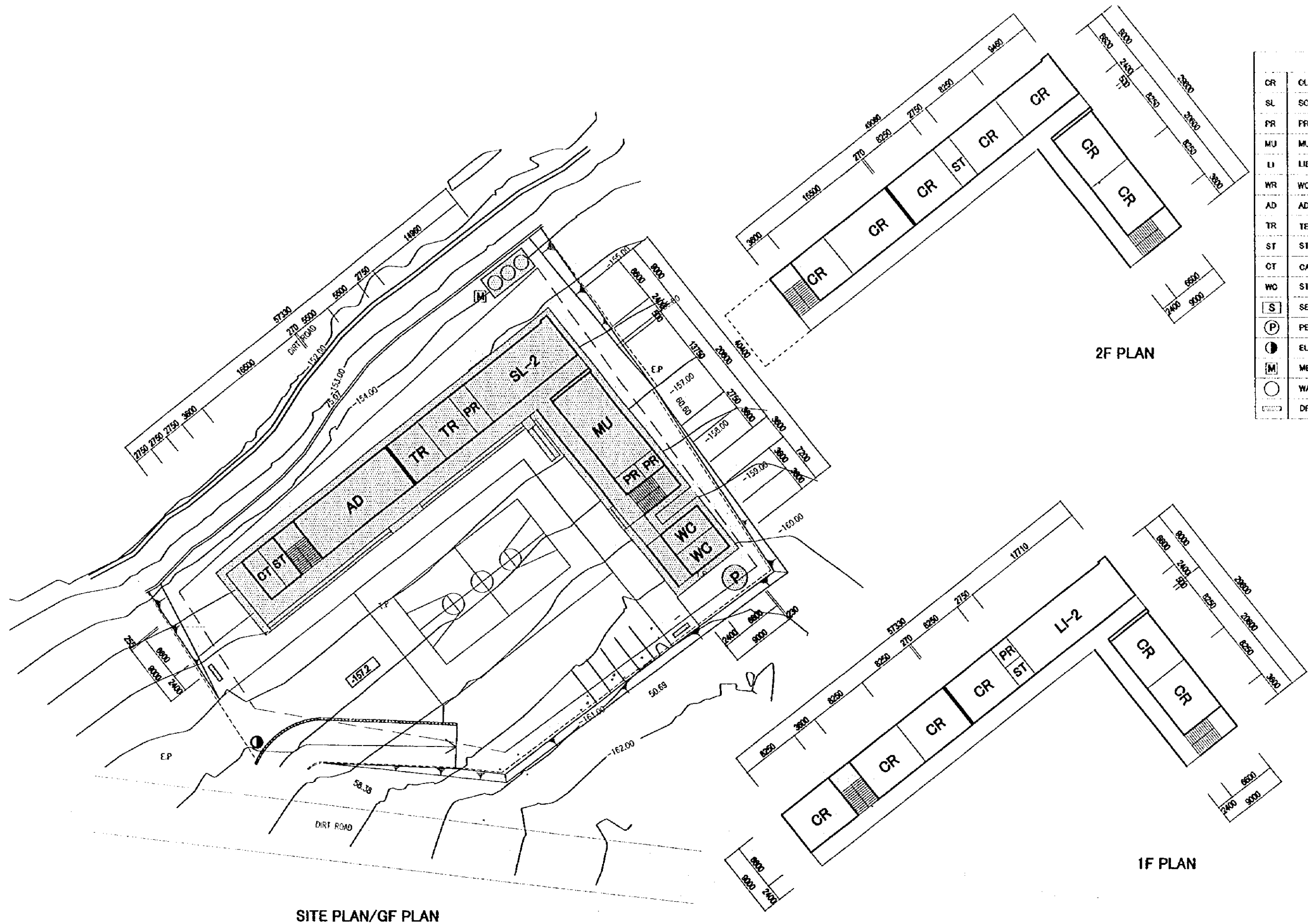


LEGEND	
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SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
[P]	PERCOLATION PIT
[E]	ELECTRIC & TELEPHONE POLE
[M]	METER
[W]	WATER TANK
[F]	DRINKING FOUNTAIN

Dotted areas are undertaken by Japanese side.



SITE PLAN/PLAN S = 1 : 500
No.17B Anata

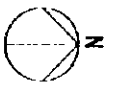


LEGEND	
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SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
[P]	PERCOLATION PIT
[E]	ELECTRIC & TELEPHONE POLE
[M]	METER
[W]	WATER TANK
[F]	DRINKING FOUNTAIN

SITE PLAN/GF PLAN

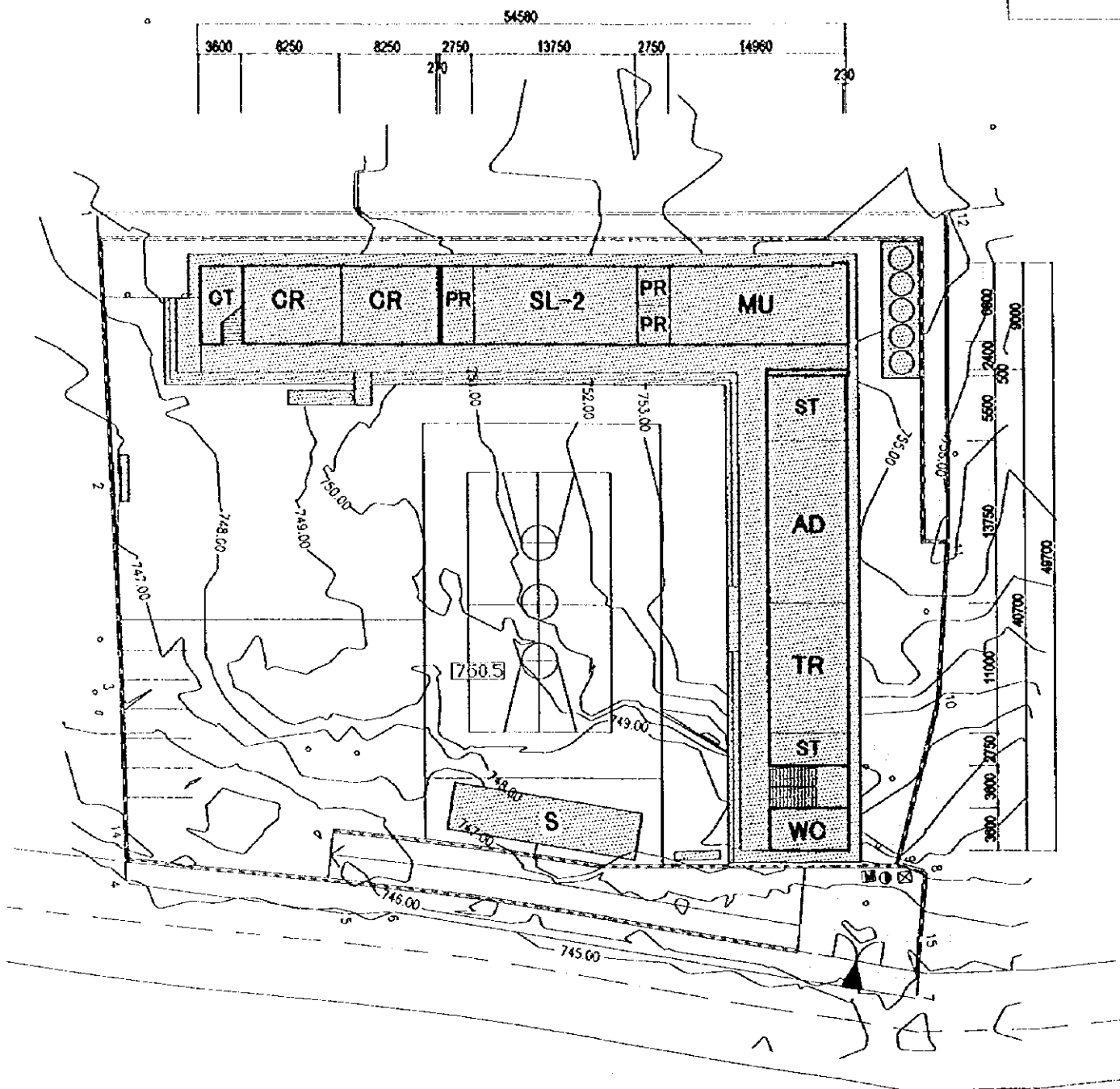
2F PLAN

1F PLAN



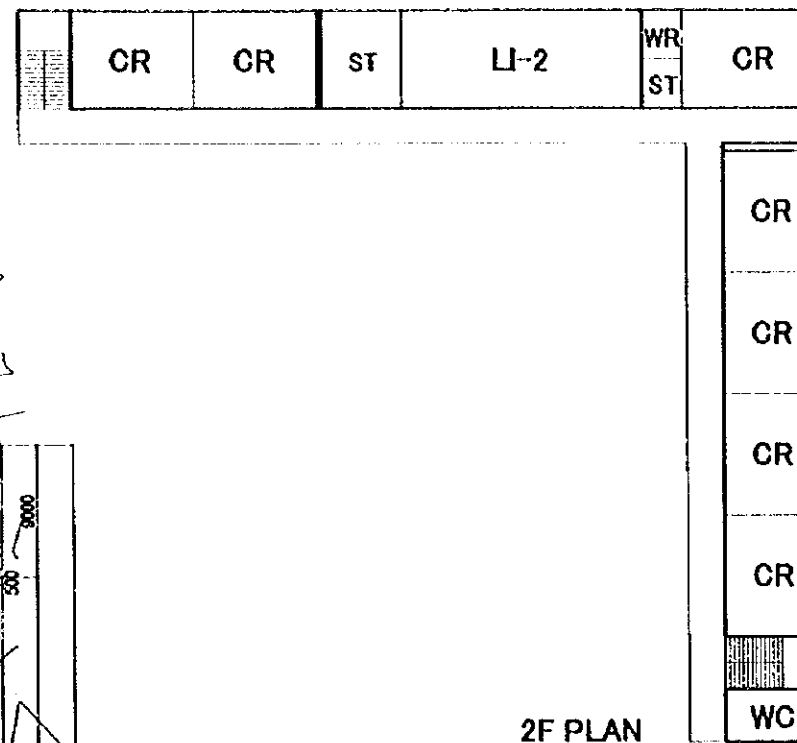
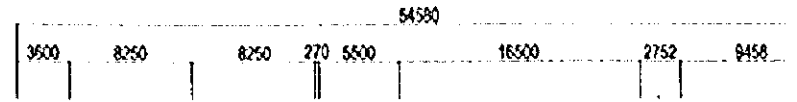
Dotted areas are undertaken by Japanese side.

SITE PLAN/PLAN S = 1 : 500
No.18 Al-Nwai'meh

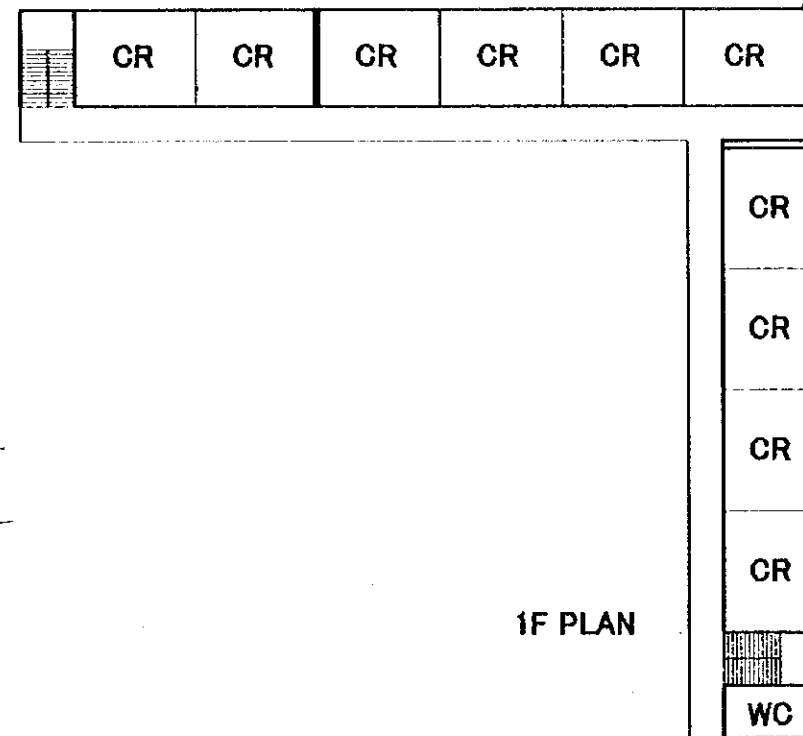
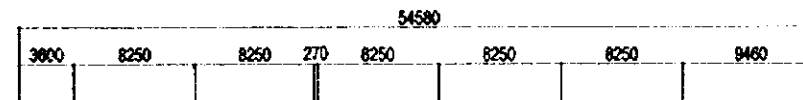


SITE PLAN/GF PLAN

Dotted areas are undertaken by Japanese side.

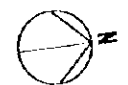


2F PLAN



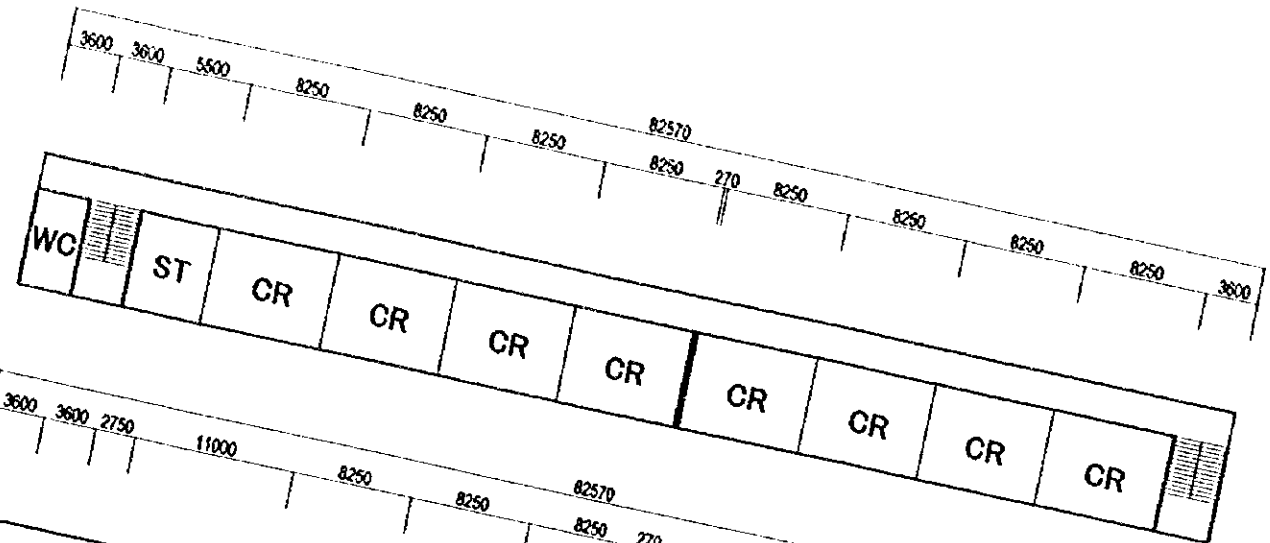
1F PLAN

LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
[P]	PIT
[E]	ELECTRIC & TELEPHONE POLE
[M]	METER
[W]	WATER TANK
[F]	DRINKING FOUNTAIN

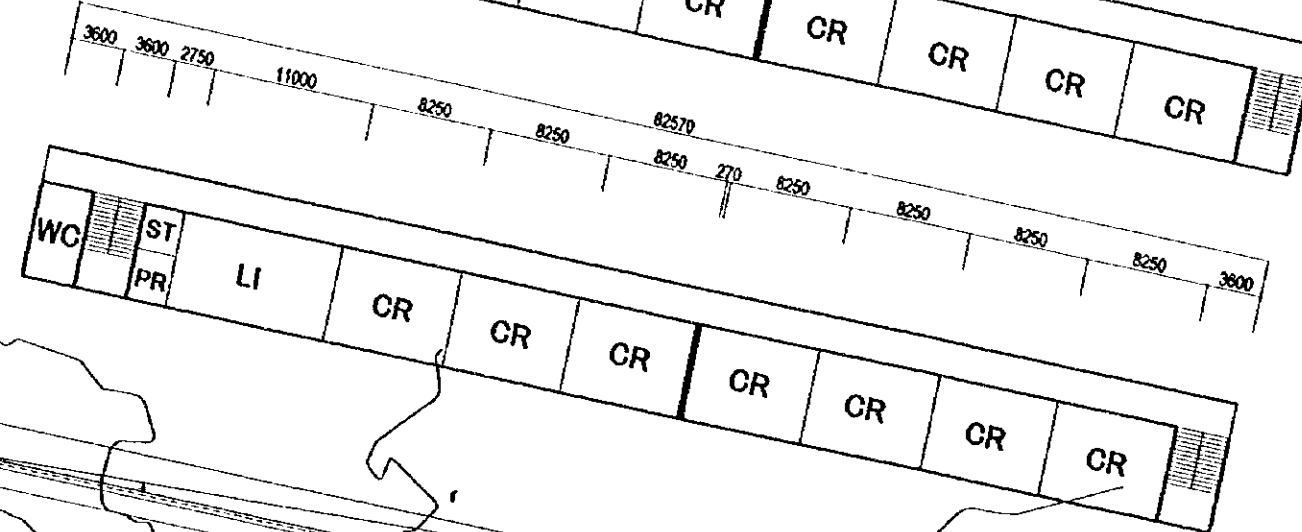


SITE PLAN/PLAN S = 1 : 500
No.19B Al-Mahd

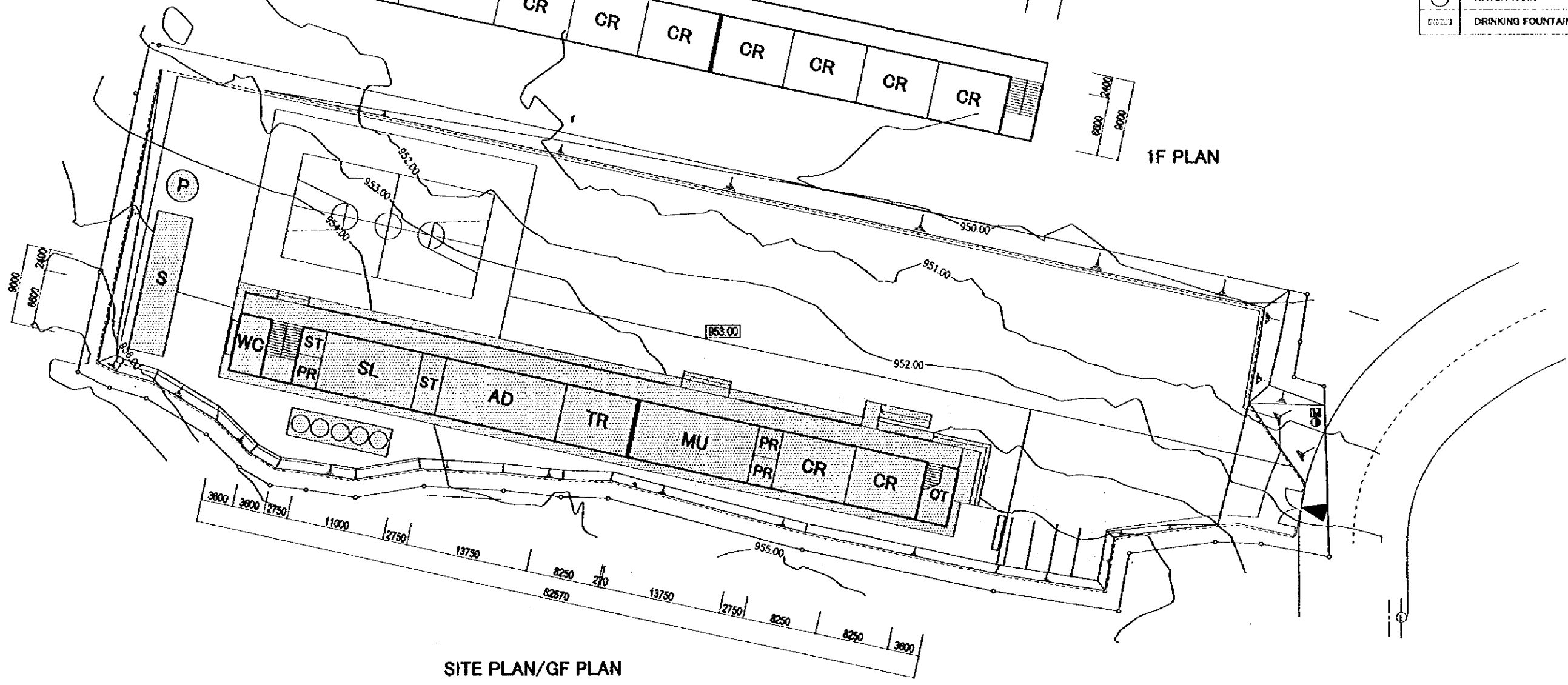
LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(F)	DRINKING FOUNTAIN



2F PLAN



1F PLAN



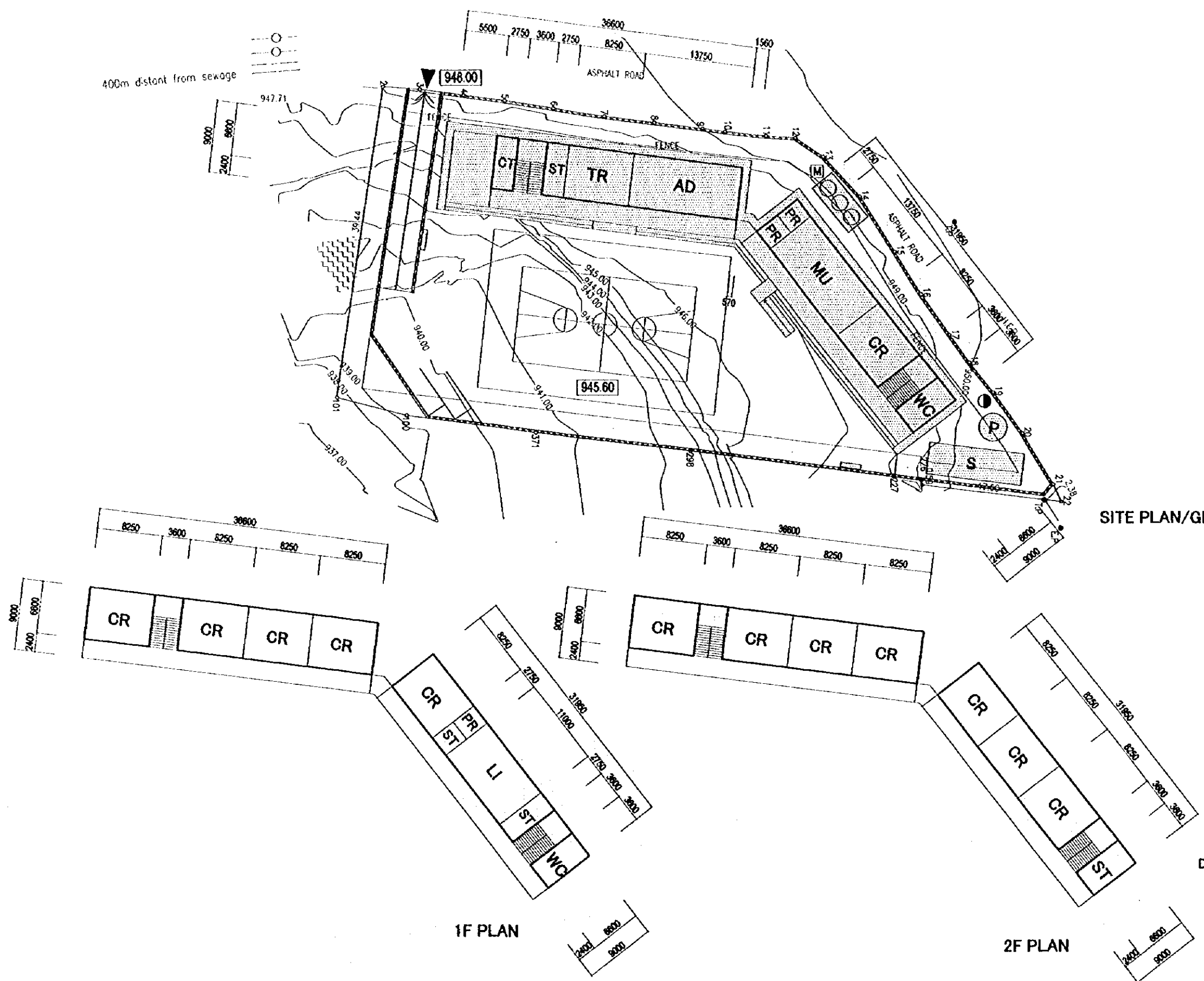
SITE PLAN/GF PLAN

Dotted areas are undertaken by Japanese side.

SITE PLAN/PLAN S = 1 : 500
No.20B Sai'r



LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WO	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(●)	ELECTRIC & TELEPHONE POLE
(M)	METER
(○)	WATER TANK
(□)	DRINKING FOUNTAIN

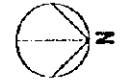


SITE PLAN/GF PLAN

1F PLAN

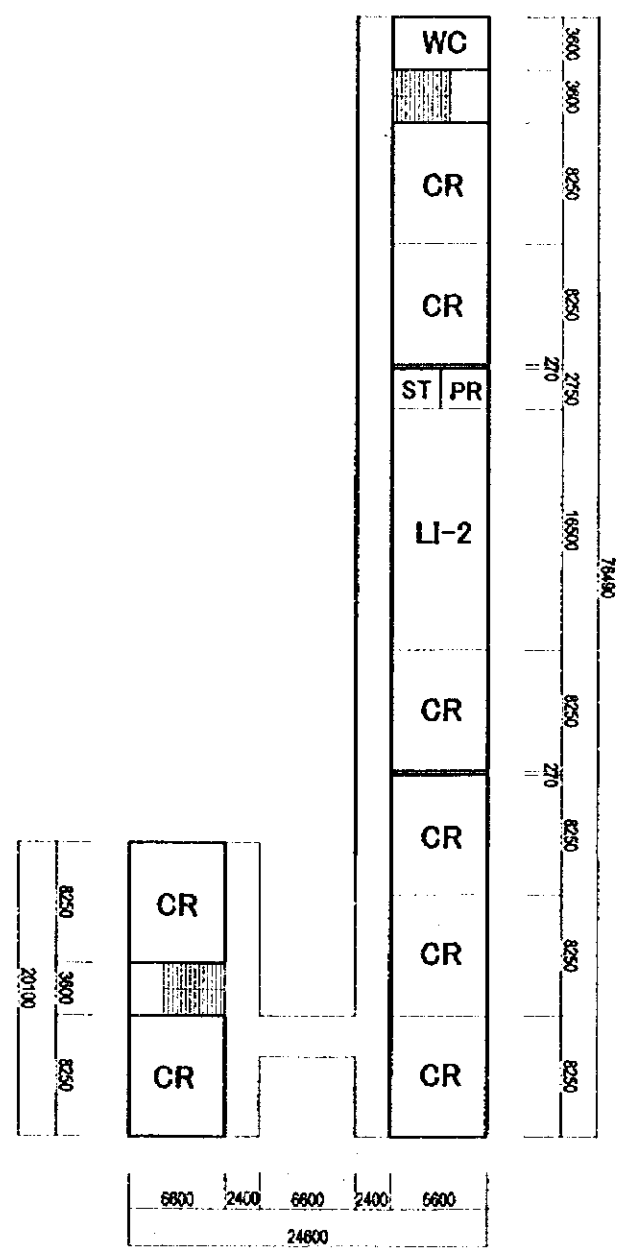
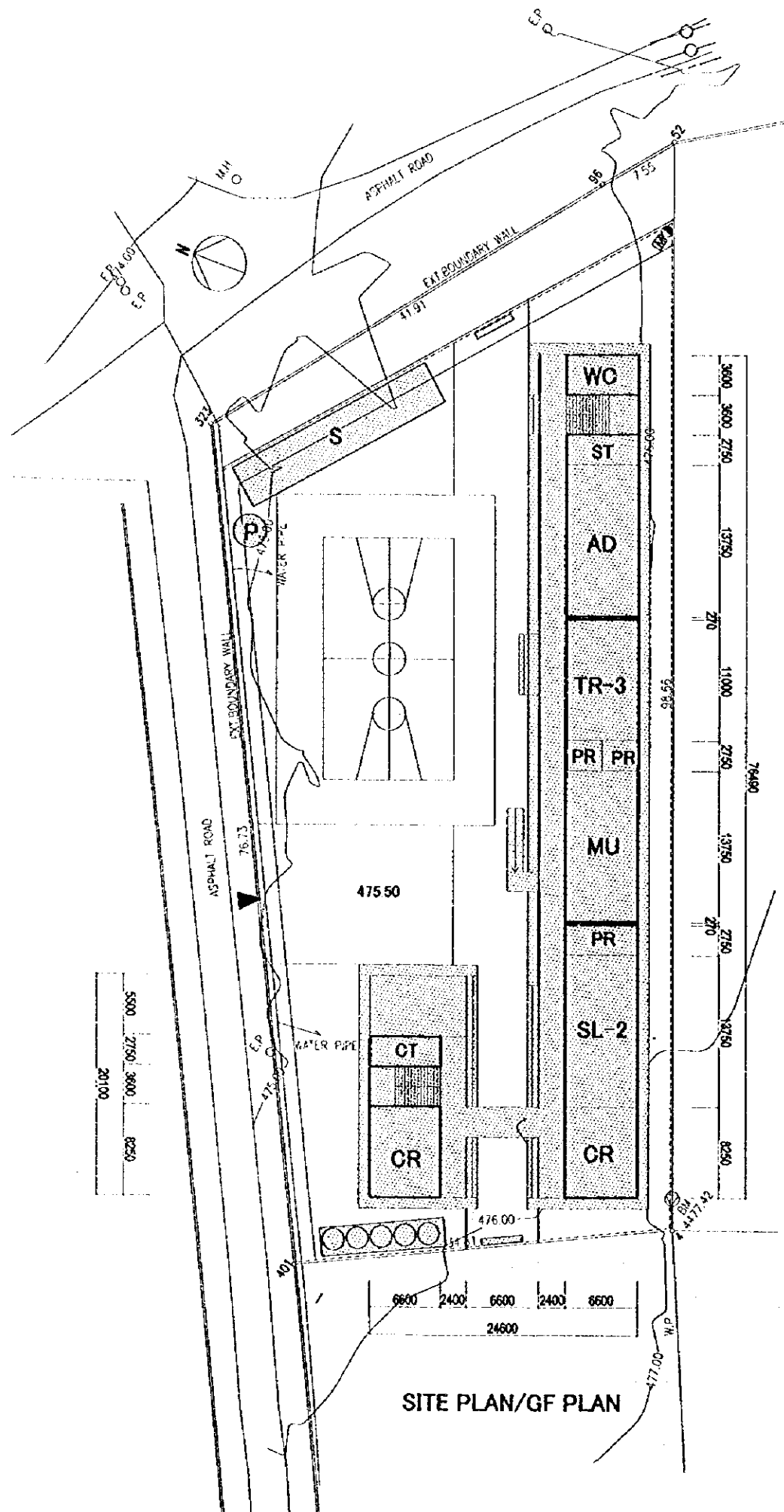
2F PLAN

Dotted areas are undertaken by Japanese side.

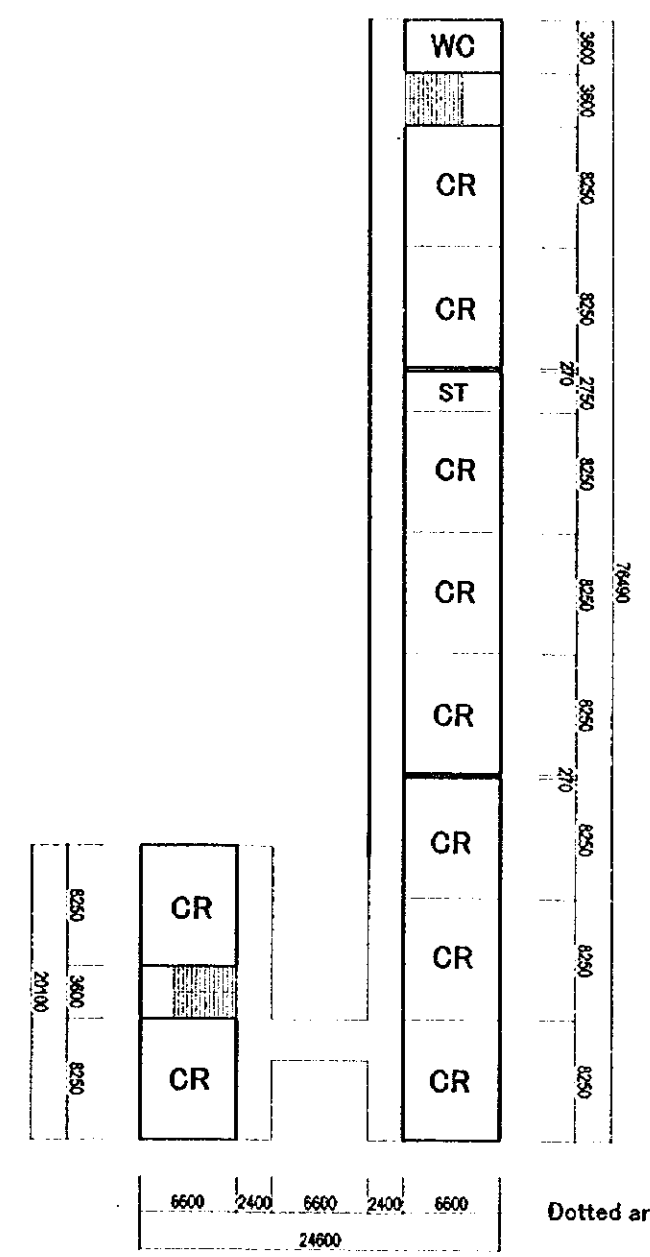


SITE PLAN/PLAN S = 1 : 500
No.21B Al-Moqata'ah

LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(F)	DRINKING FOUNTAIN



1F PLAN

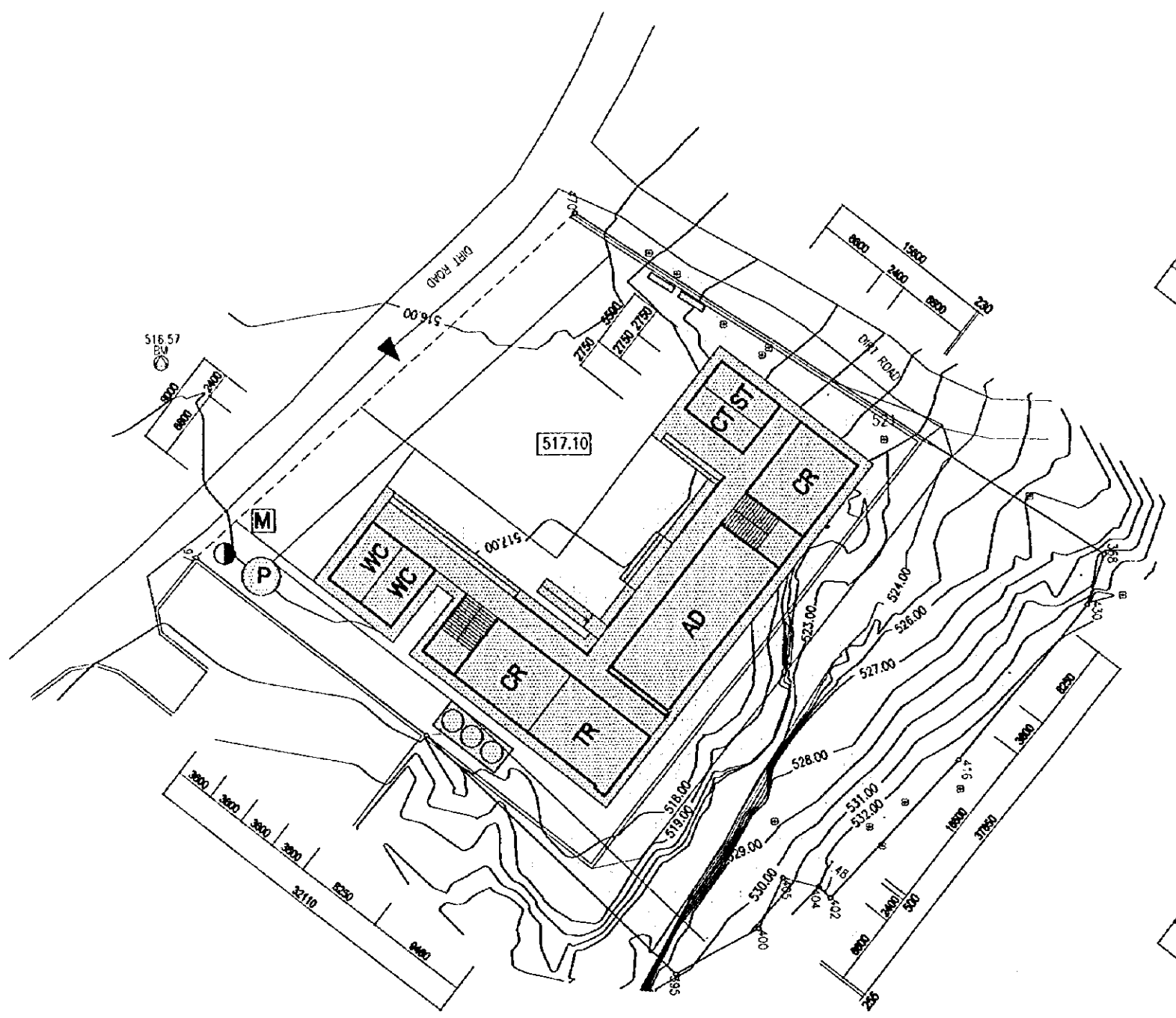


2F PLAN

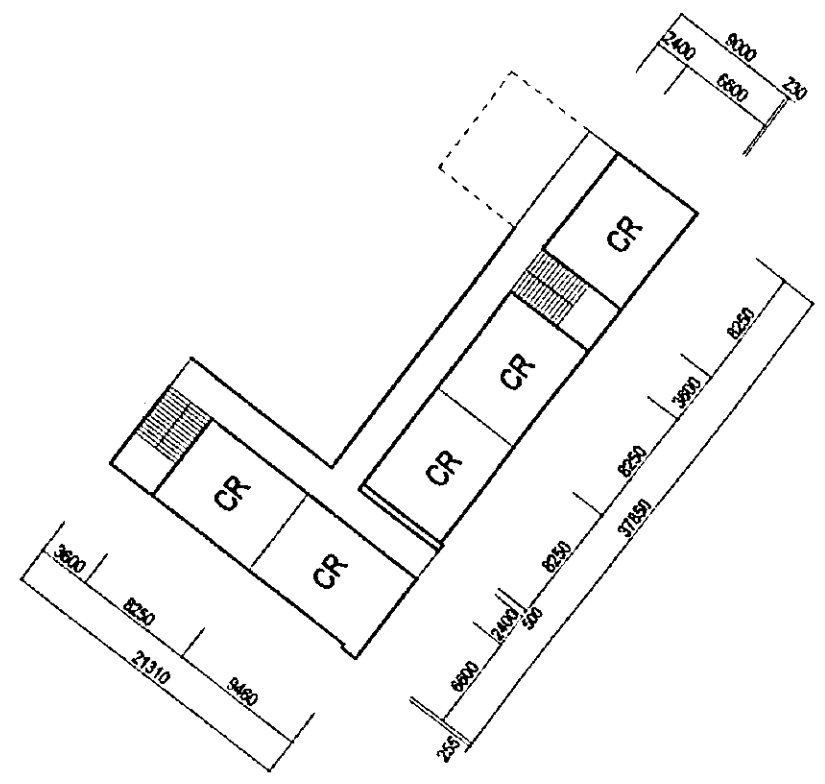
Dotted areas are undertaken by Japanese side.



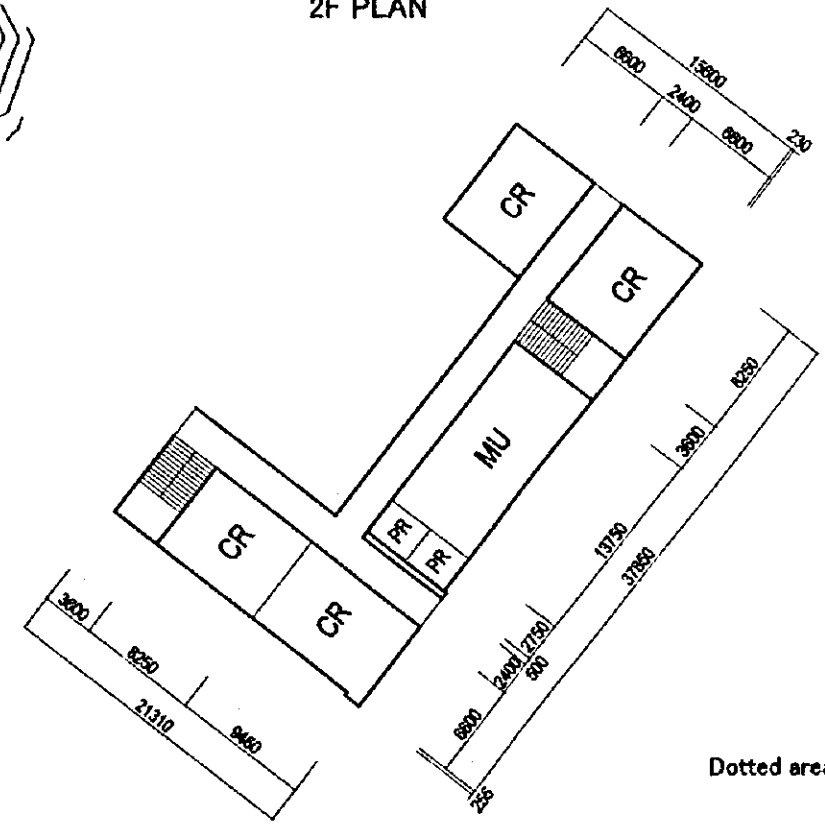
LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
OT	CANTEEN
WO	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(F)	DRINKING FOUNTAIN



SITE PLAN/GF PLAN

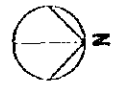


2F PLAN

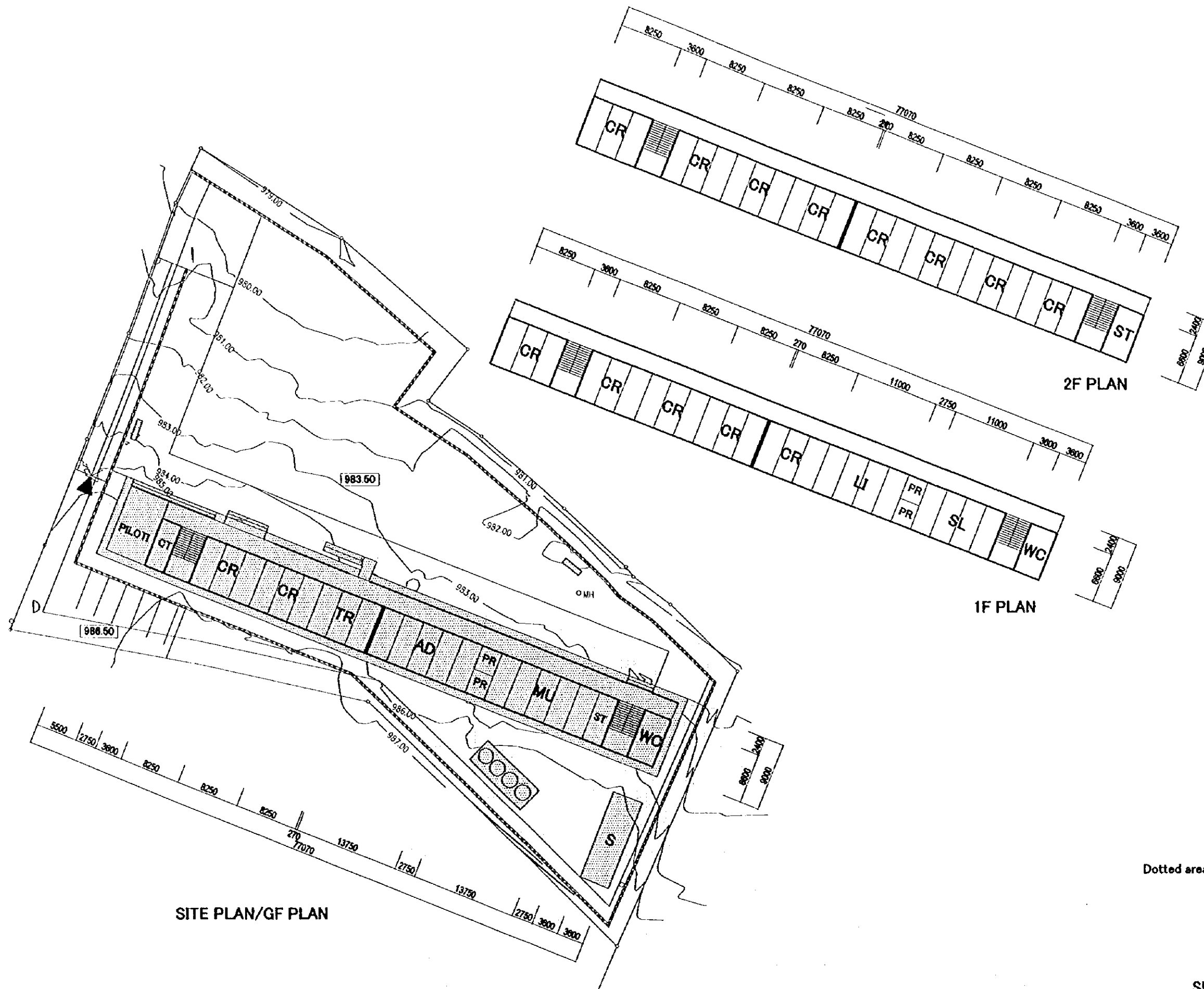


1F PLAN

Dotted areas are undertaken by Japanese side.



SITE PLAN/PLAN S = 1 : 500
No.23 kharas

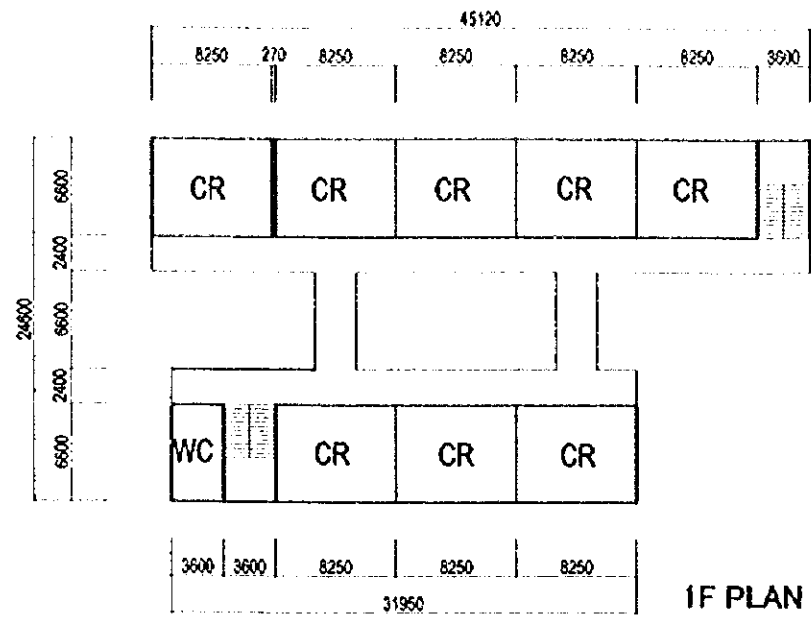


LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(F)	DRINKING FOUNTAIN

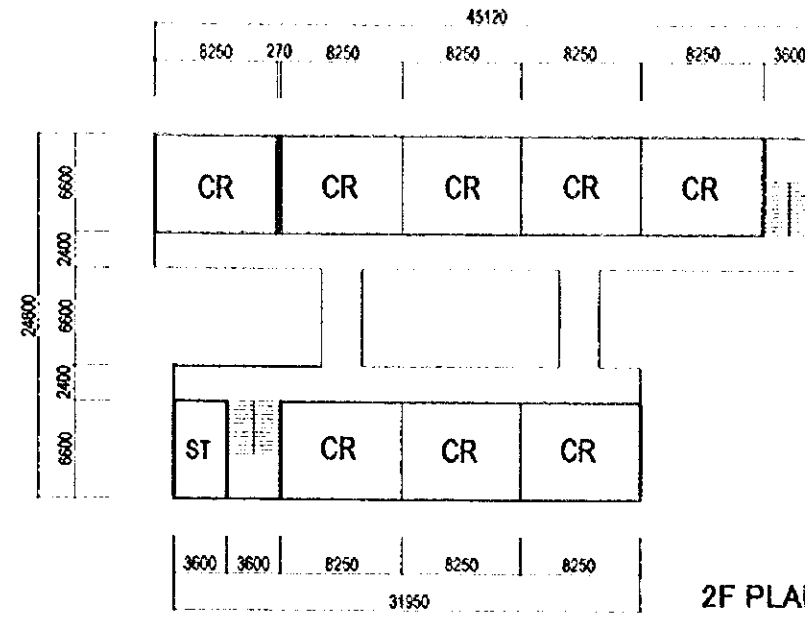
Dotted areas are undertaken by Japanese side.



SITE PLAN/GF PLAN

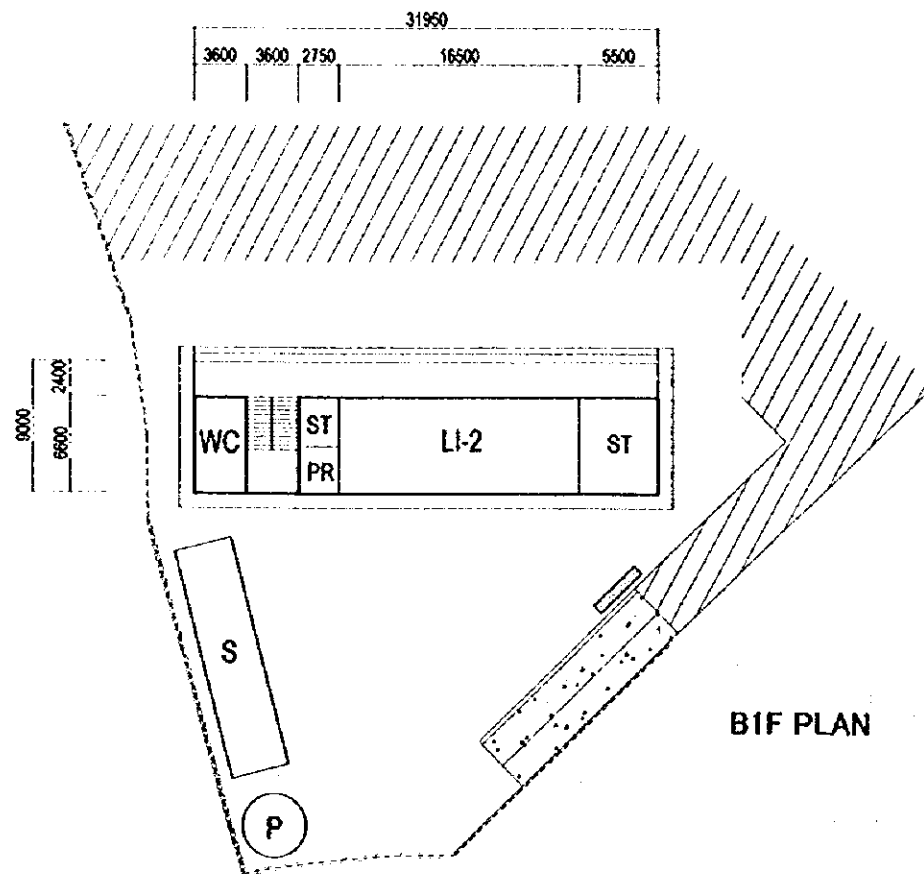


1F PLAN

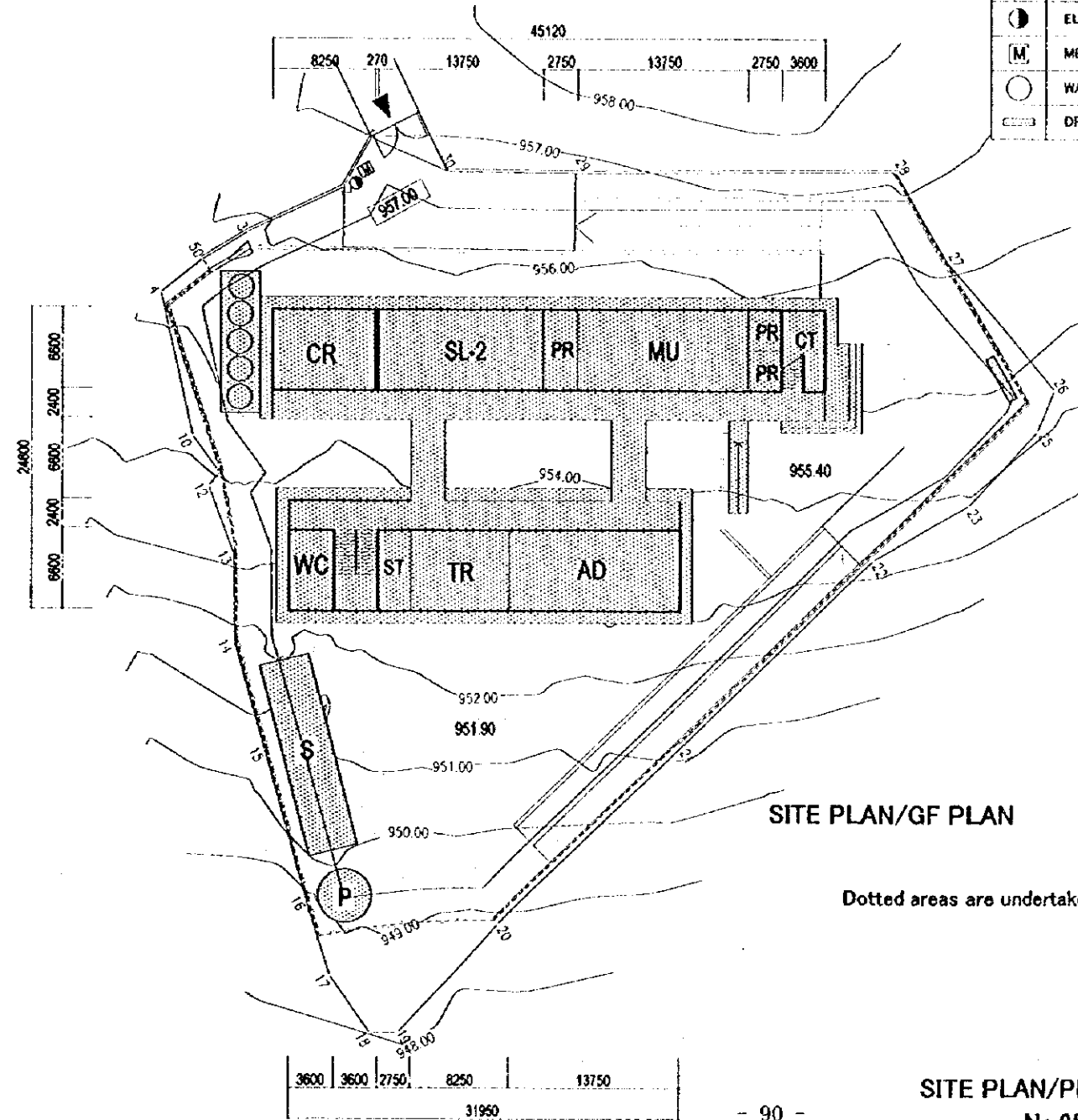


2F PLAN

LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
⊙	ELECTRIC & TELEPHONE POLE
(M)	METER
○	WATER TANK
☉	DRINKING FOUNTAIN



BIF PLAN

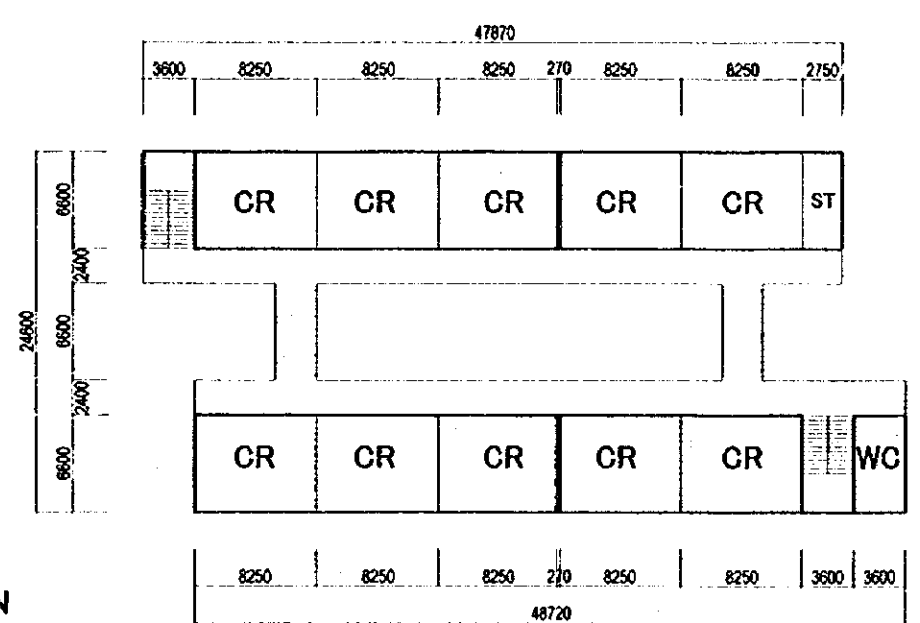
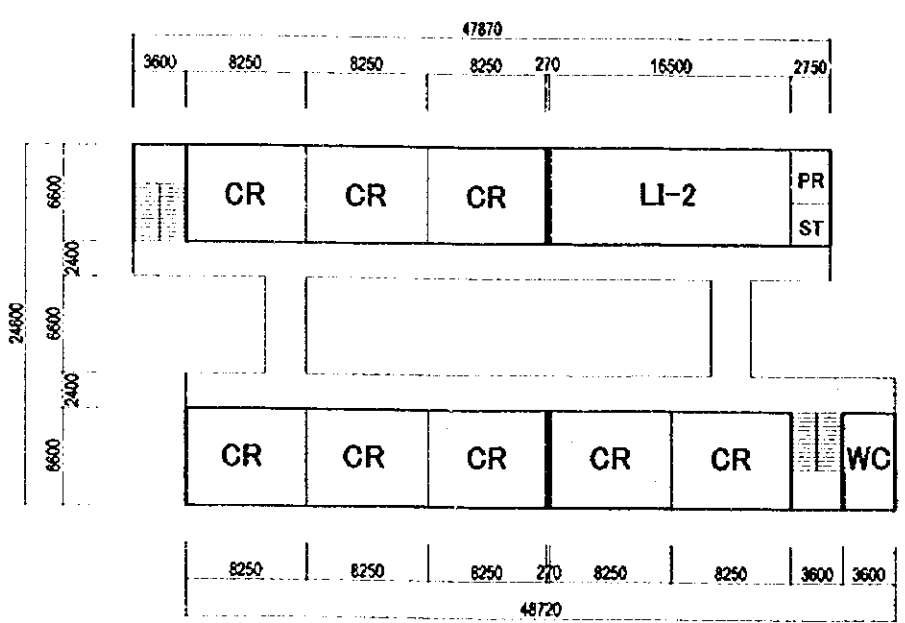
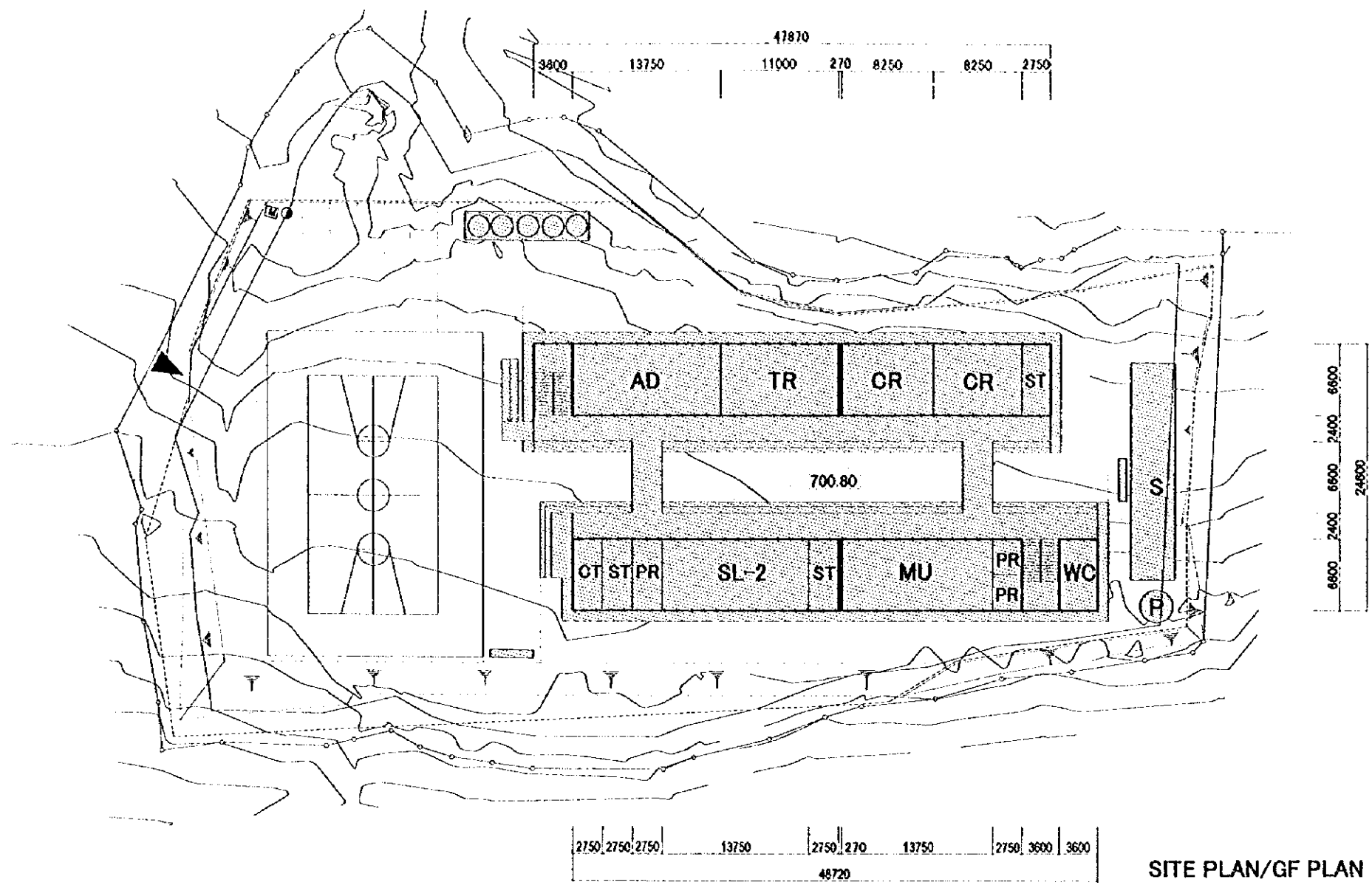


SITE PLAN/GF PLAN

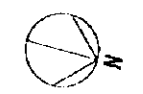
Dotted areas are undertaken by Japanese side.



SITE PLAN/PLAN S = 1 : 500
No.25B Abu-Romman

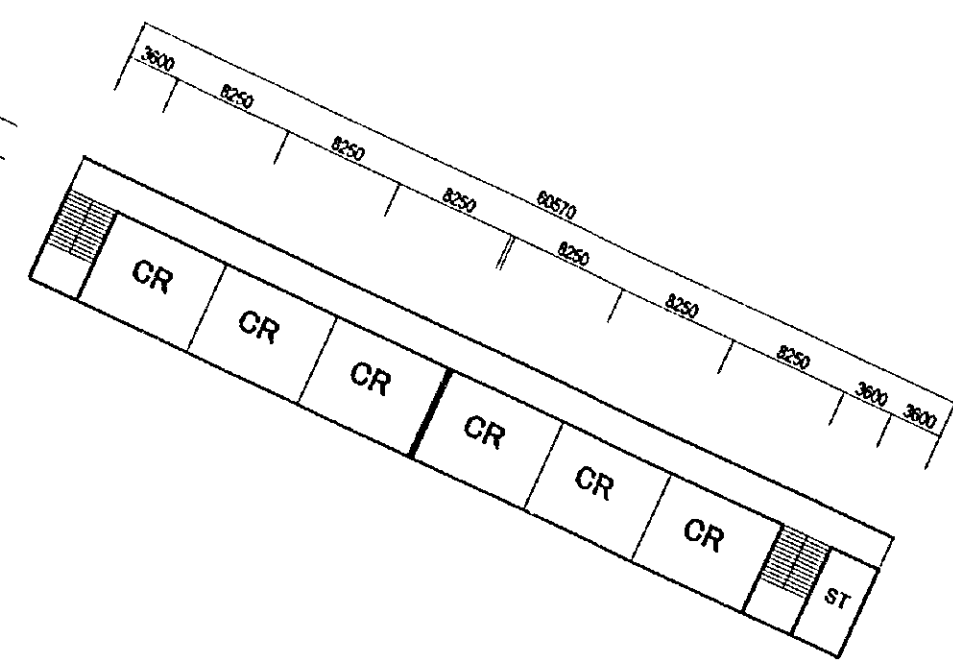


Dotted areas are undertaken by Japanese side.

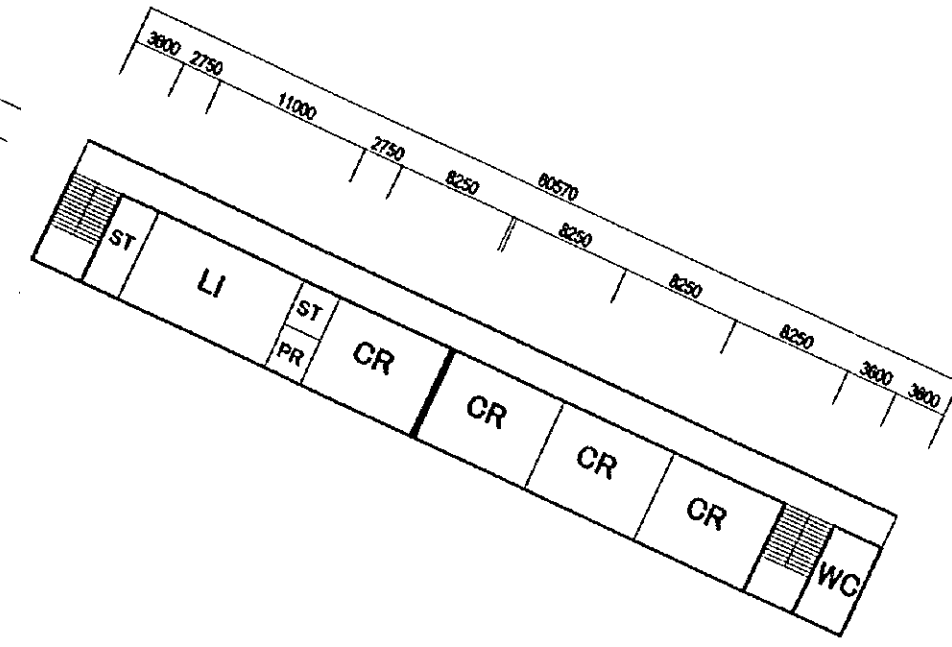


SITE PLAN/PLAN S = 1 : 500
No.26B Mo'tah

LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(DF)	DRINKING FOUNTAIN

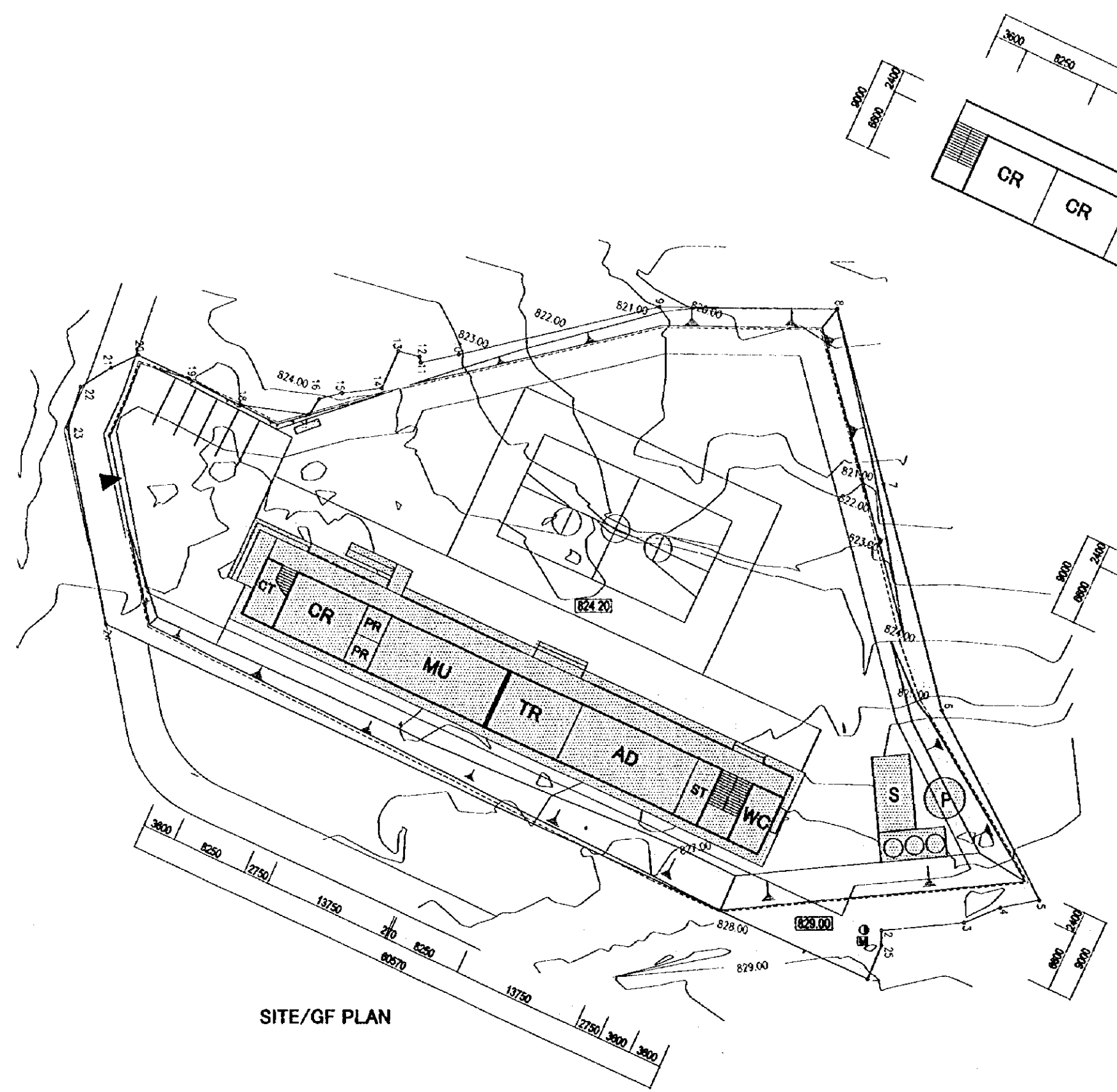


2F PLAN

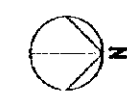


1F PLAN

Dotted areas are undertaken by Japanese side.

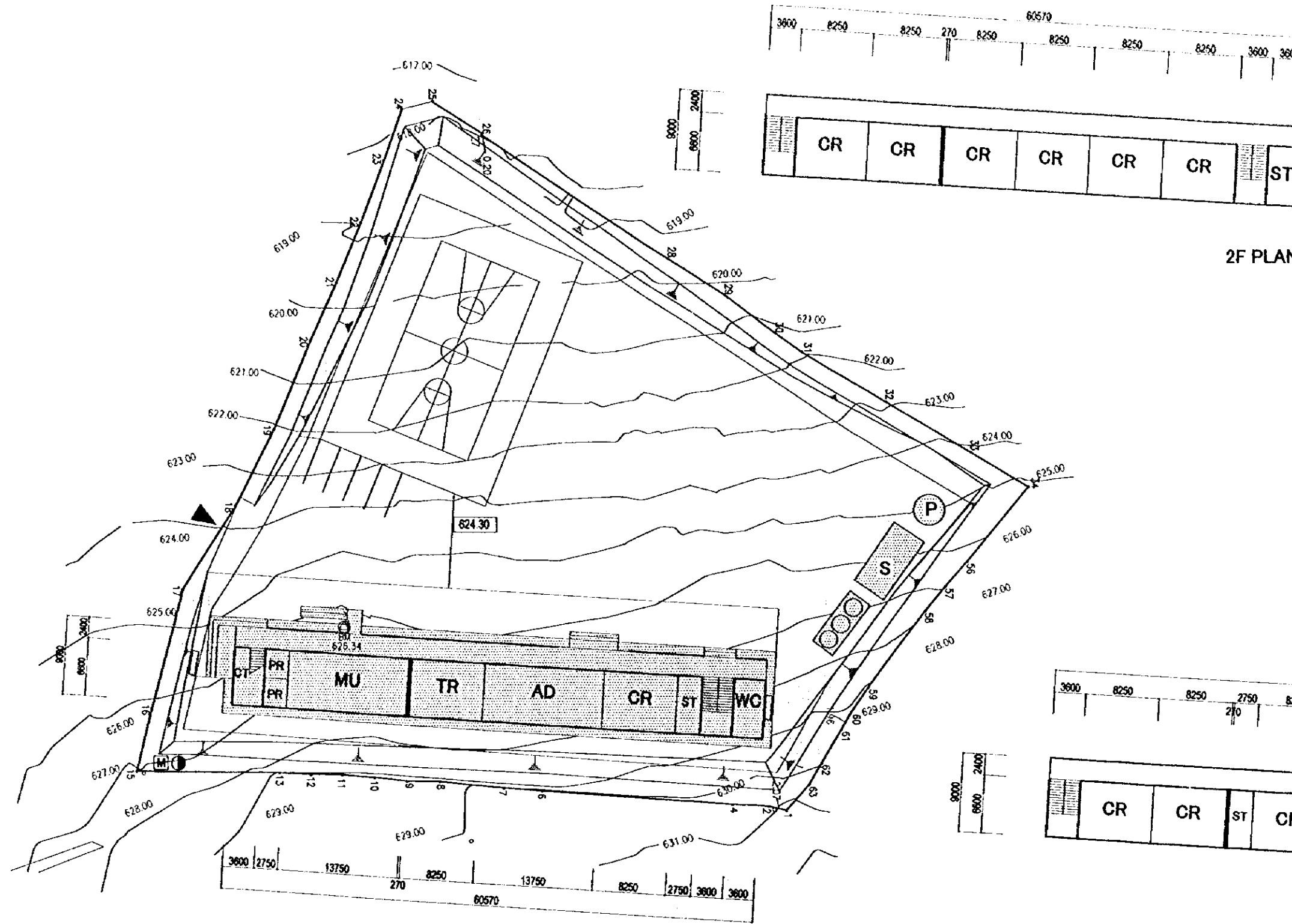


SITE/GF PLAN



SITE PLAN/PLAN S = 1 : 500
No.27 Raqa Al-Jadidah

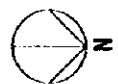
LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
CT	CANTEEN
WC	STUDENT TOILET
[S]	SEPTIC TANK
(P)	PERCOLATION PIT
(E)	ELECTRIC & TELEPHONE POLE
(M)	METER
(W)	WATER TANK
(DF)	DRINKING FOUNTAIN



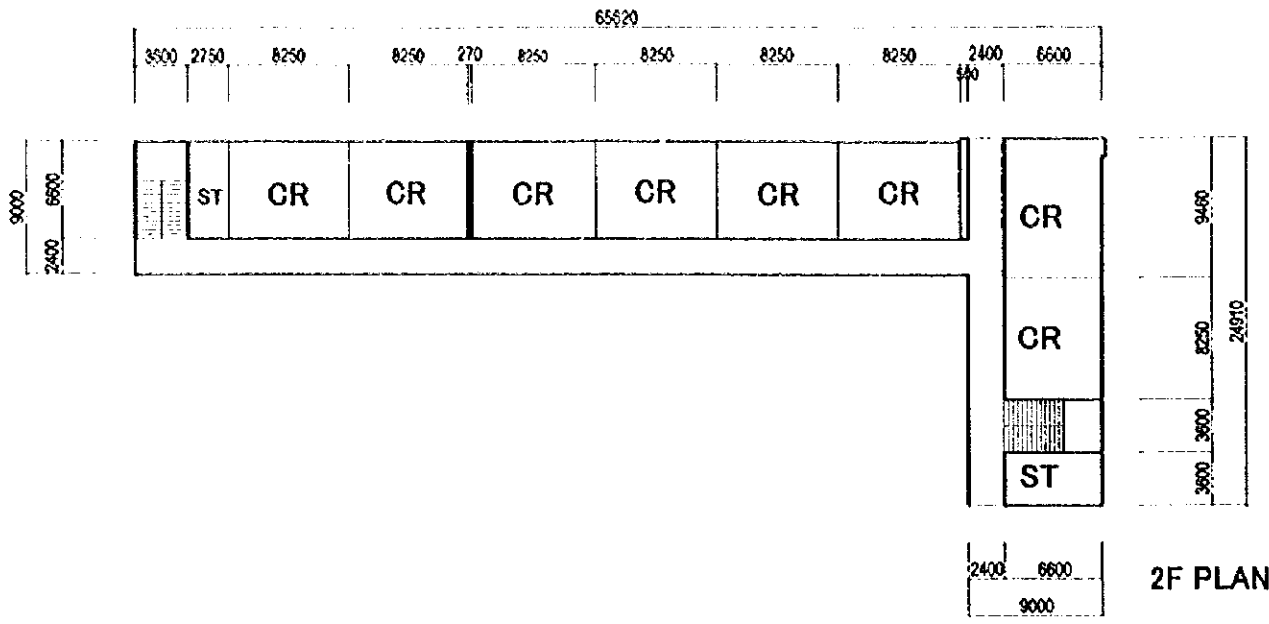
SITE PLAN/GF PLAN

1F PLAN

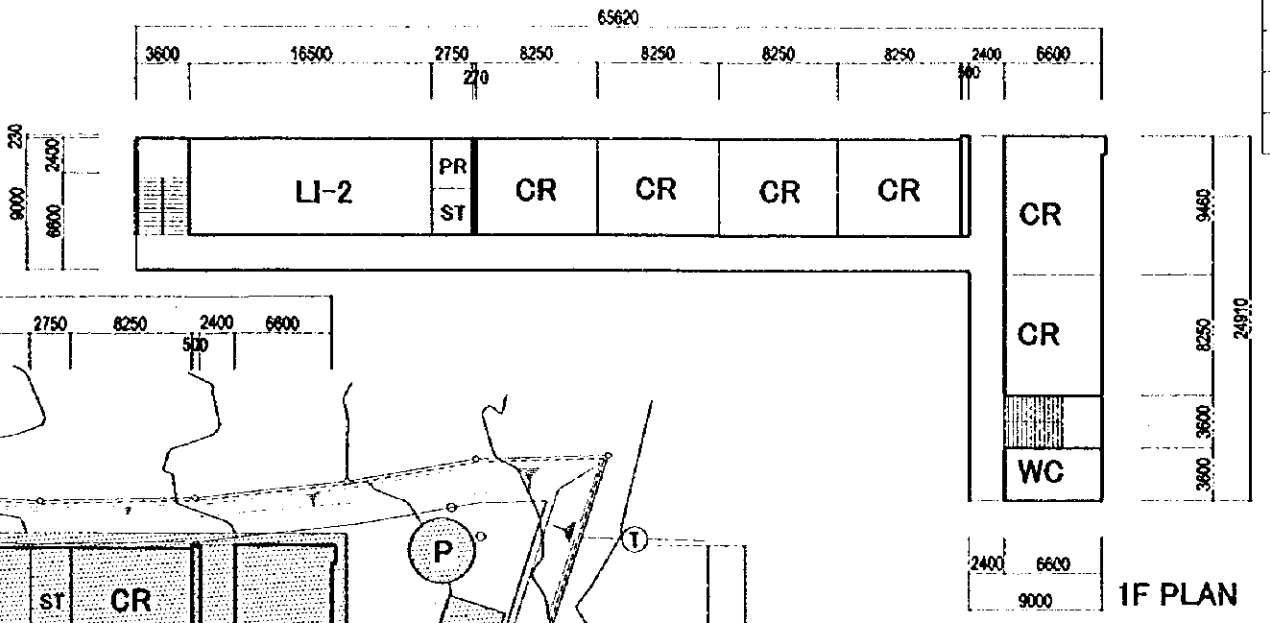
Dotted areas are undertaken by Japanese side.



SITE PLAN/PLAN S = 1 : 500
No.28B Al-Thaheria

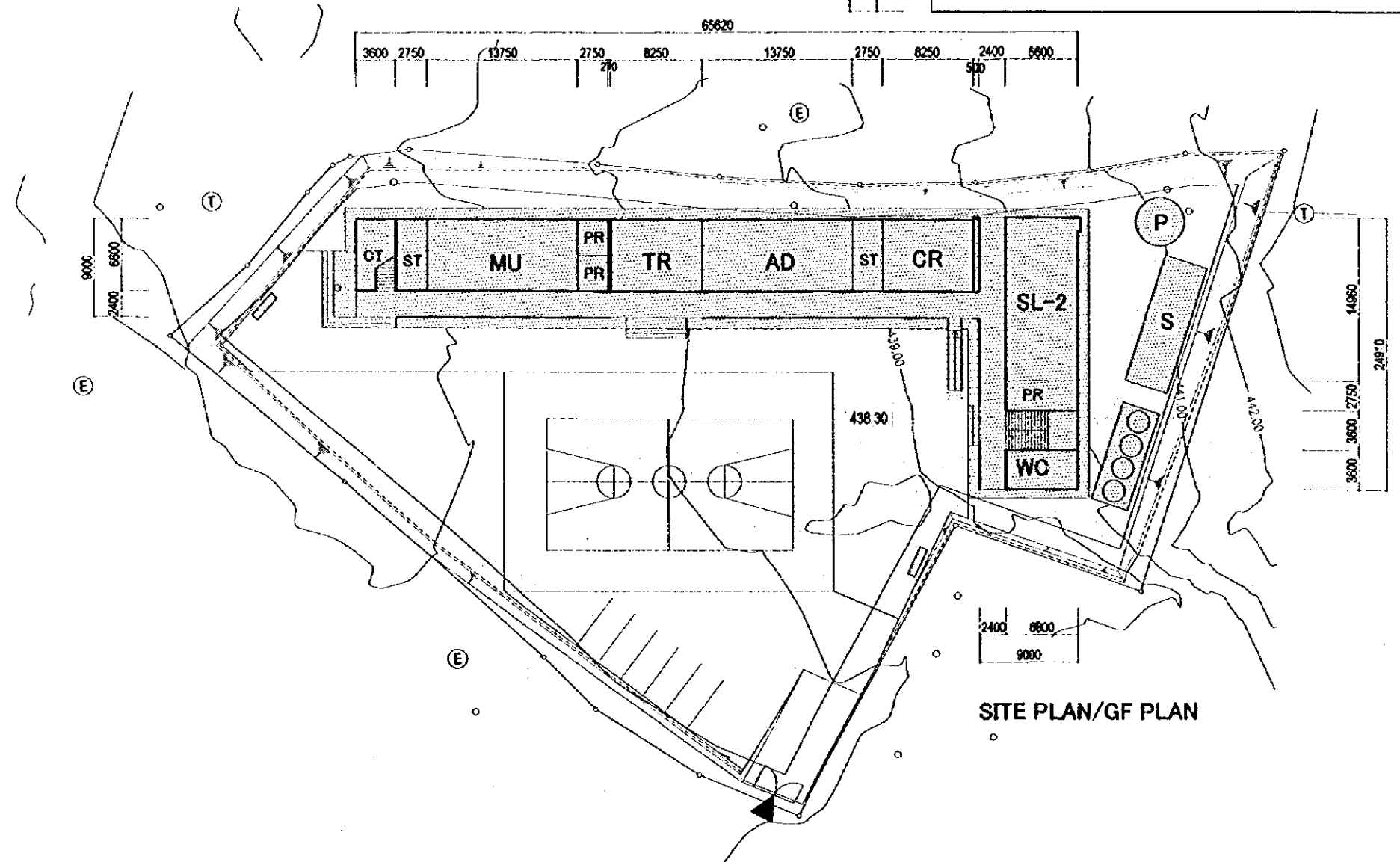


2F PLAN



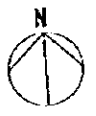
1F PLAN

LEGEND	
CR	CLASS ROOM
SL	SCIENCE LABORATORY
PR	PREPARATORY ROOM
MU	MULTIPURPOSE ROOM
LI	LIBRARY
WR	WORK ROOM
AD	ADMINISTRATION
TR	TEACHER'S ROOM
ST	STORAGE
GT	CANTEEN
WC	STUDENT TOILET
S	SEPTIC TANK
P	PERCOLATION PIT
⊙	ELECTRIC & TELEPHONE POLE
M	METER
○	WATER TANK
⊕	DRINKING FOUNTAIN

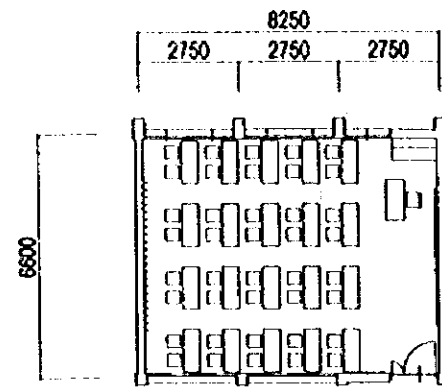


SITE PLAN/GF PLAN

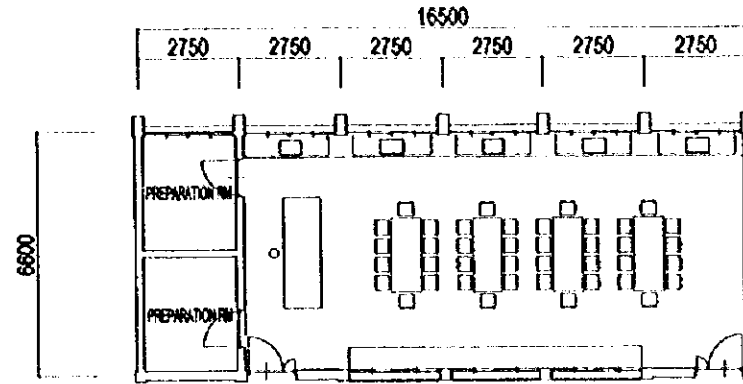
Dotted areas are undertaken by Japanese side.



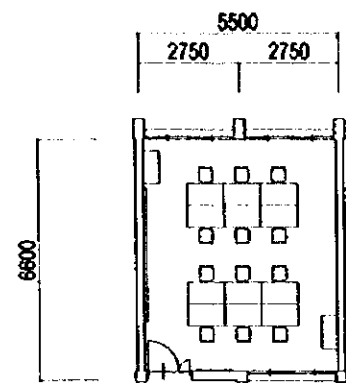
SITE PLAN/PLAN S = 1 : 500
No.29 Ithna



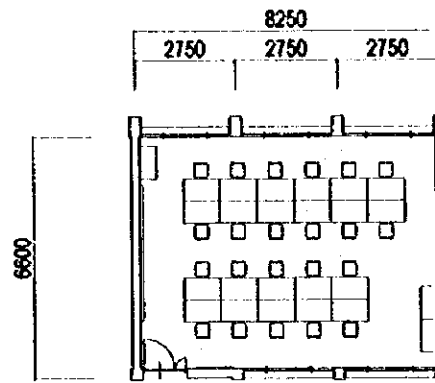
CLASS RM.



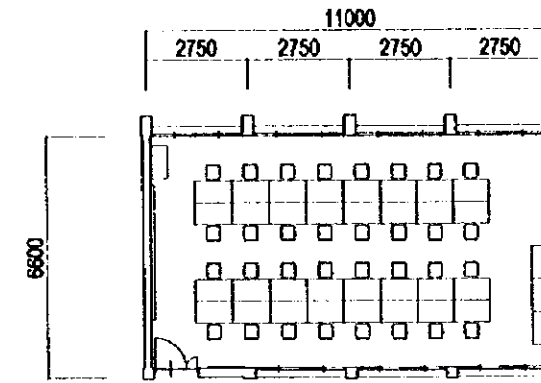
MULTIPURPOSE RM.



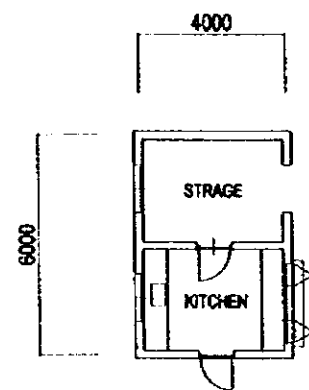
TEACHER'S RM - 1



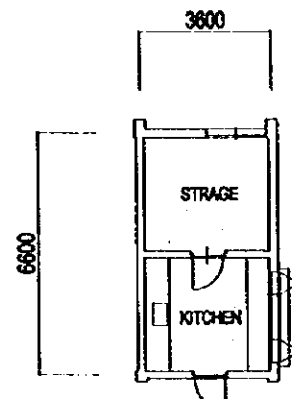
TEACHER'S RM - 2



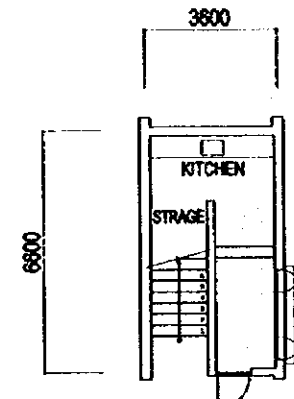
TEACHER'S RM - 3



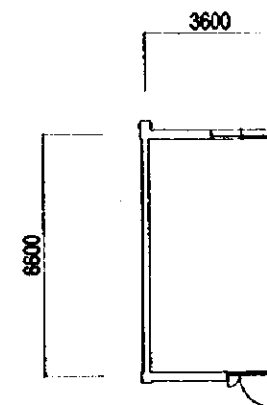
CANTEEN (INDEPENDENT TYPE)



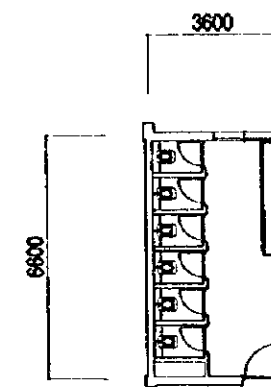
CANTEEN



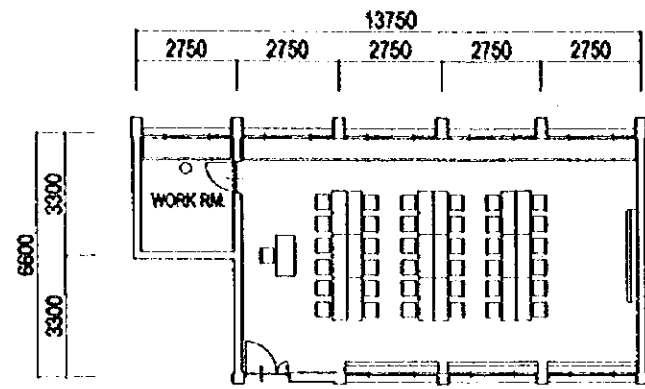
CANTEEN



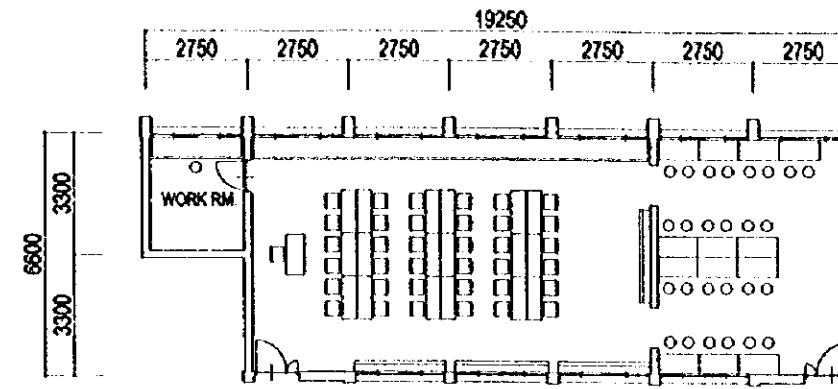
STRAGE



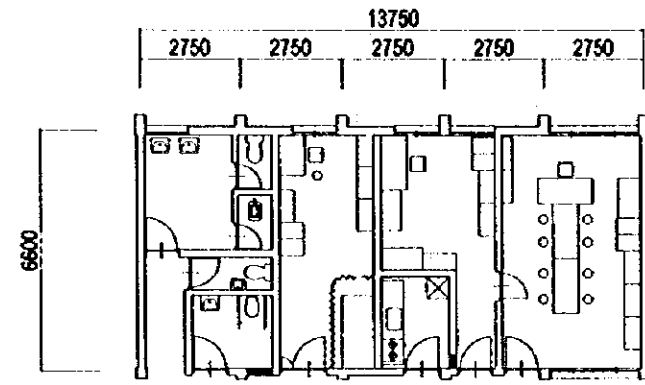
STUDENTS TOILET



LIBRARY - 1



LIBRARY - 2



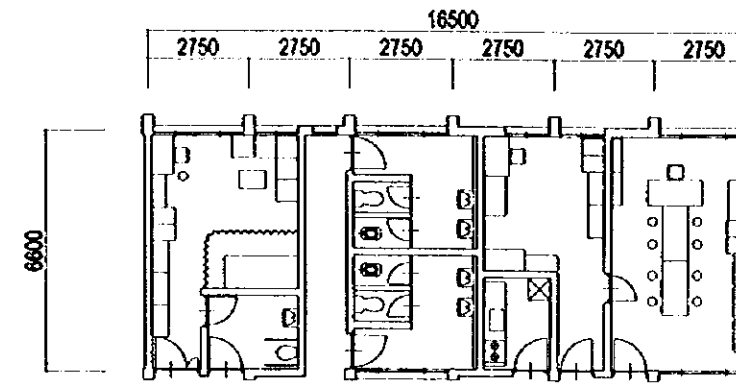
TEACHER'S TOILET
HANDICAPPED TOILET

FIRST AID

SECRETARY'S
RM.

HEADMASTER'S
OFFICE

ADMINISTRATION BLOCK



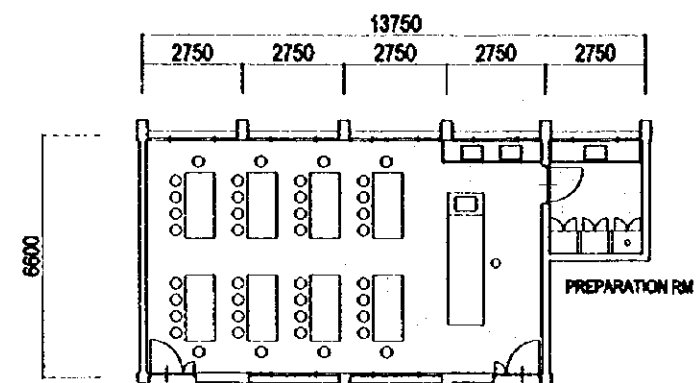
FIRST AID
HANDICAPPED TOILET

TEACHER'S TOILET

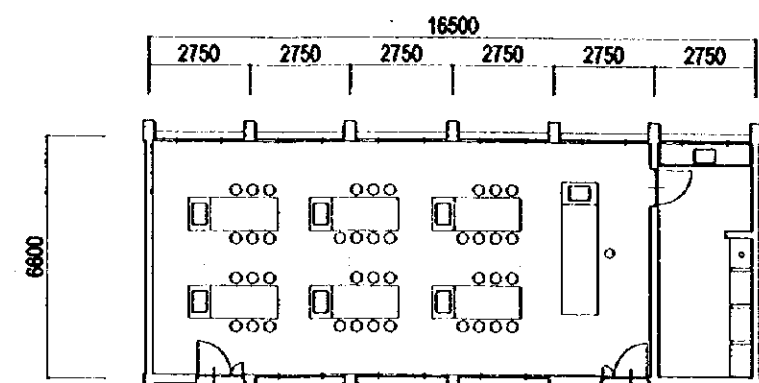
SECRETARY'S
RM.

HEADMASTER'S
OFFICE

ADMINISTRATION BLOCK



SCIENCE LABORATORY - 1

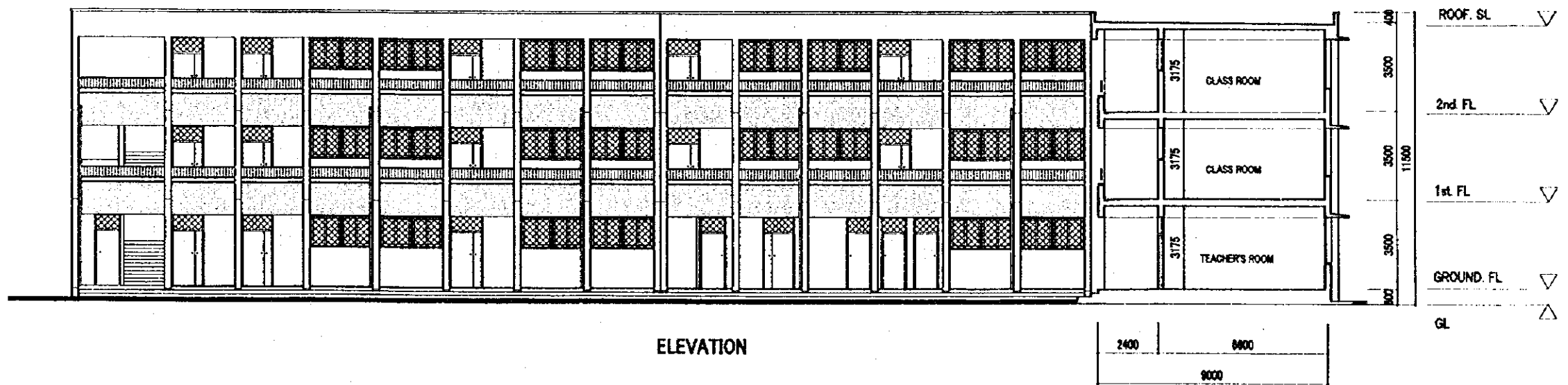


SCIENCE LABORATORY - 2

PREPARATION RM



ELEVATION



ELEVATION

ELEVATION/SECTION S = 1 : 200