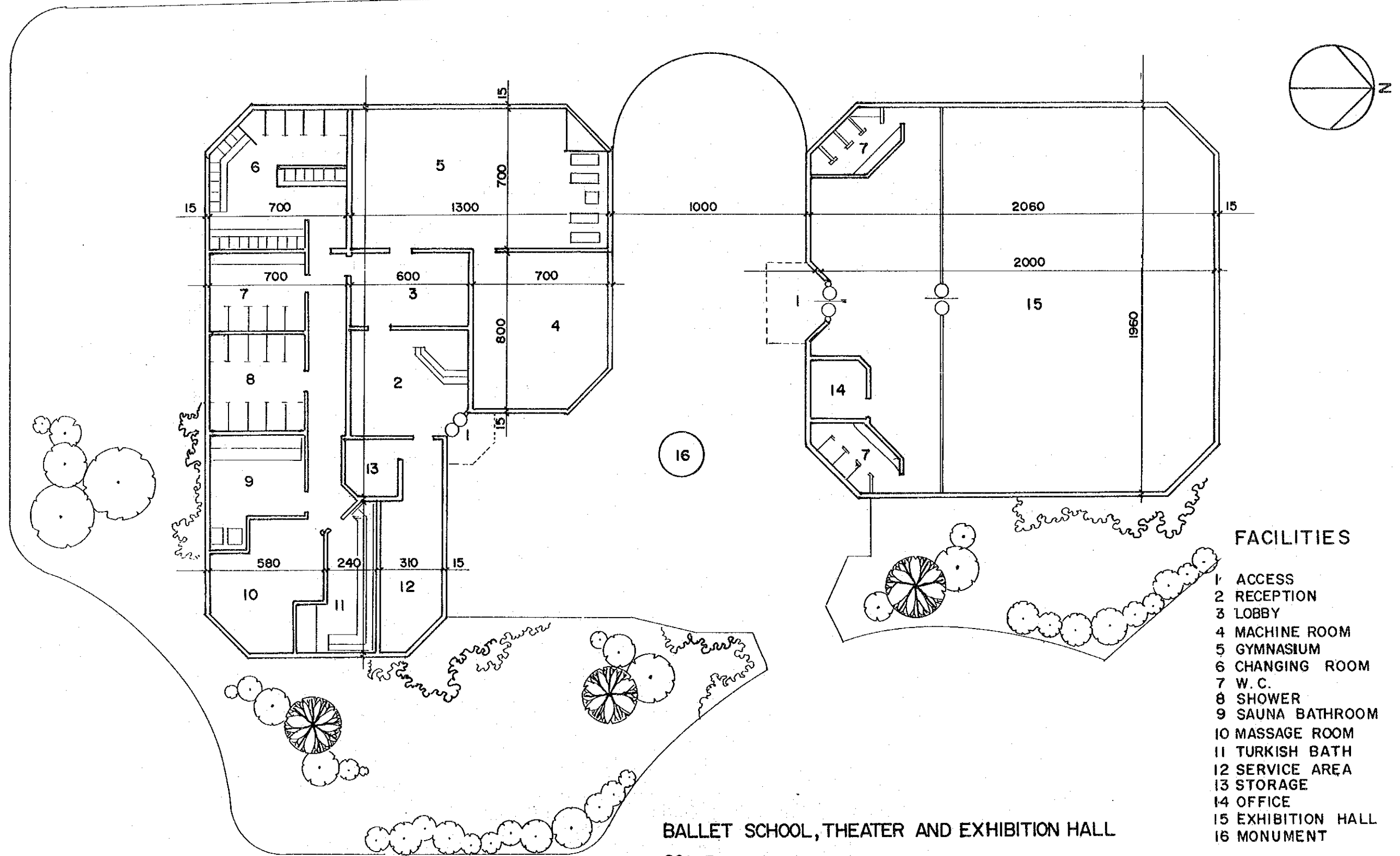


LIBRARY  
ROOF PLAN

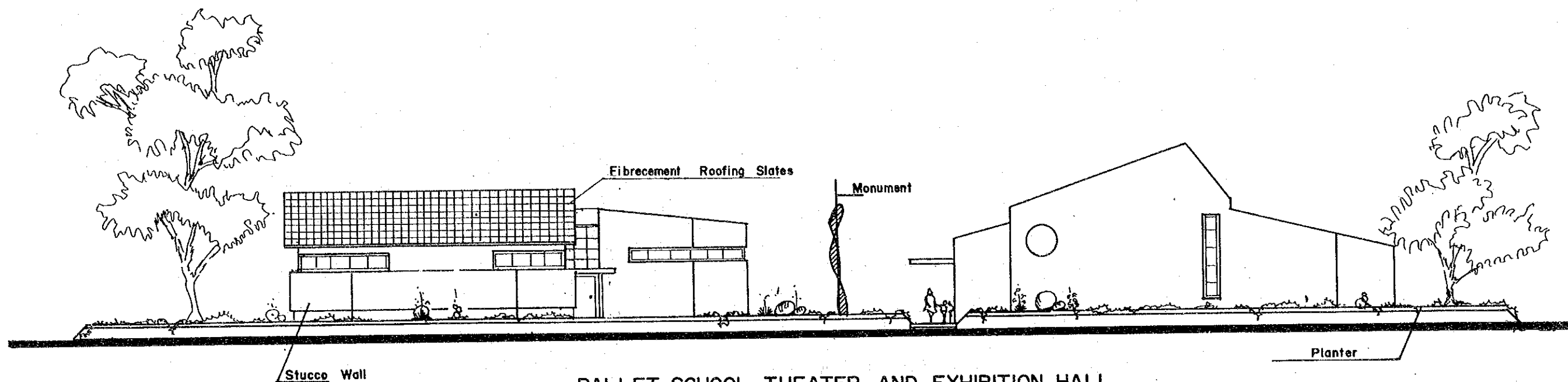
1 : 200



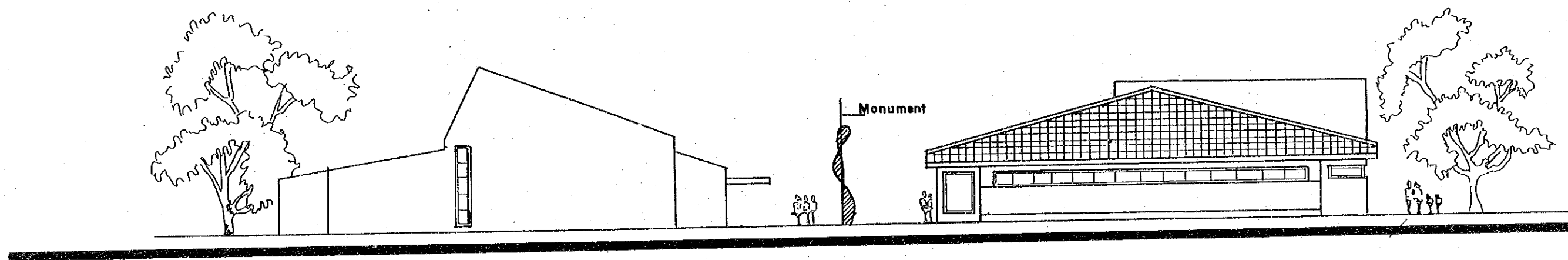


**FACILITIES**

- 1 ACCESS
- 2 RECEPTION
- 3 LOBBY
- 4 MACHINE ROOM
- 5 GYMNASIUM
- 6 CHANGING ROOM
- 7 W.C.
- 8 SHOWER
- 9 SAUNA BATHROOM
- 10 MASSAGE ROOM
- 11 TURKISH BATH
- 12 SERVICE AREA
- 13 STORAGE
- 14 OFFICE
- 15 EXHIBITION HALL
- 16 MONUMENT



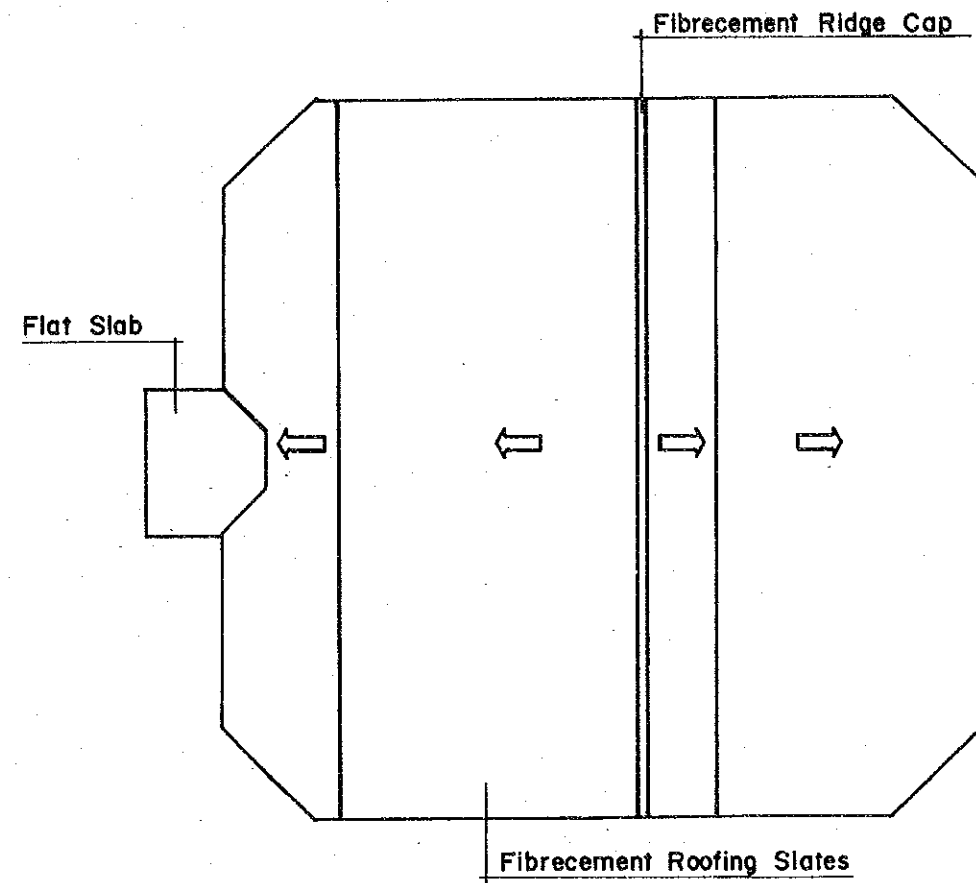
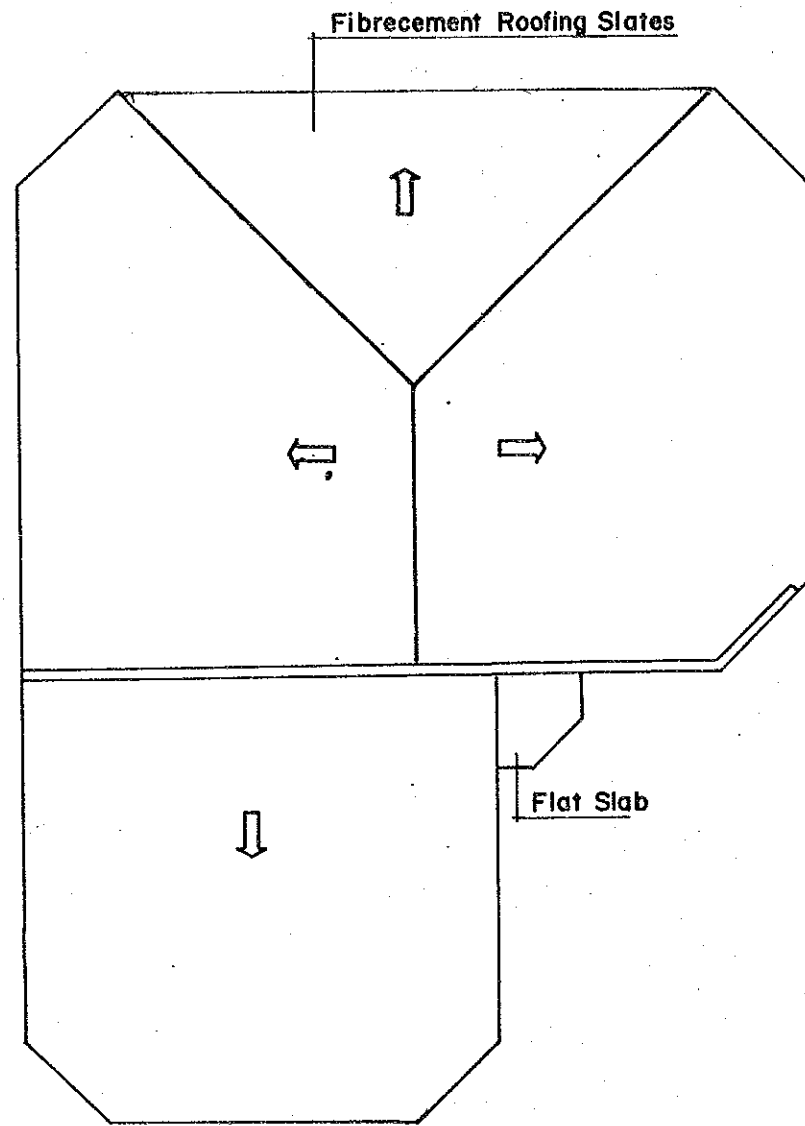
BALLET SCHOOL, THEATER AND EXHIBITION HALL  
WEST ELEVATION



BALLET SCHOOL, THEATER AND EXHIBITION HALL  
EAST ELEVATION

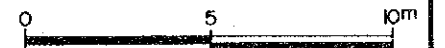
1 : 200

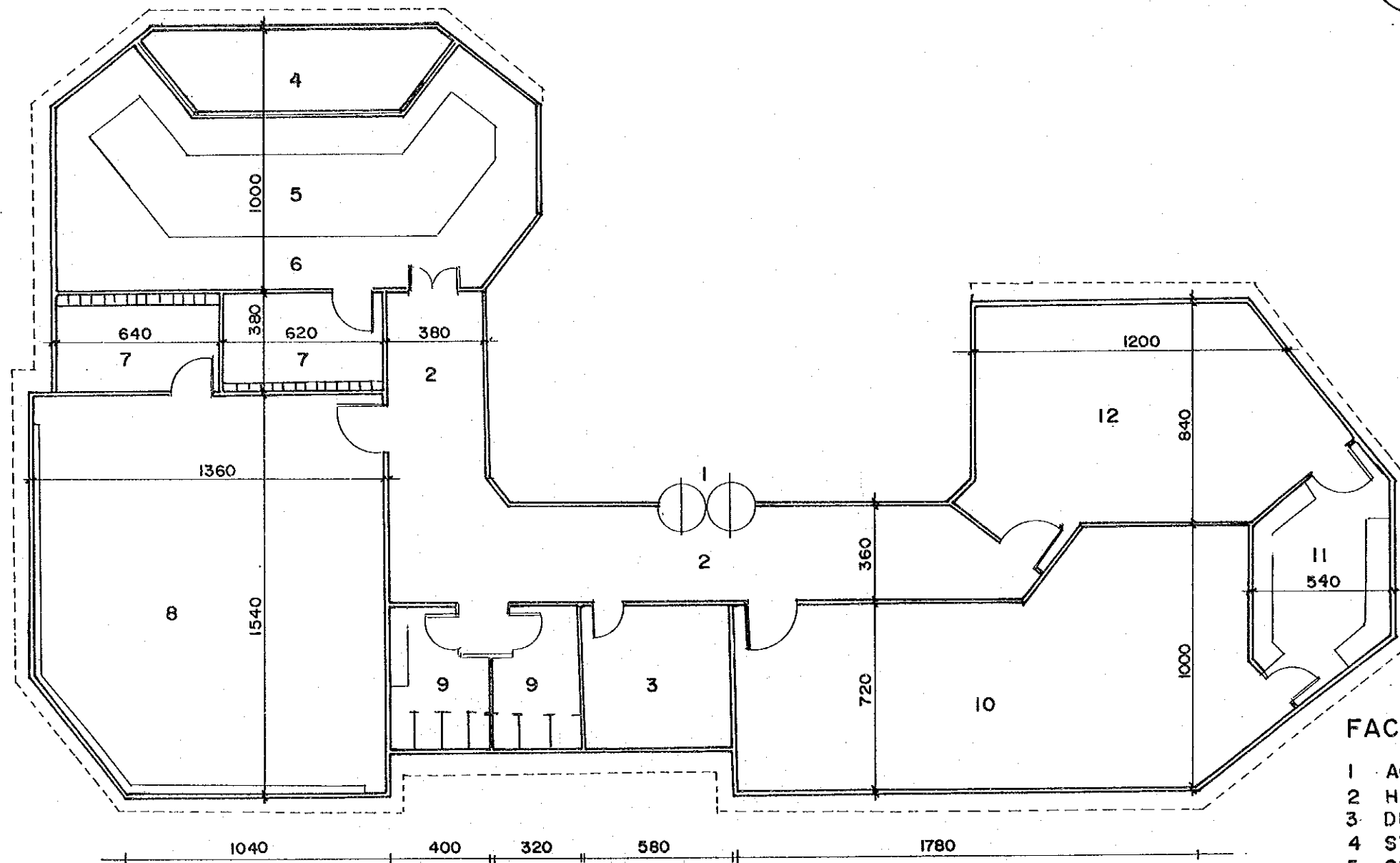
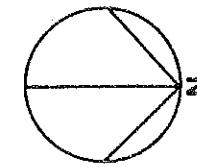




BALLET SCHOOL, THEATER AND EXHIBITION HALL  
ROOF PLAN

1 : 200

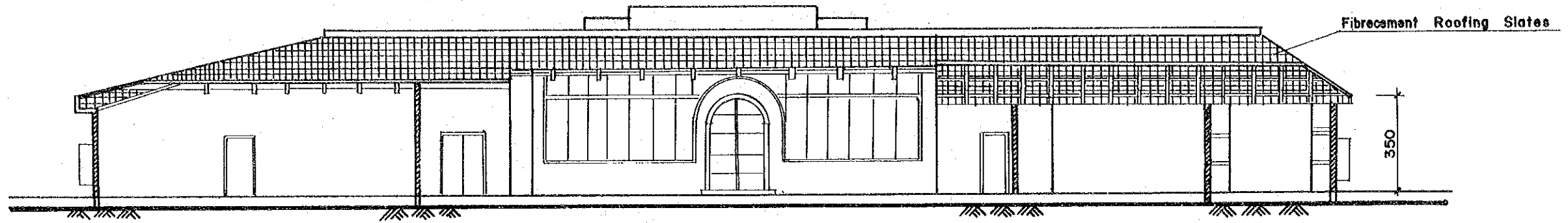




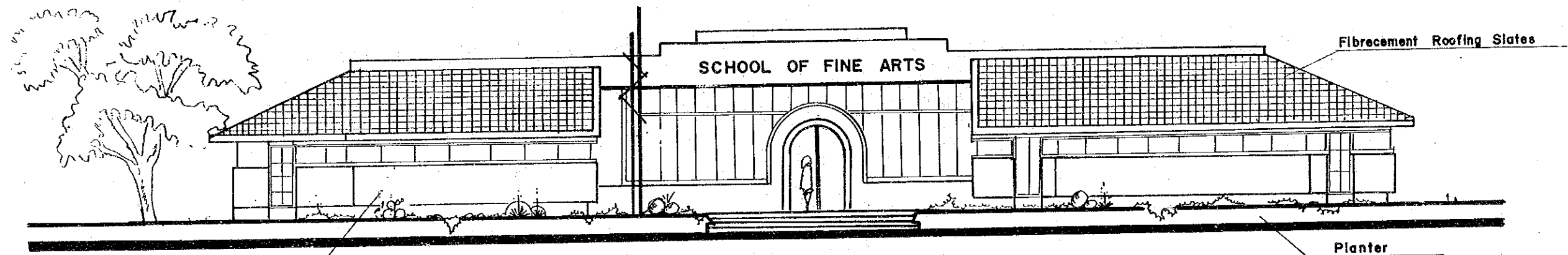
**FACILITIES**

- 1 ACCESS
- 2 HALL
- 3 DIRECTOR OFFICE
- 4 STAGE
- 5 SITTING AREA
- 6 THEATER
- 7 CHANGING ROOM
- 8 DANCING ROOM
- 9 W.C
- 10 PAINTING ROOM
- 11 STORAGE
- 12 ART ROOM

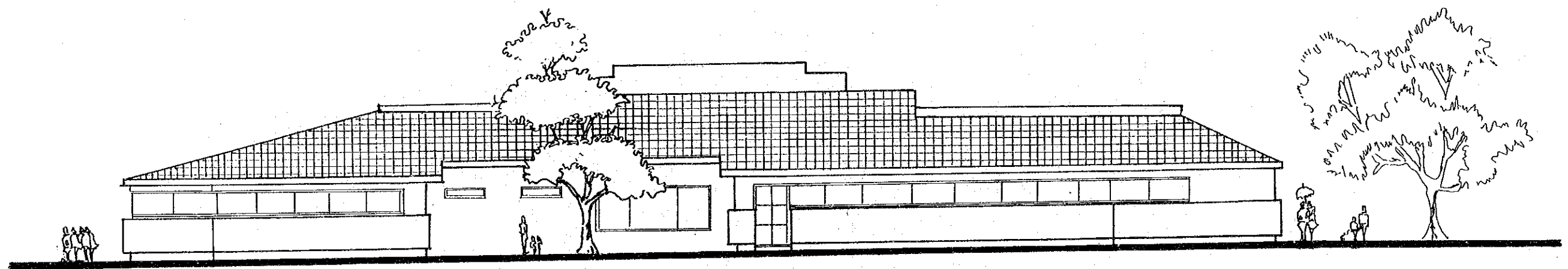
**SCHOOL OF FINE ARTS**



SCHOOL OF FINE ARTS  
SECTION A-A



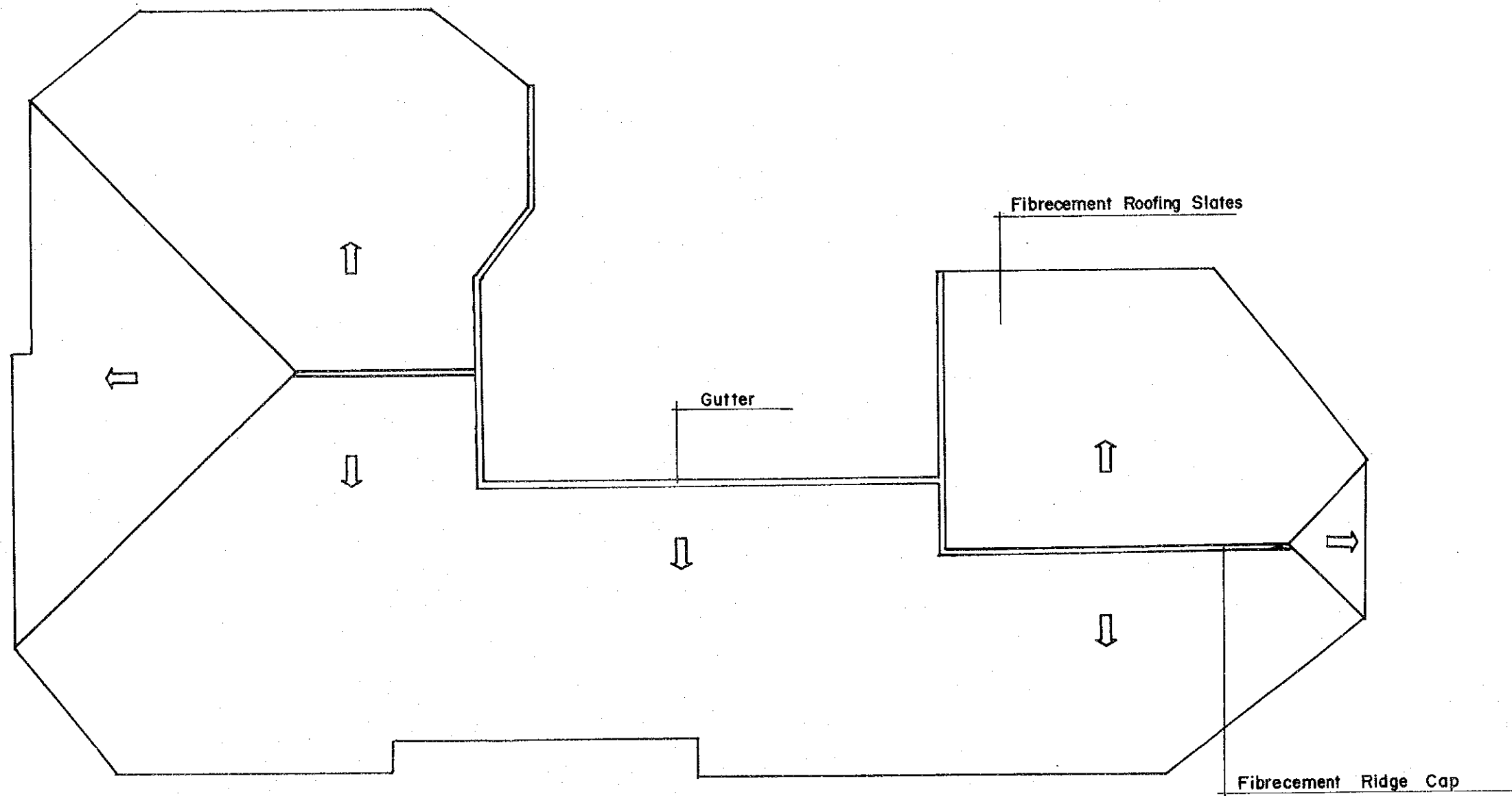
SCHOOL OF FINE ARTS  
WEST ELEVATION



SCHOOL OF FINE ARTS  
EAST ELEVATION

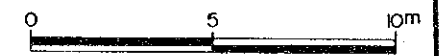
1 : 200





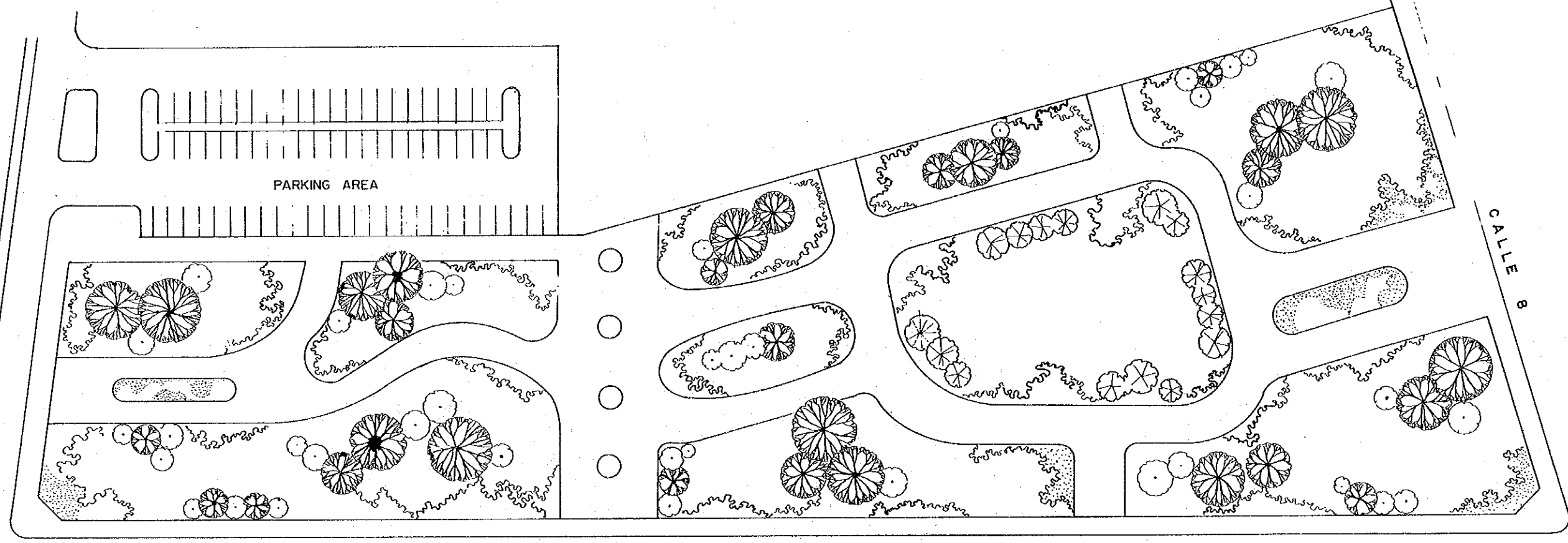
SCHOOL OF FINE ARTS  
ROOF PLAN

1 : 200





CALLE 9



PARKING AREA

CALLE 8

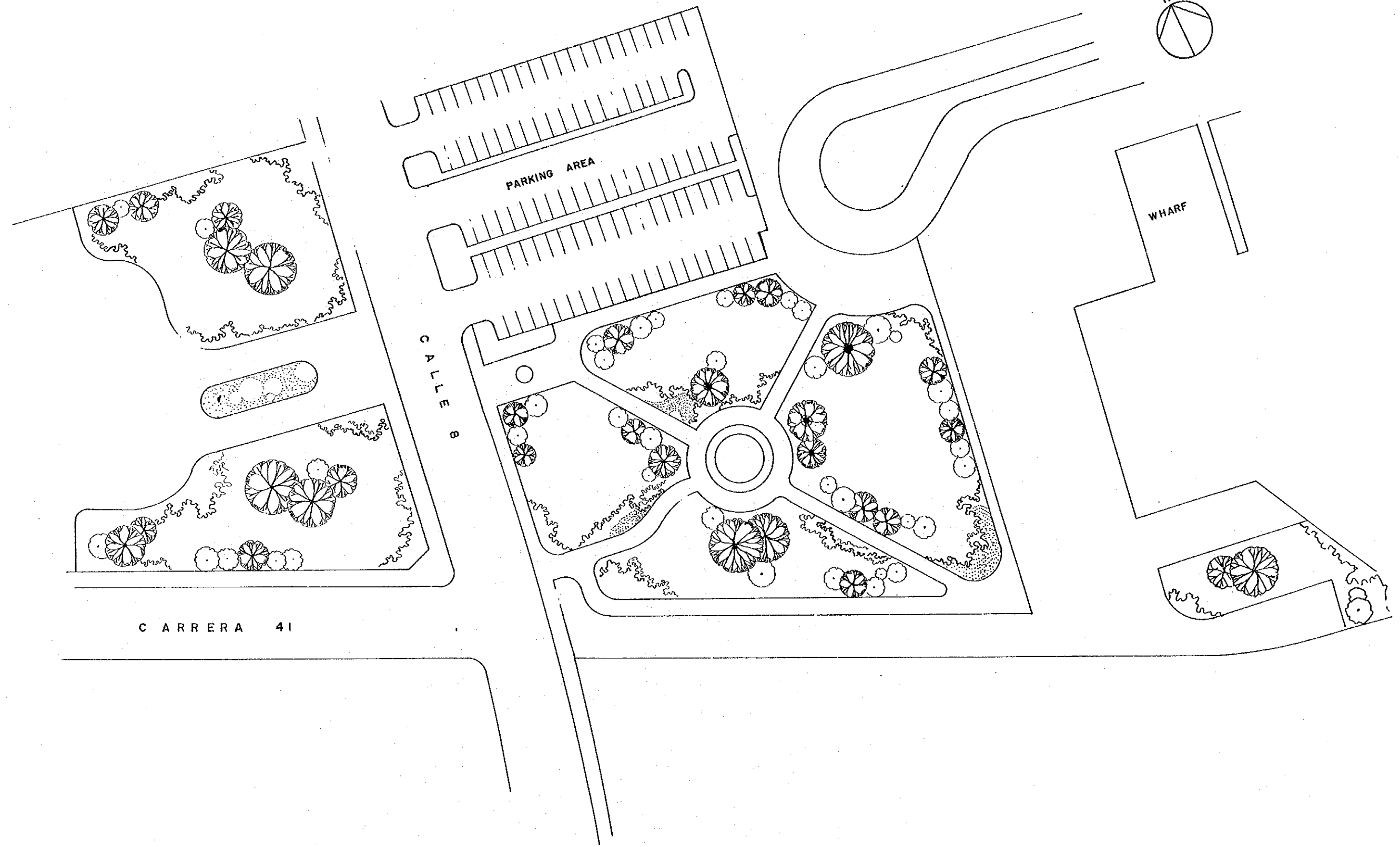
CARRERA 41

ARRIBA CANAL PARK

1:500

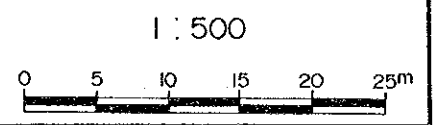






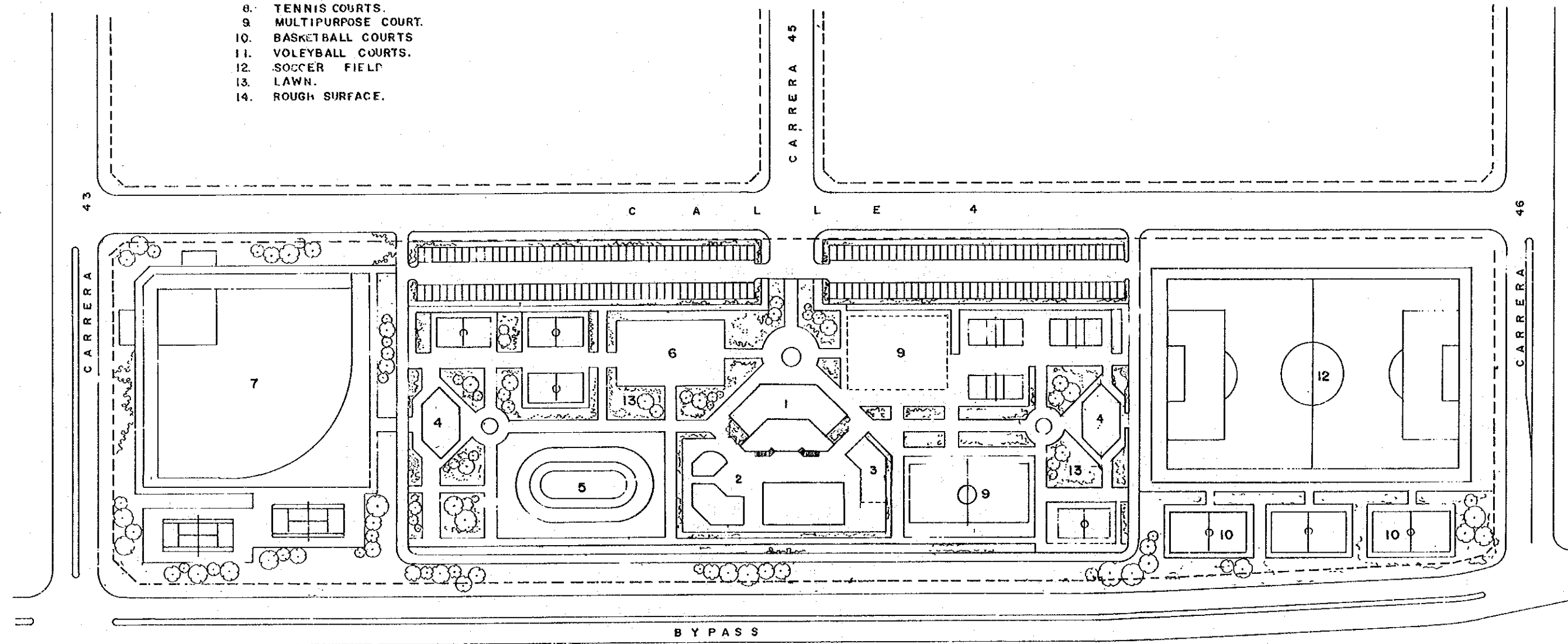
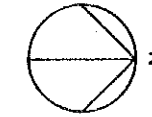
CARRERA 41

ARRIBA CANAL PARK



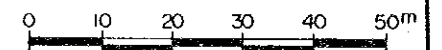
FACILITIES

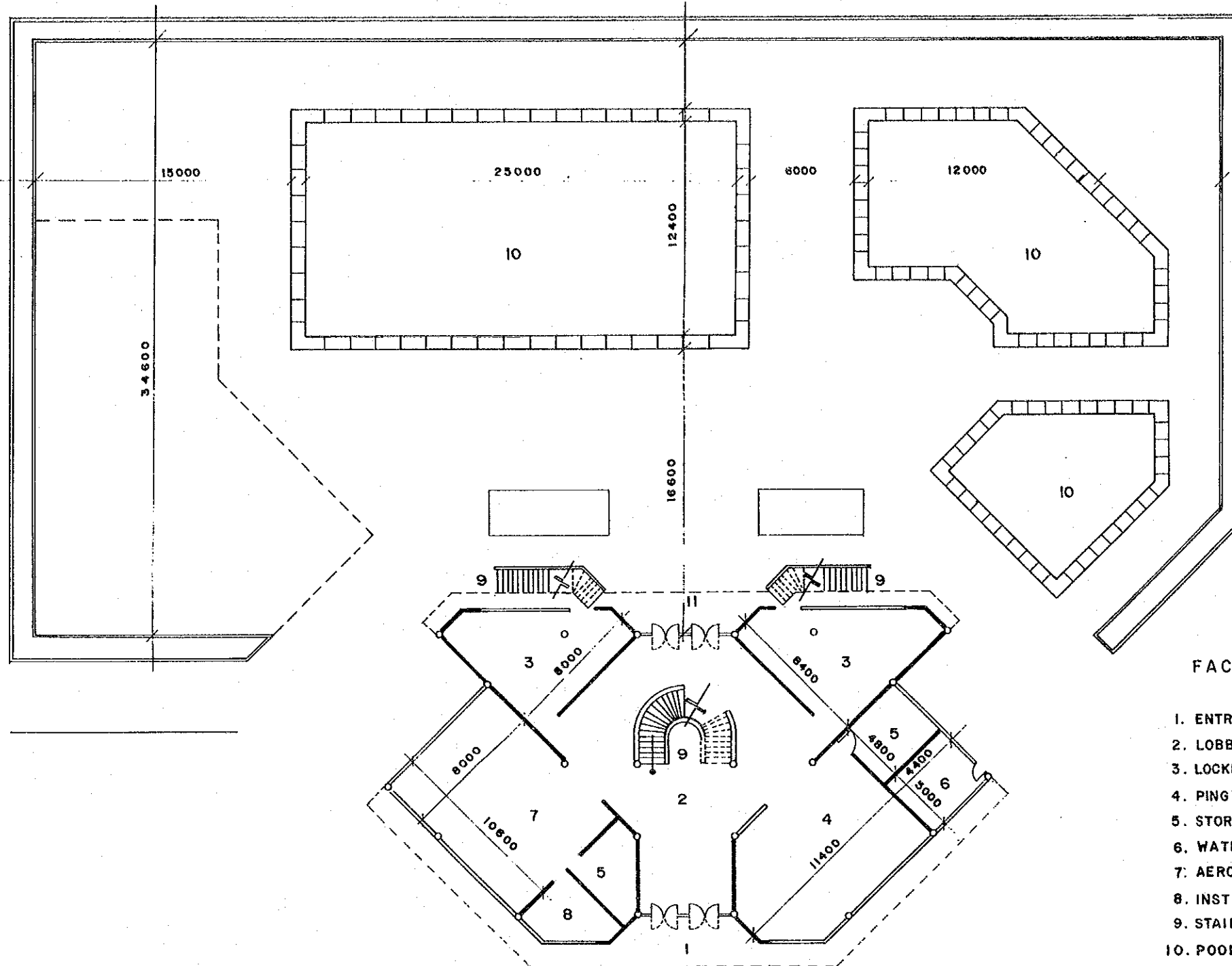
1. ADMINISTRATION BUILDING
2. POOLS
3. FUTURE EXPANSION AREA.
4. LOCKER AND CHANGING ROOM WITH SHOWER AND TOILET - FAST FOOD EAT.
5. ROLLER SKATING RINK.
6. GYMNASTICS AREA
7. SOFTBALL COURT
8. TENNIS COURTS.
9. MULTIPURPOSE COURT.
10. BASKETBALL COURTS
11. VOLLEYBALL COURTS.
12. SOCCER FIELD
13. LAWN.
14. ROUGH SURFACE.



RECREATIONAL PARK

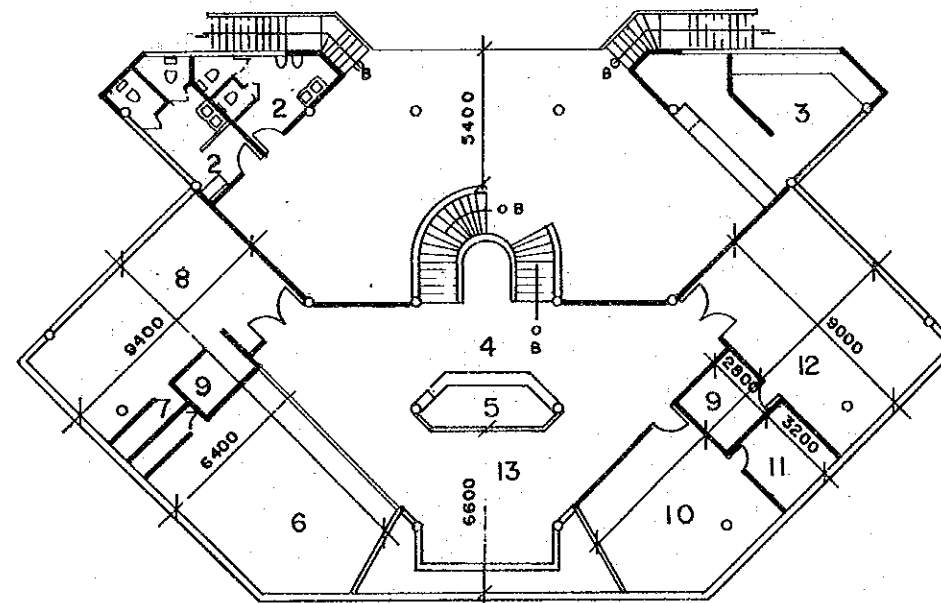
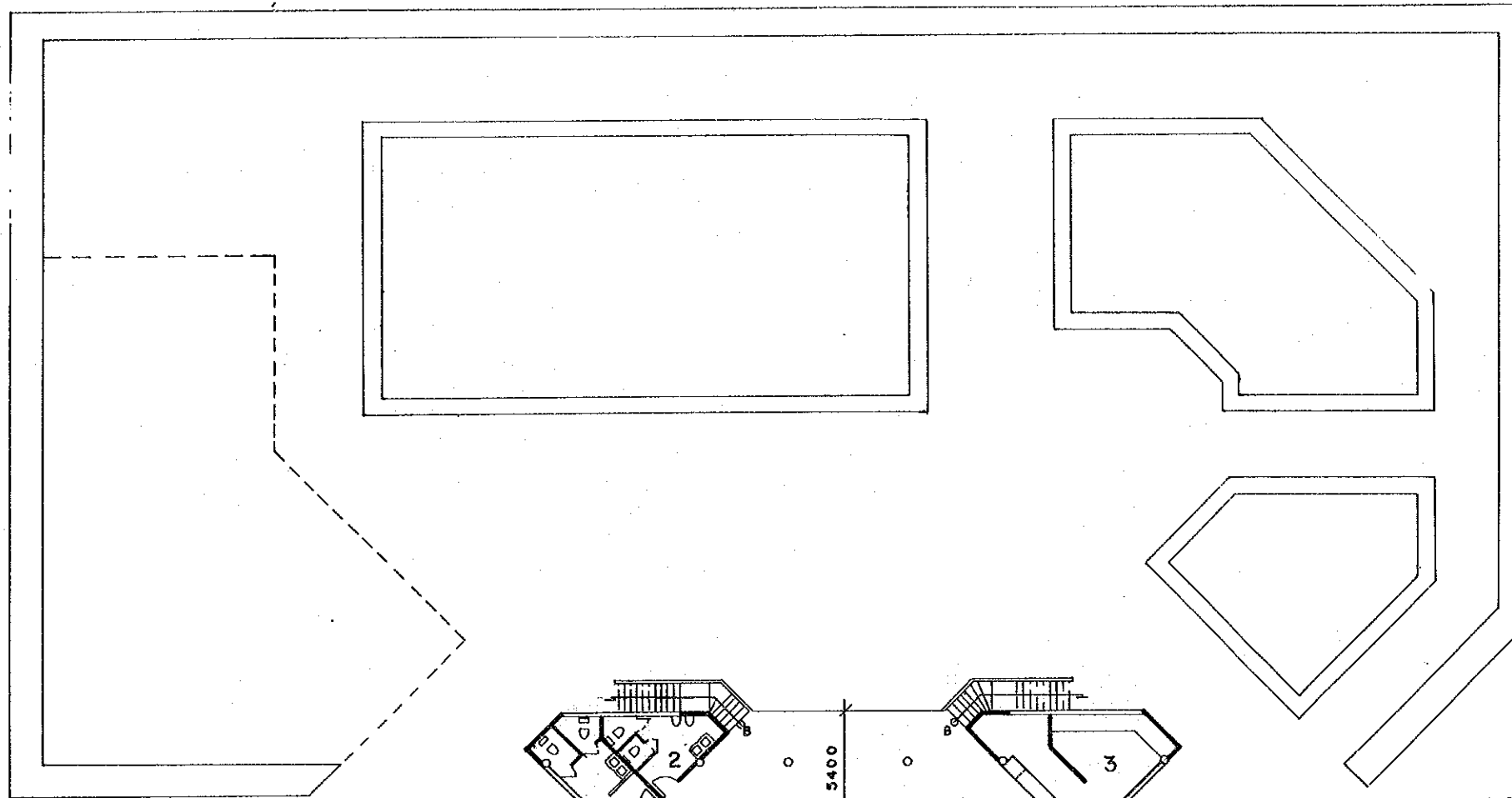
1:1,000





- FACILITIES**
- 1. ENTRANCE
  - 2. LOBBY
  - 3. LOCKER AND CHANGING ROOM
  - 4. PING PONG ROOM
  - 5. STORAGE FOR SPORTS EQUIPAMENT
  - 6. WATER RECYCLING ROOM (FOR POOL WATER)
  - 7. AEROBICS AND WEIGHTS ROOM
  - 8. INSTRUCTORS LOUNGE
  - 9. STAIRS
  - 10. POOLS
  - 11. EXITO TO POOLS

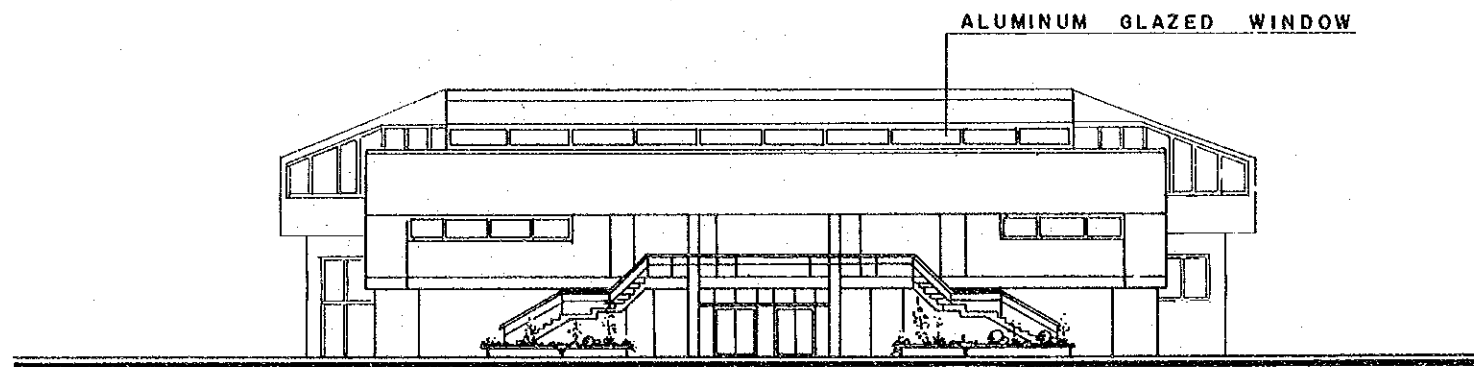
**RECREATIONAL PARK ADMINISTRATIVE BUILDING  
GROUND FLOOR**



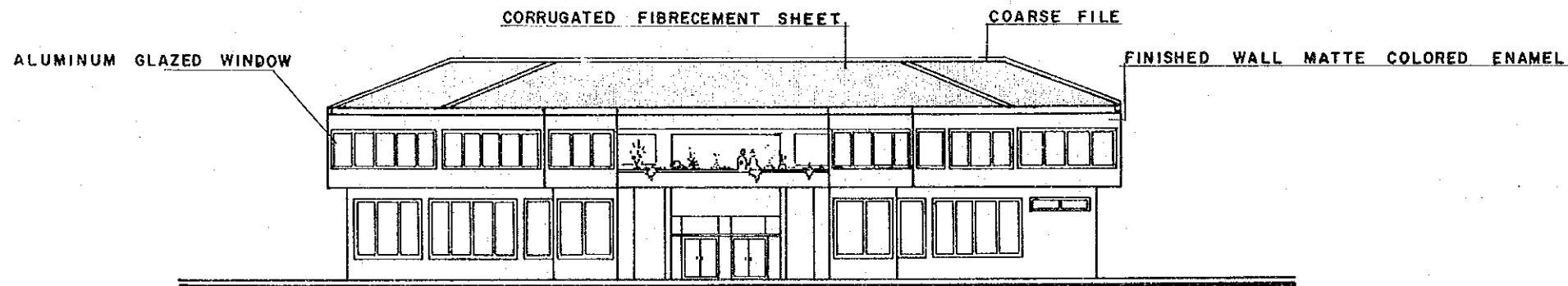
FACILITIES

1. CAFETERIA.
2. PUBLIC BATHROOM
3. KITCHEN
4. LOBBY OBSERVATION DOCK
5. INFORMATION
6. MANAGER'S OFFICE-SECRETARY
7. BATHROOM
8. MEETING ROOM
- 9 STORAGE
- 10 ACCOUTING OFFICE
11. ARCHIVES
12. CHESS ROOM
13. WAITING ROOM

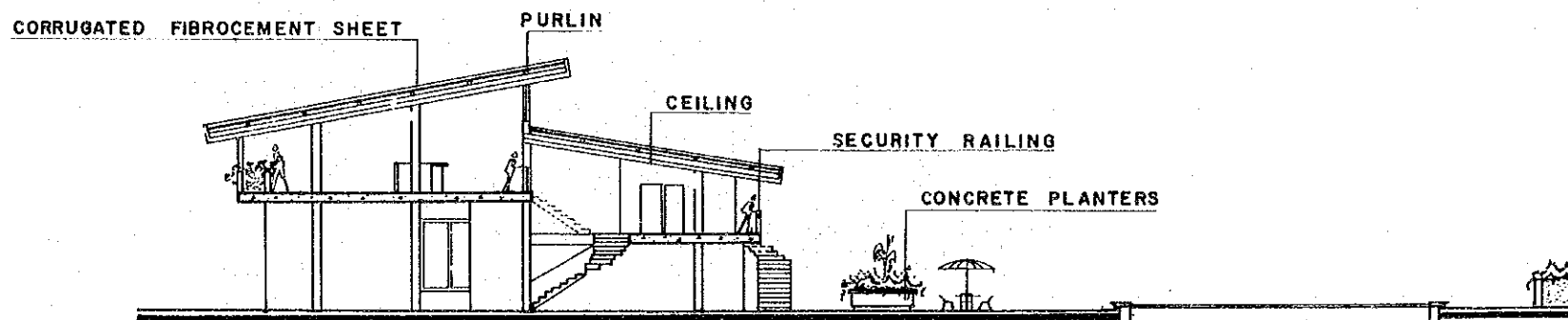
RECREATIONAL PARK ADMINISTRATION BUILDING  
LEVELS 2 AND 3



RECREATIONAL PARK ADMINISTRATIVE BUILDING  
EAST ELEVATION

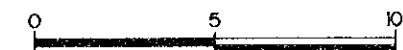


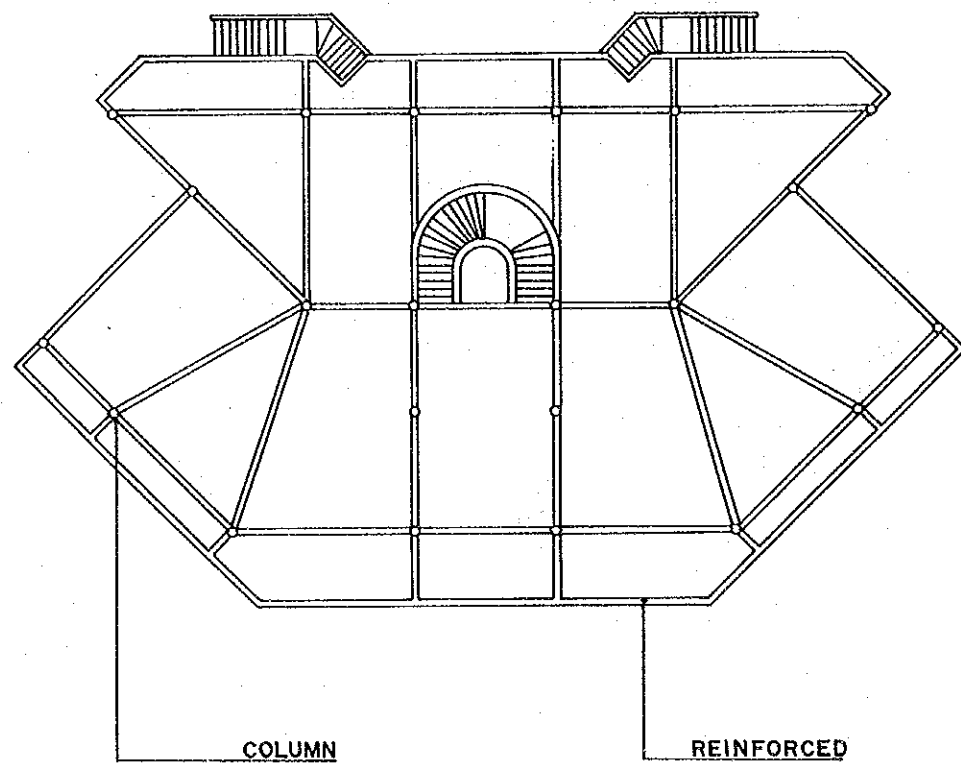
RECREATIONAL PARK ADMINISTRATIVE BUILDING  
WEST ELEVATION



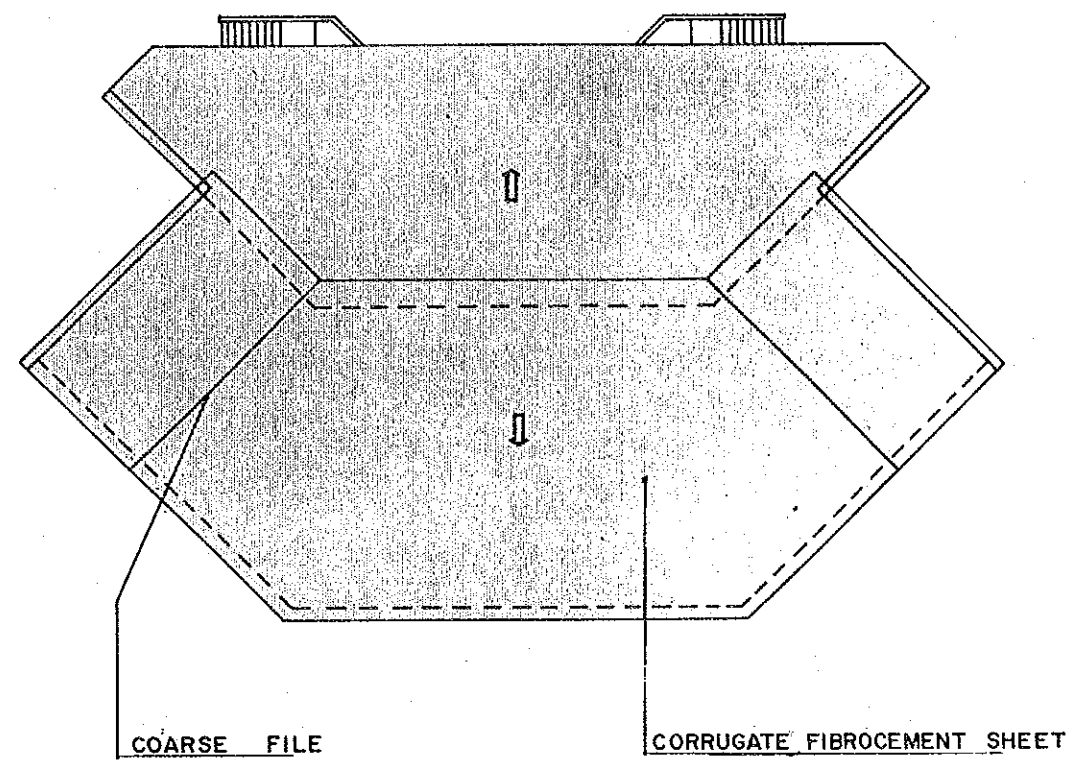
SECTION A-A'

1 : 200





STRUCTURAL PLAN

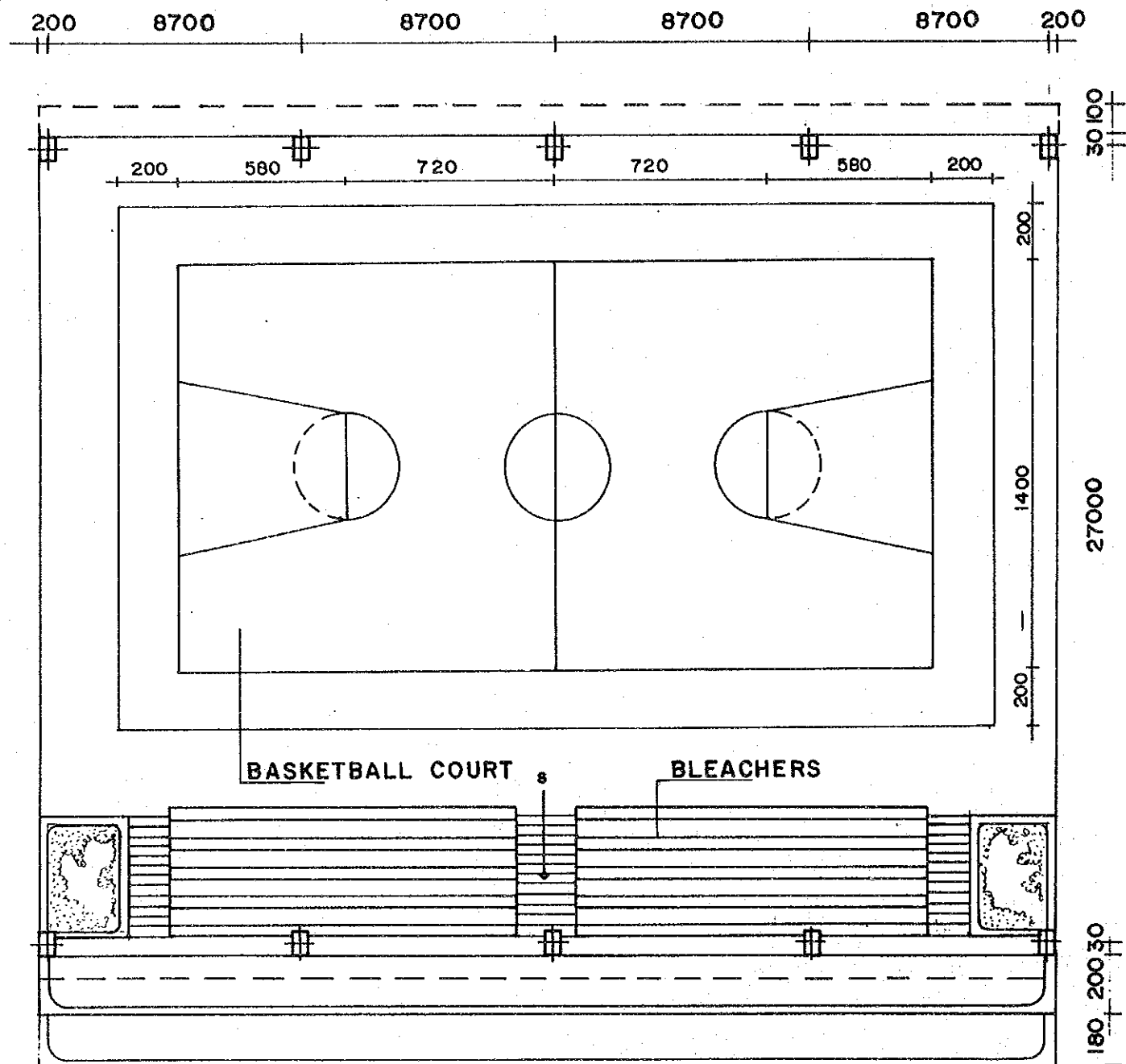


ROOF PLAN

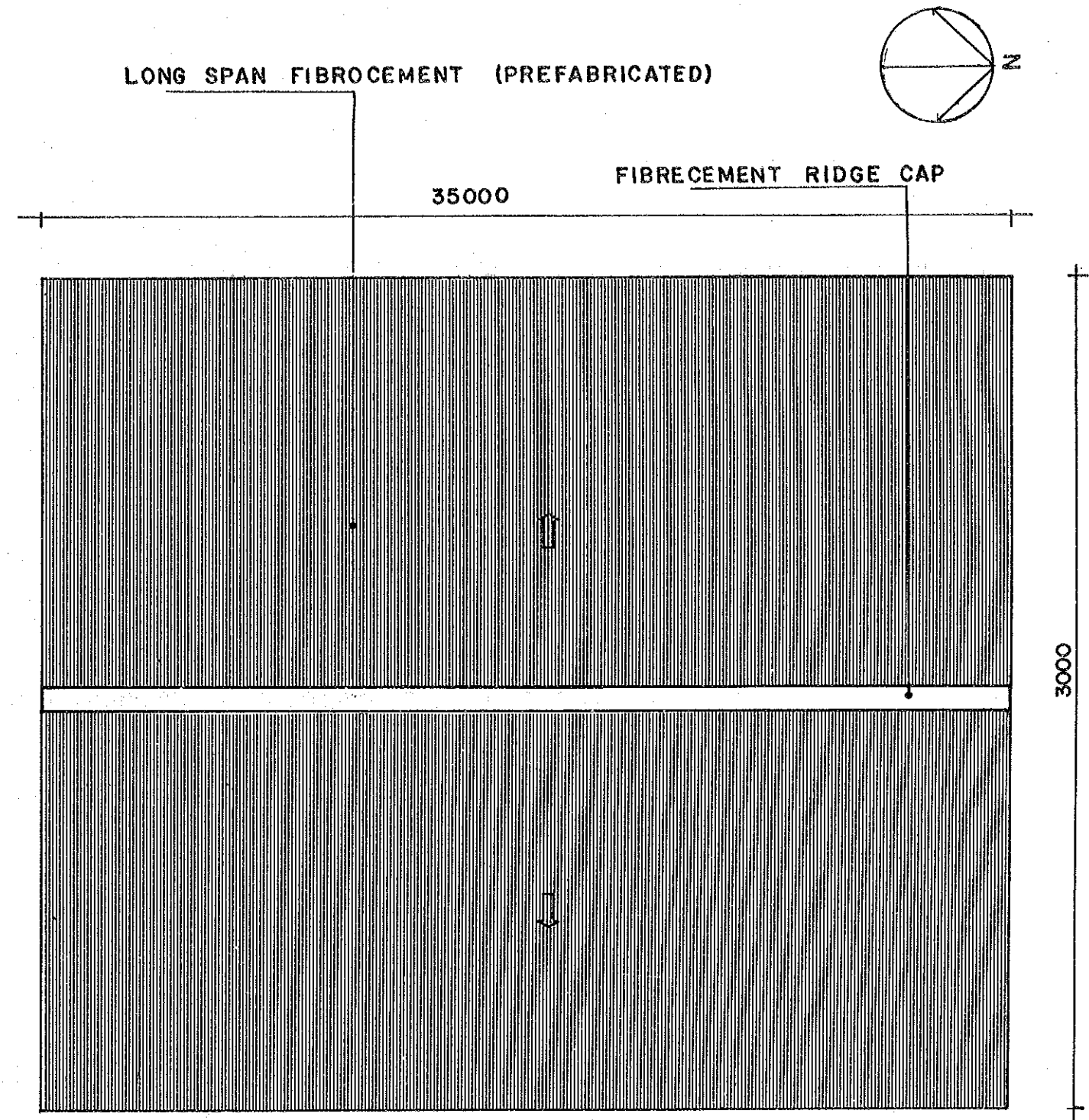
RECREATIONAL PARK ADMINISTRATIVE BUILDING

1 : 200

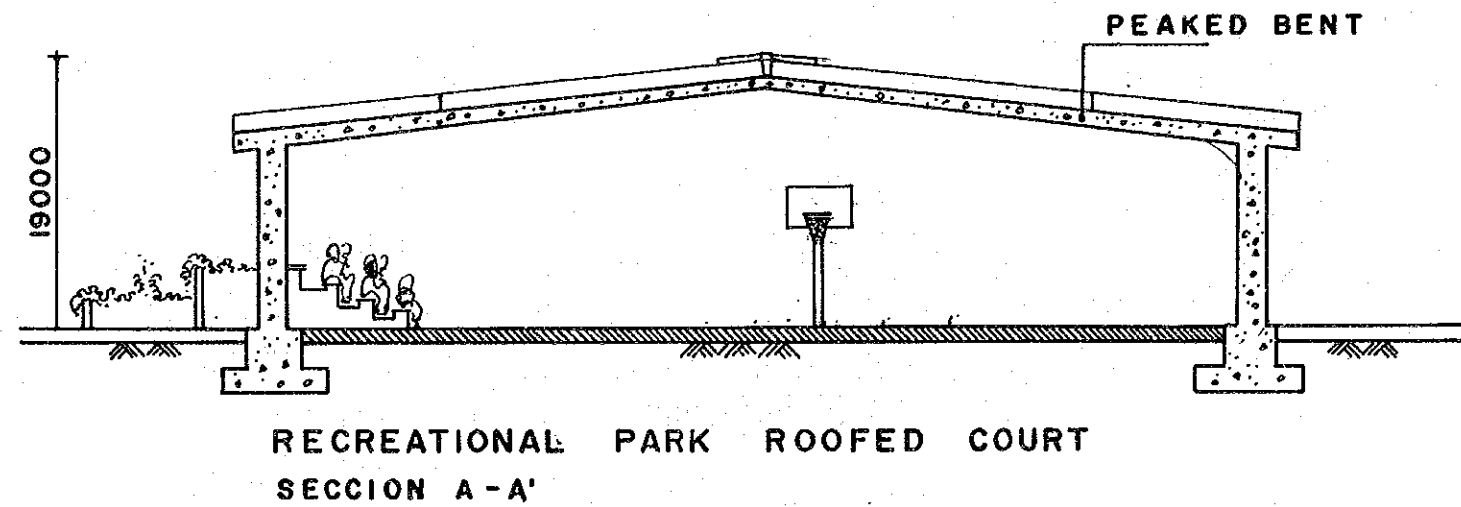
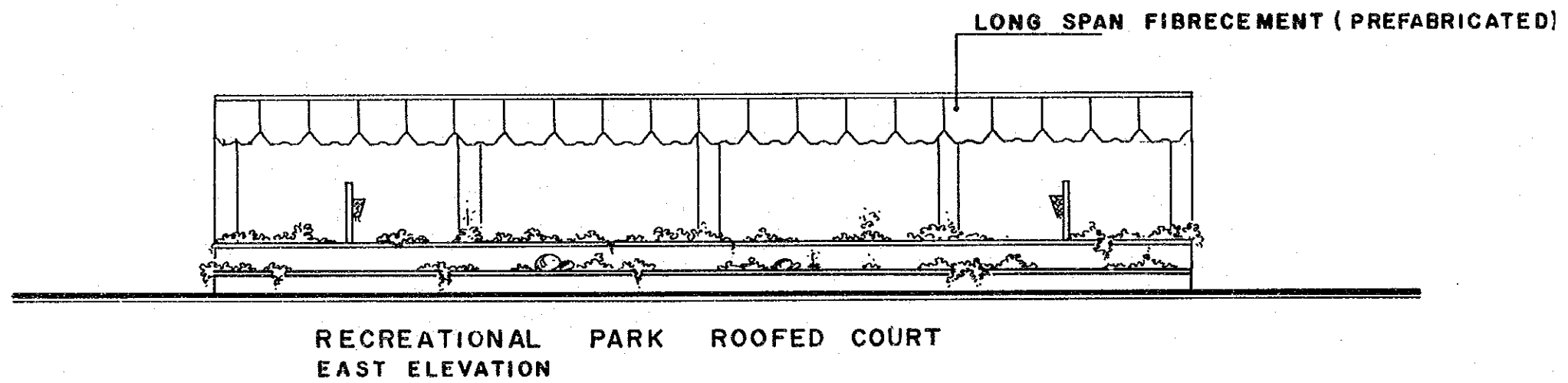
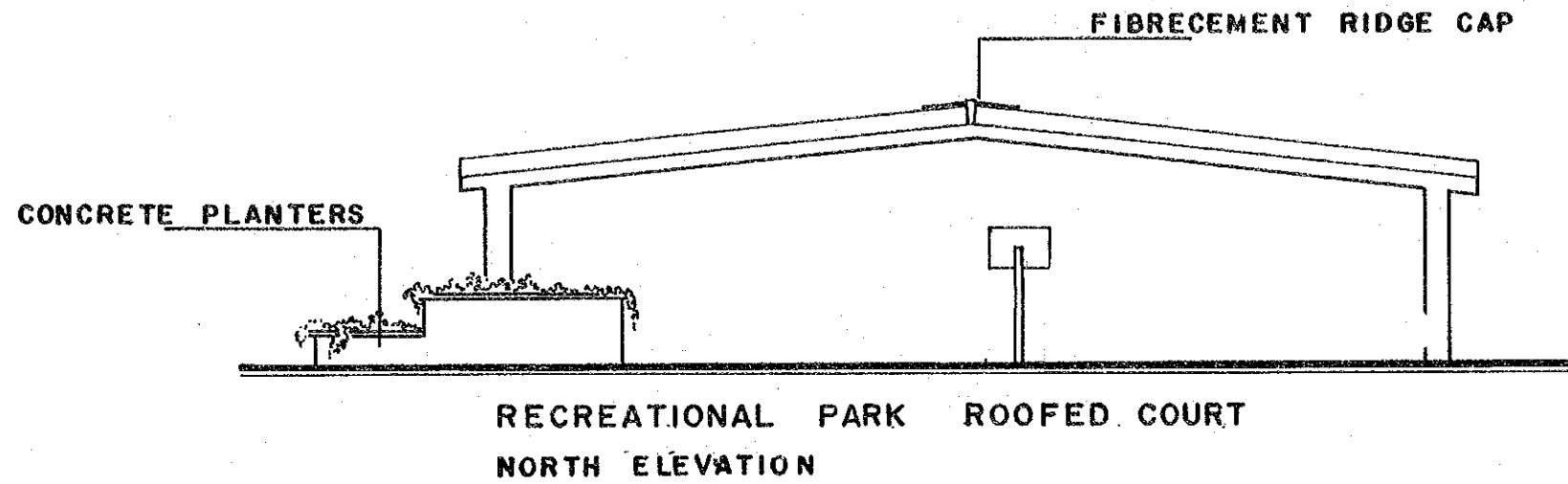




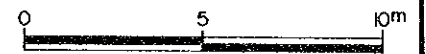
**MULTIPURPOSE ROOFED COURT**  
RECREATIONAL PARK



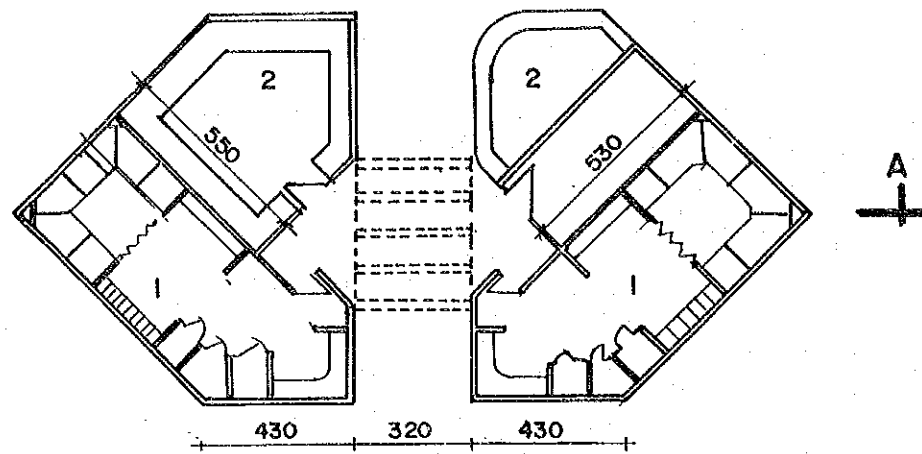
**ROOF PLAN**



1 : 200





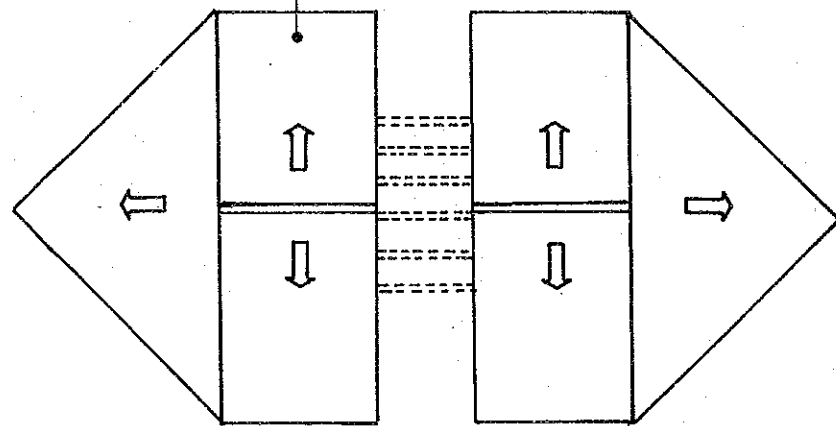


RECREATIONAL PARK  
CAFETERIA AND CHANGING ROOM  
PLAN

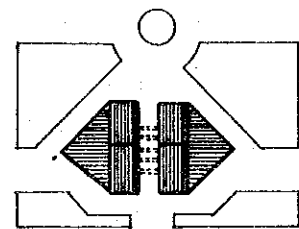
FACILITIES

- 1 LOCKER AND CHANGING ROOM WITH SHOWER AND TOILET
- 2 CAFETERIA

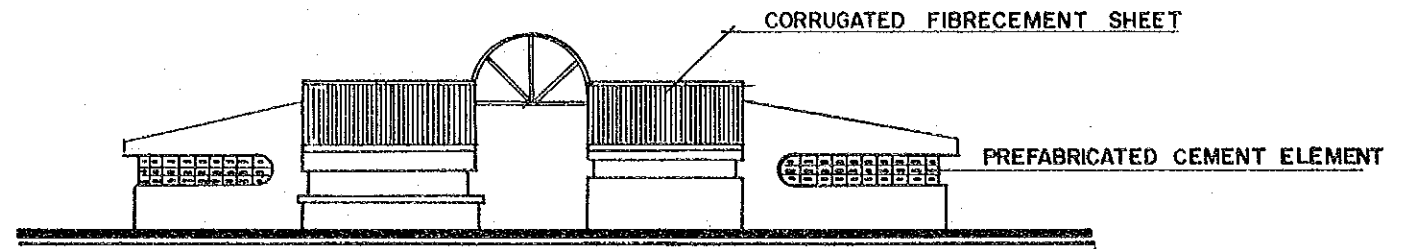
CORRUGATED FIBRECEMENT SHEET



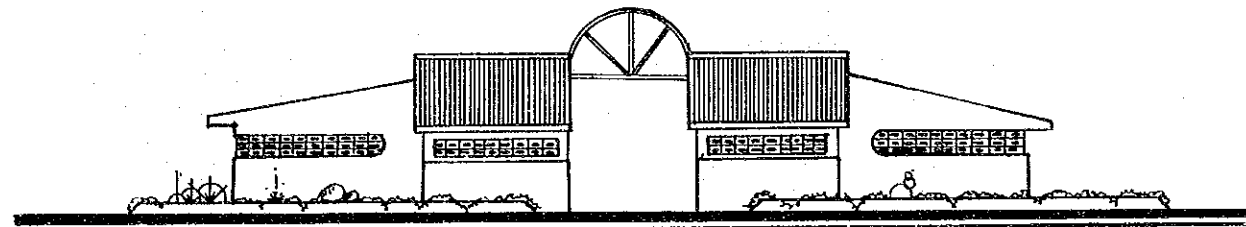
CAFETERIA AND CHANGING ROOM  
ROOF PLAN



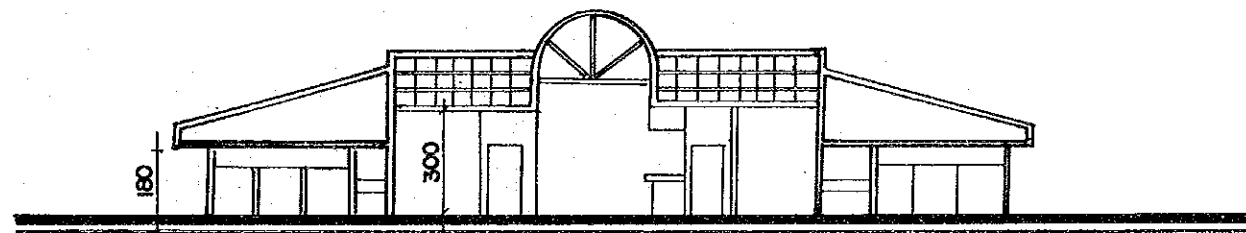
CAFETERIA AND CHANGING ROOM  
LOCATED IN THE GENERAL PLAN  
OF RECREATIONAL PARK  
1:1,000



RECREATIONAL PARK  
CAFETERIA AND CHANGING ROOM  
SOUTH ELEVATION



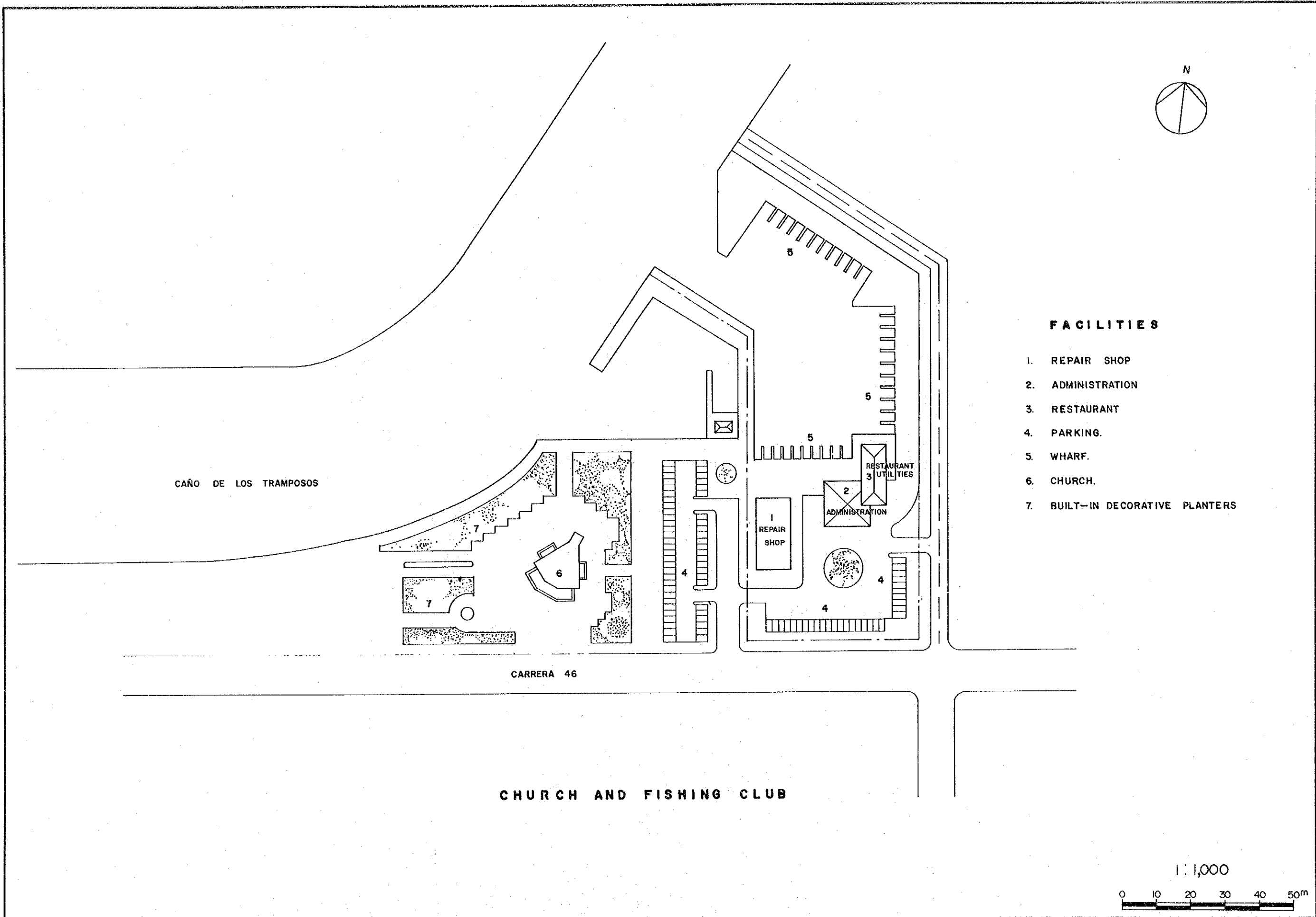
CAFETERIA AND CHANGING ROOM  
NORTH ELEVATION



CAFETERIA AND CHANGING ROOM  
SECTION A - A

1:200

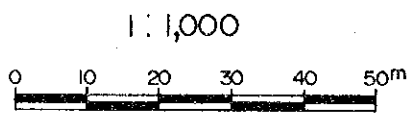


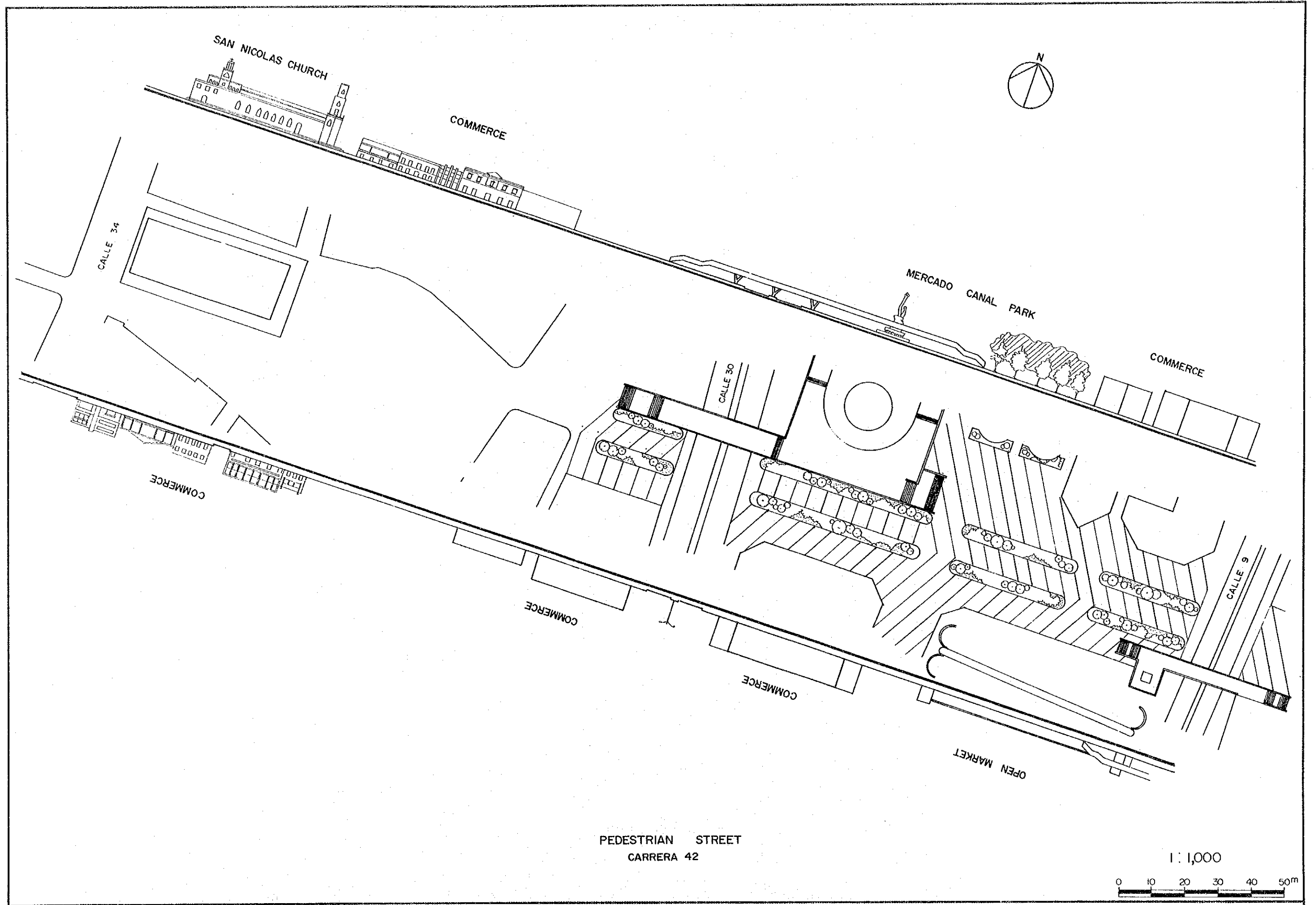


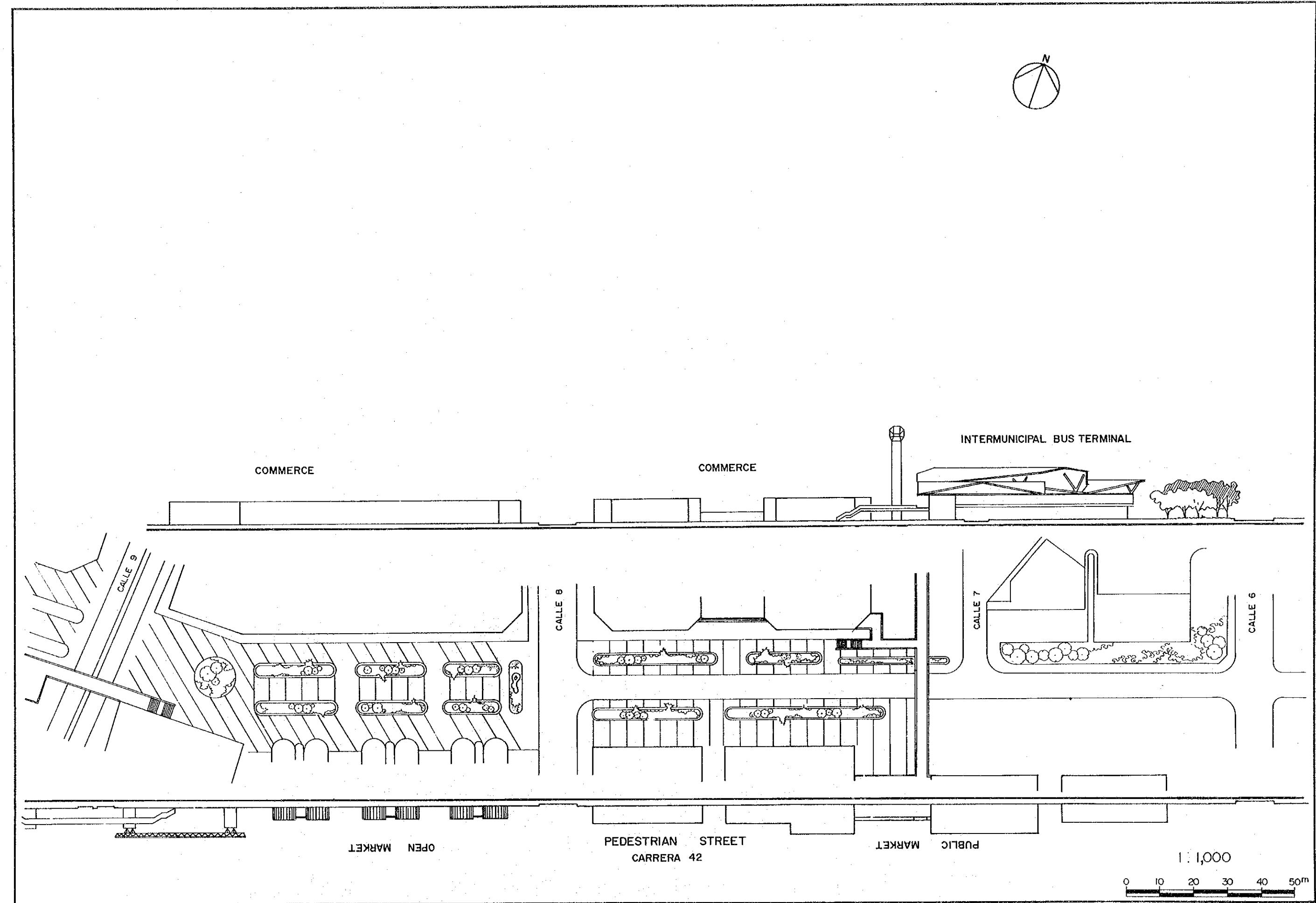
**FACILITIES**

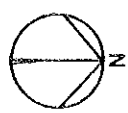
- 1. REPAIR SHOP
- 2. ADMINISTRATION
- 3. RESTAURANT
- 4. PARKING.
- 5. WHARF.
- 6. CHURCH.
- 7. BUILT-IN DECORATIVE PLANTERS

**CHURCH AND FISHING CLUB**









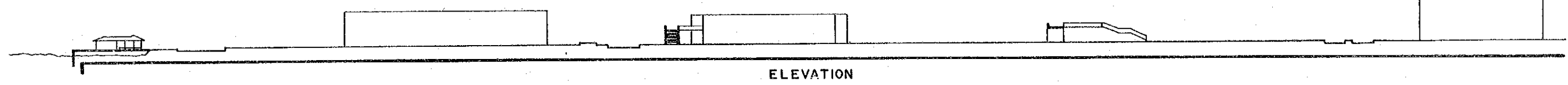
WHARF

PUBLIC MARKET

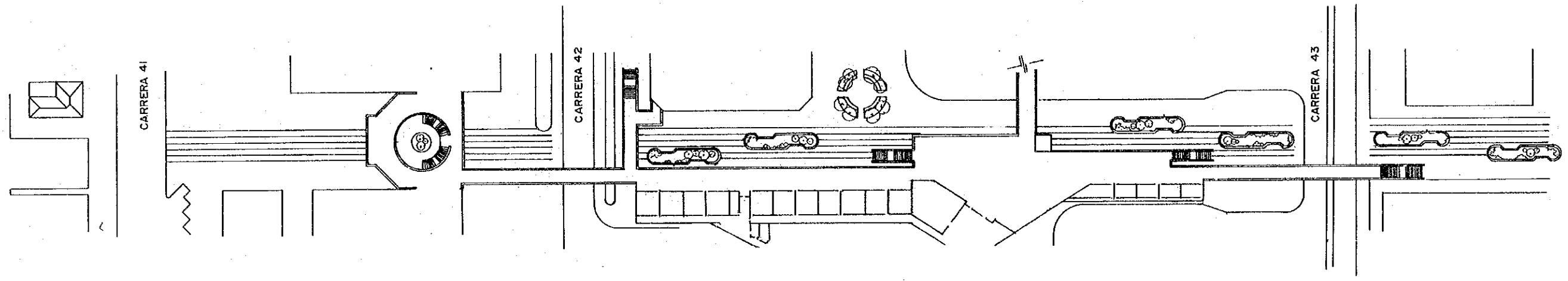
COMERCIAL

URBAN BUS TERMINAL

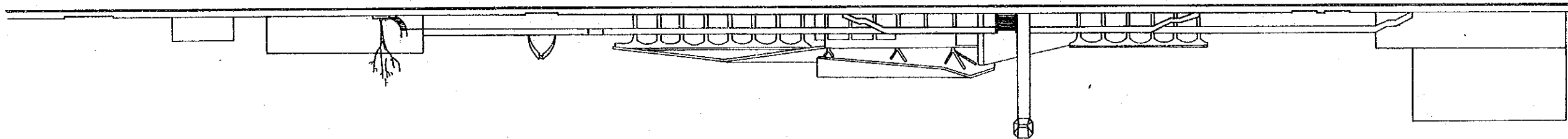
BUSINESS



ELEVATION



ELEVATION



PUBLIC MARKET

TERMINAL

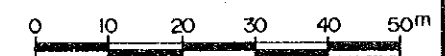
BUS

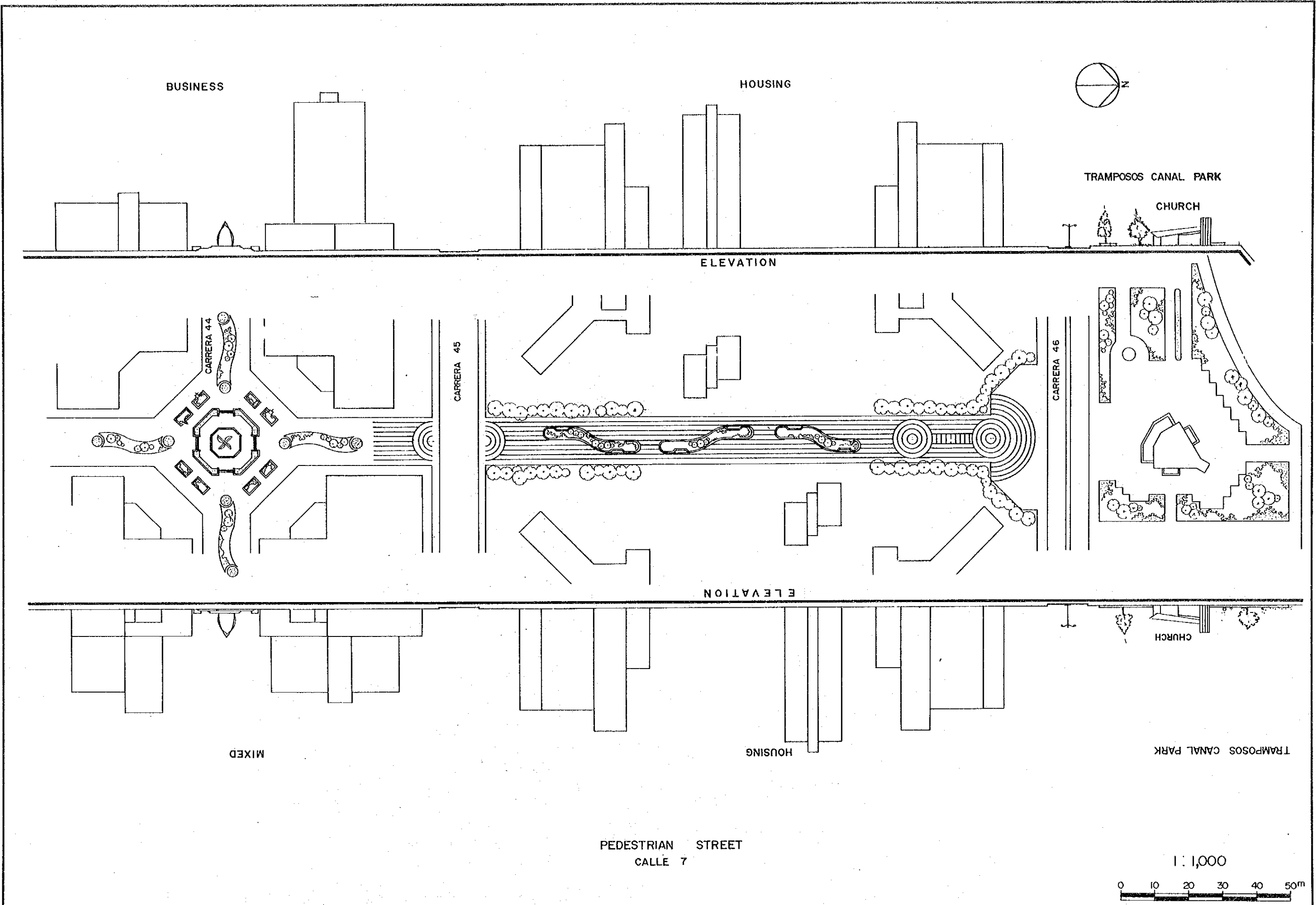
INTERMUNICIPAL

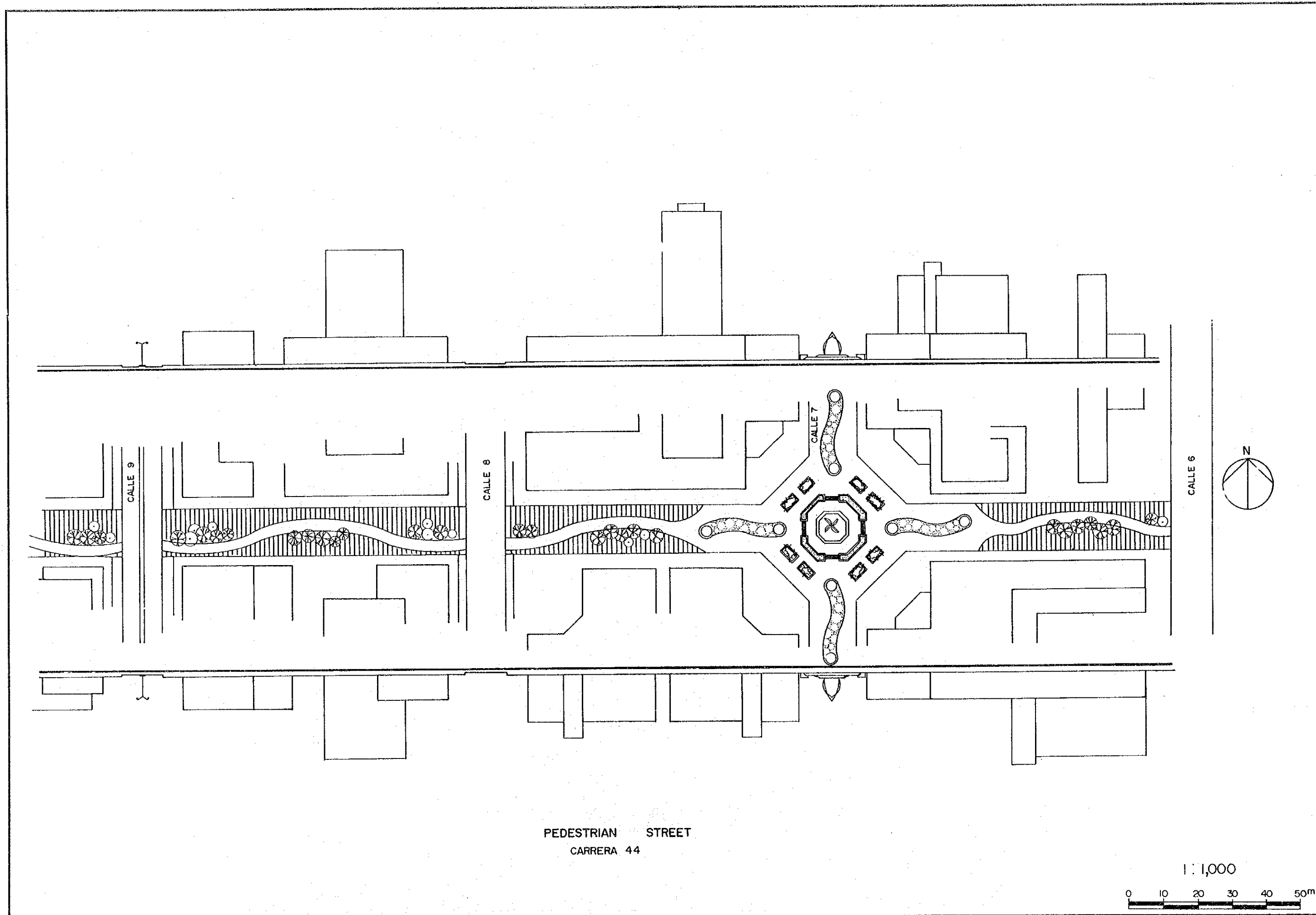
MIXED

PEDESTRIAN STREET  
CALLE 7

1:1,000

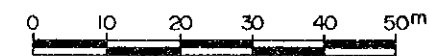


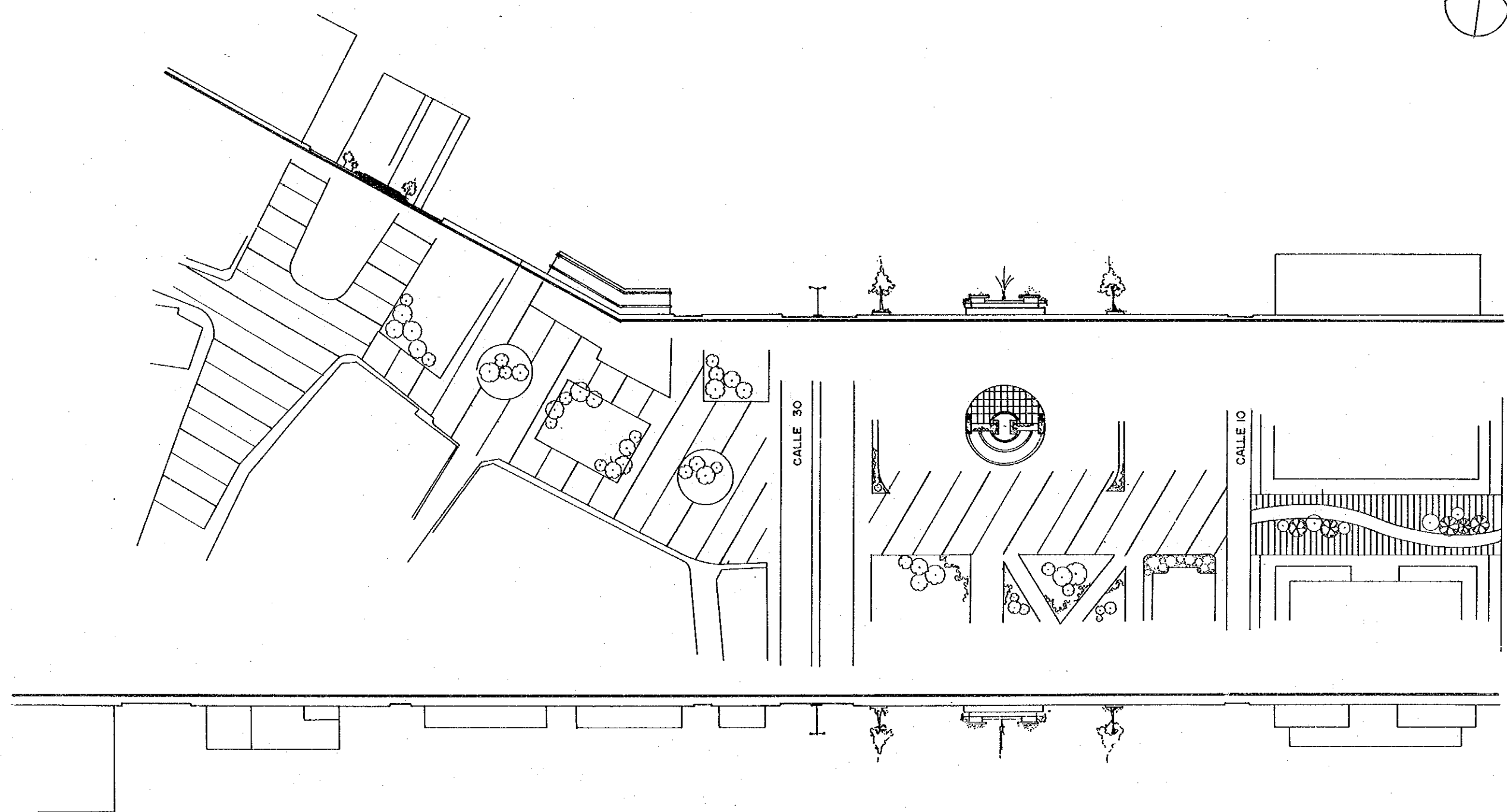
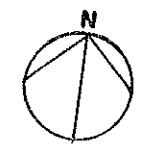




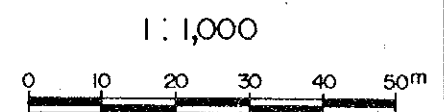
PEDESTRIAN STREET  
CARRERA 44

1:1,000



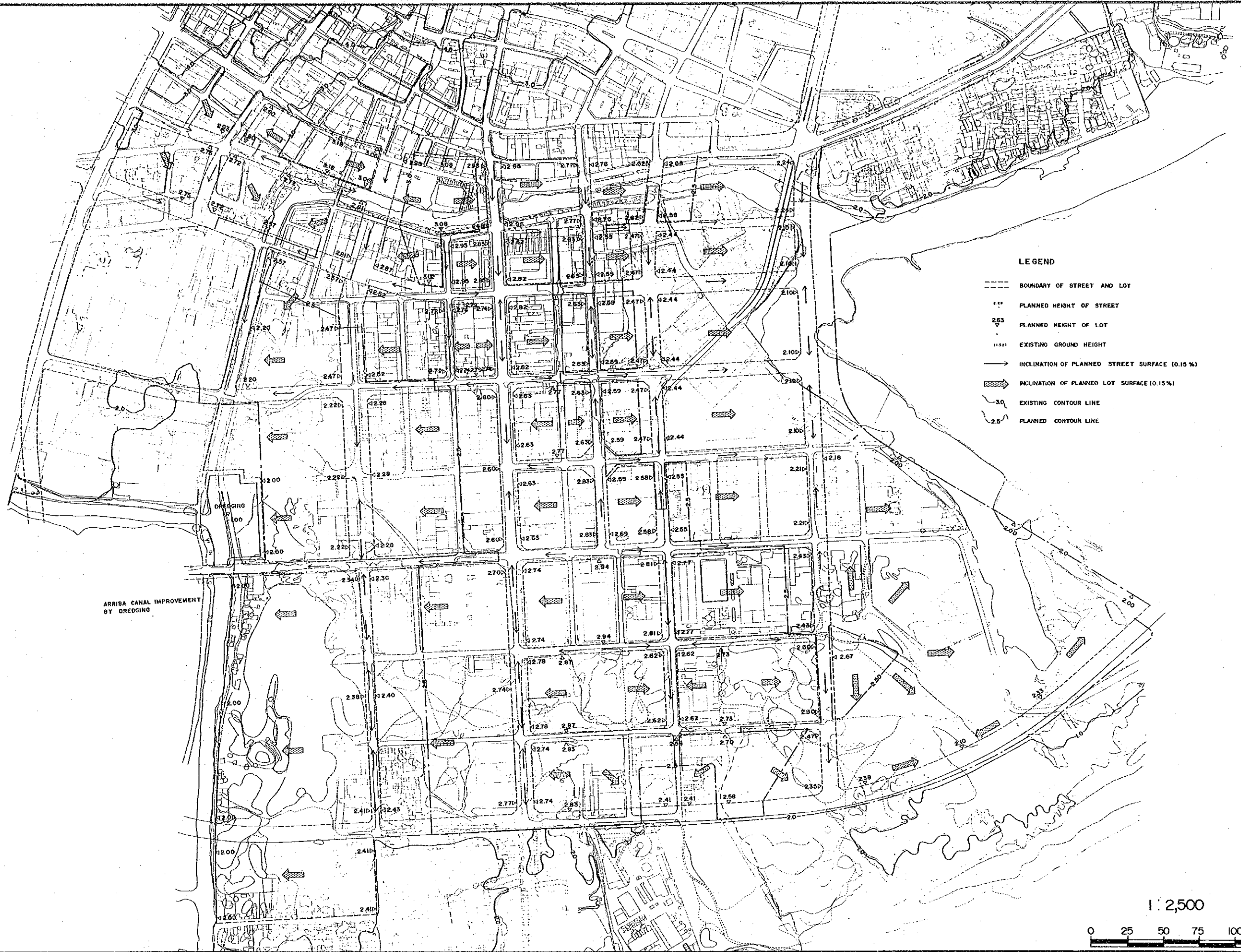


PEDESTRIAN STREET  
CARRERA 44





**PART V**  
**INFRASTRUCTURE AND**  
**URBAN UTILITIES**

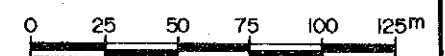


**LEGEND**

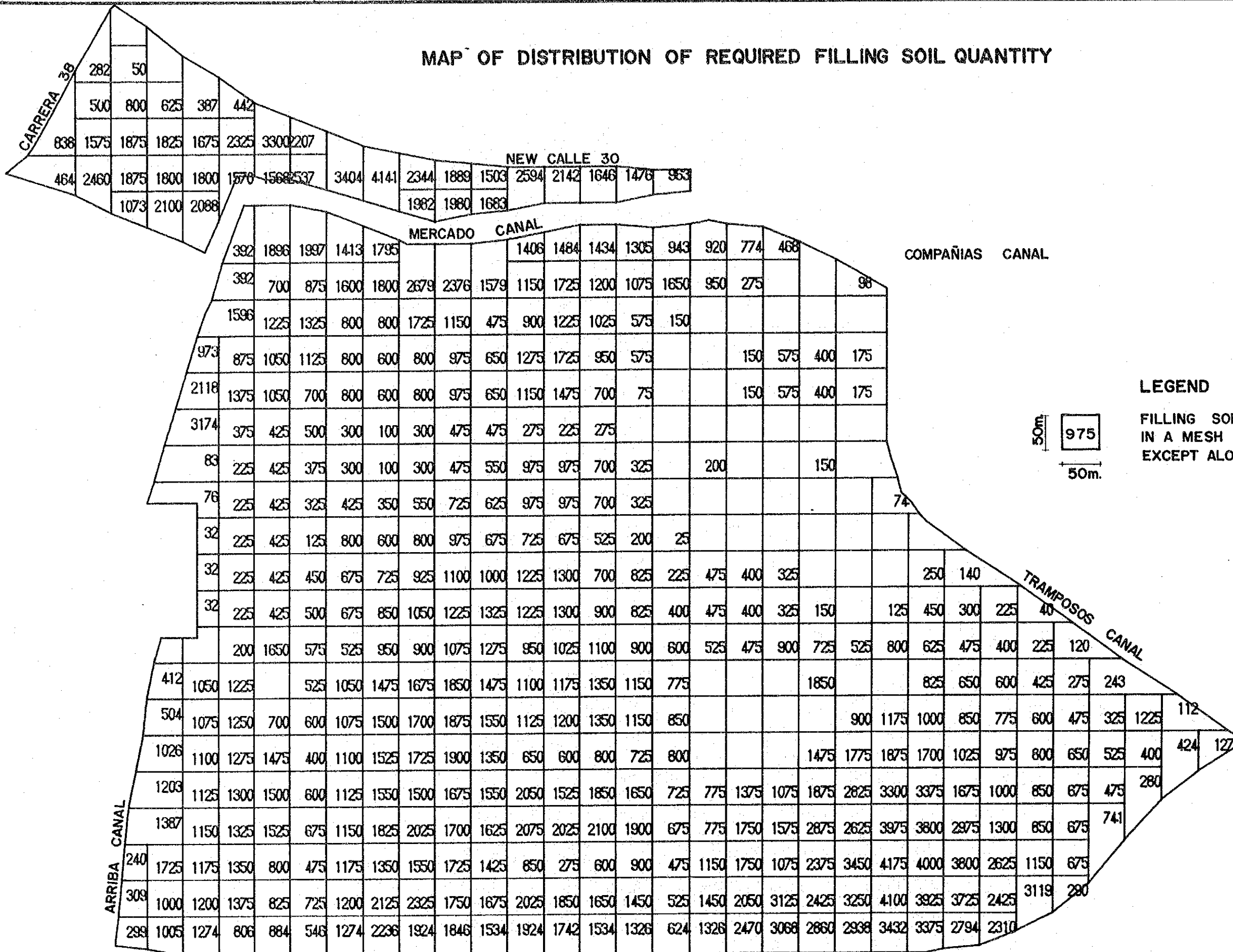
- BOUNDARY OF STREET AND LOT
- PLANNED HEIGHT OF STREET
- PLANNED HEIGHT OF LOT
- ... EXISTING GROUND HEIGHT
- INCLINATION OF PLANNED STREET SURFACE (0.15%)
- INCLINATION OF PLANNED LOT SURFACE (0.15%)
- EXISTING CONTOUR LINE
- - - PLANNED CONTOUR LINE

ARRIBA CANAL IMPROVEMENT BY DREDGING

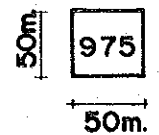
1:2,500



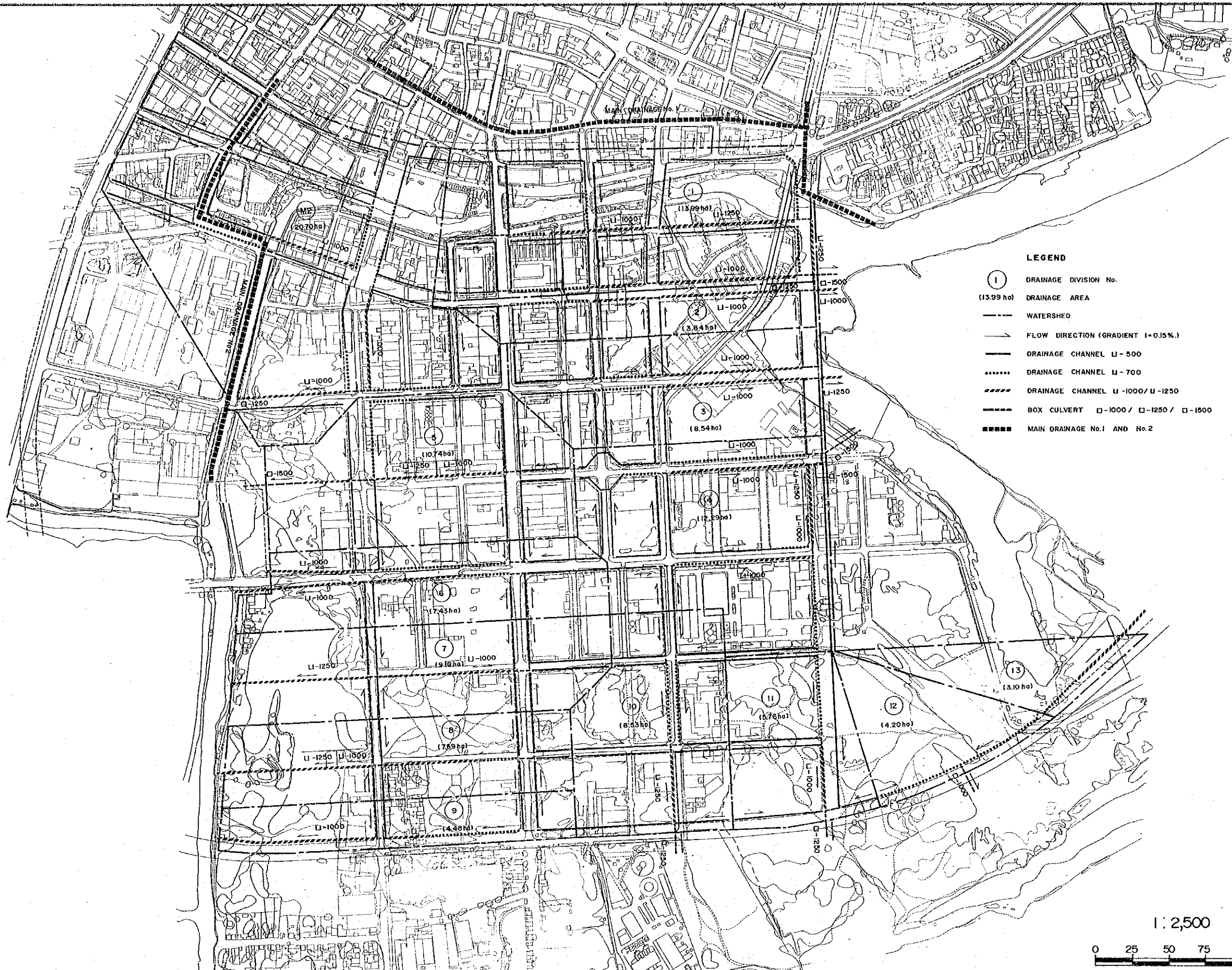
# MAP OF DISTRIBUTION OF REQUIRED FILLING SOIL QUANTITY



**LEGEND**  
 FILLING SOIL QUANTITY  
 IN A MESH ( 2500 m  
 EXCEPT ALONG BOUNDARY )

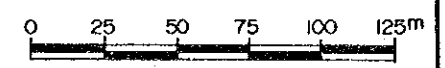


628	1008	780	1008	1105	959
580	930	720	930	1020	886



- LEGEND**
- (1) DRAINAGE DIVISION No.
  - (13.99 ha) DRAINAGE AREA
  - WATERSHED
  - FLOW DIRECTION (GRADIENT 1-0.15%)
  - DRAINAGE CHANNEL U-500
  - DRAINAGE CHANNEL U-700
  - · - · - DRAINAGE CHANNEL U-1000 / U-1250
  - 1000 □-1250 □-1500 BOX CULVERT
  - ==== MAIN DRAINAGE No.1 AND No.2

1 : 2,500

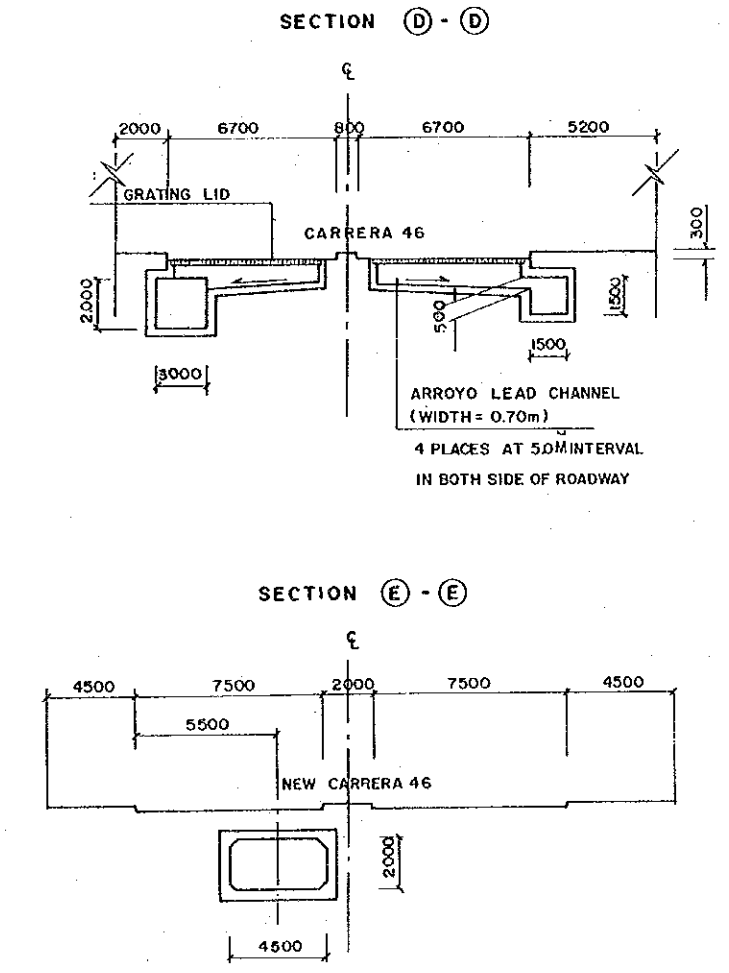
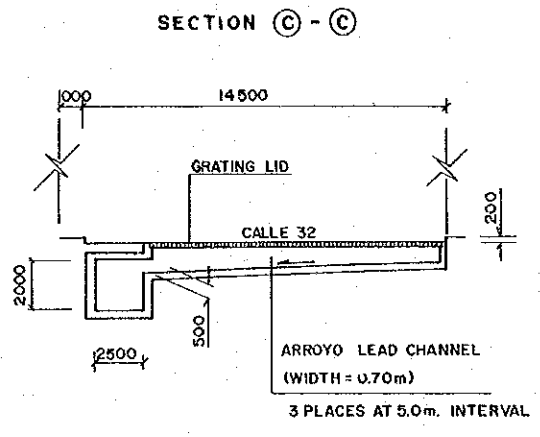
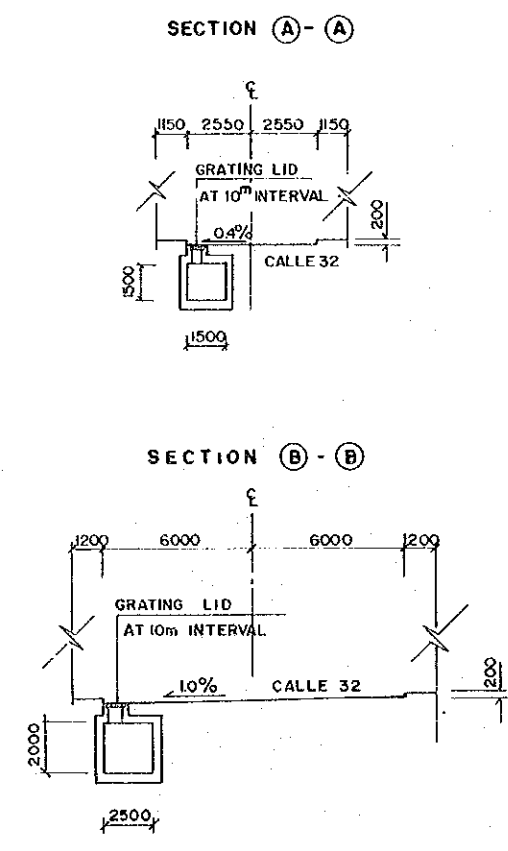
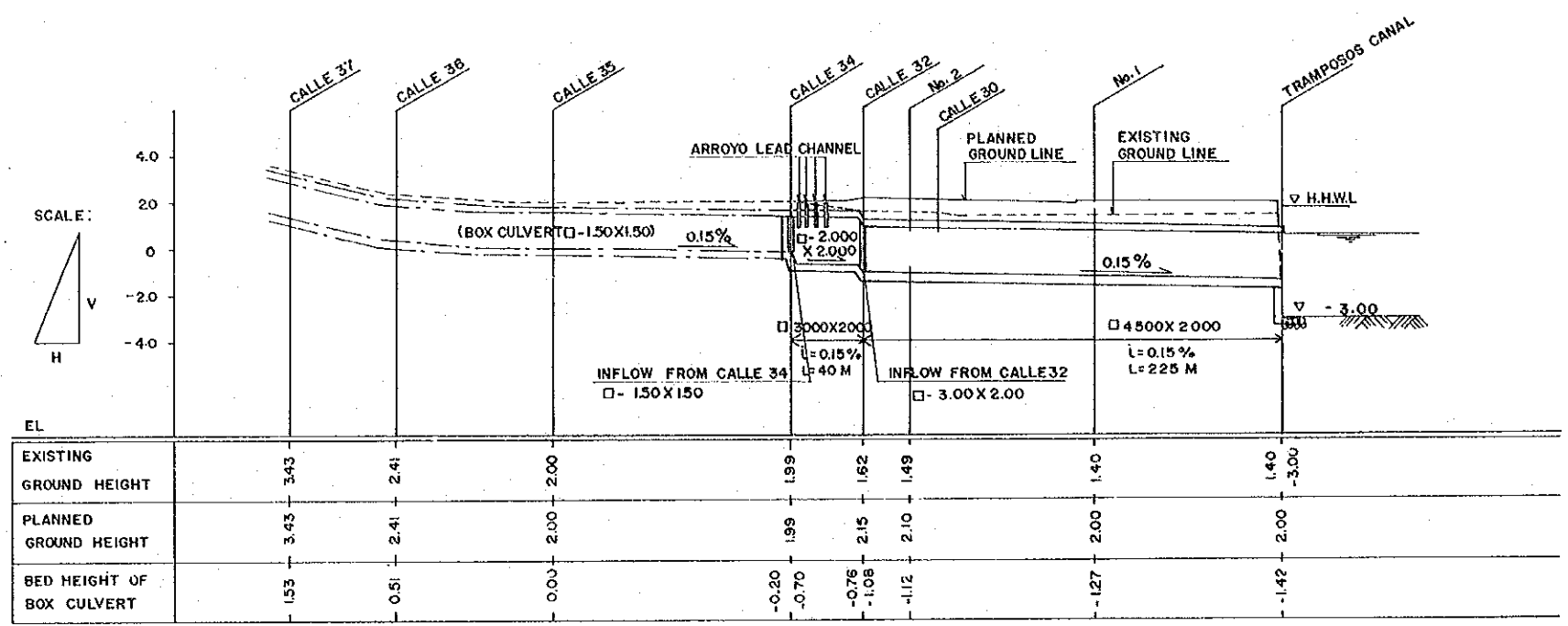


THE FEASIBILITY STUDY ON THE URBAN DEVELOPMENT  
OF THE CENTRAL DISTRICT OF BARRANQUILLA, JICA 1988

DRAINAGE PLAN 111

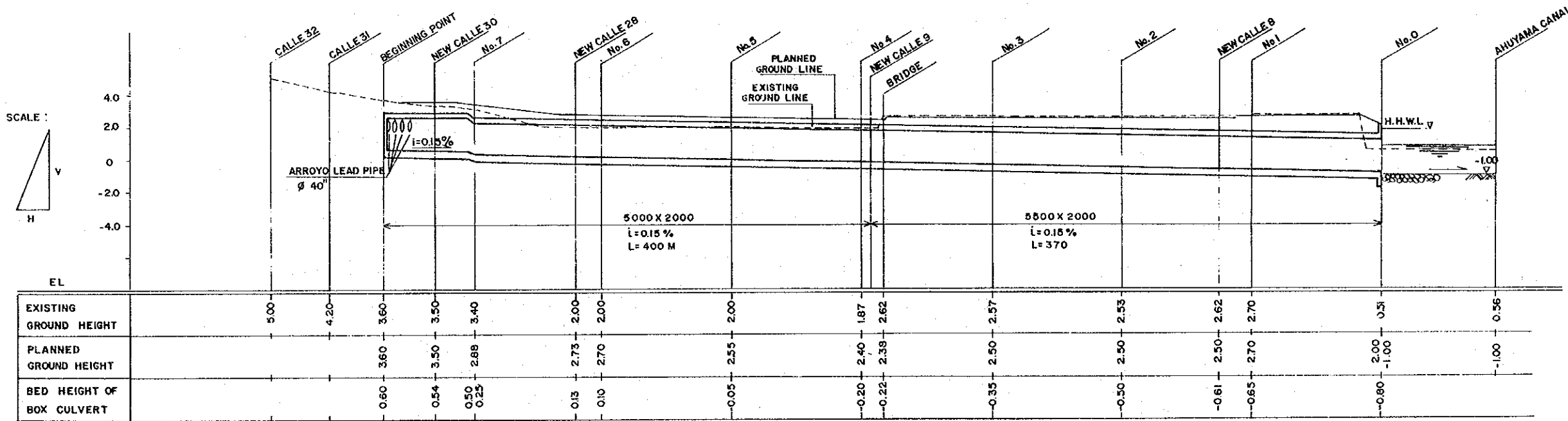
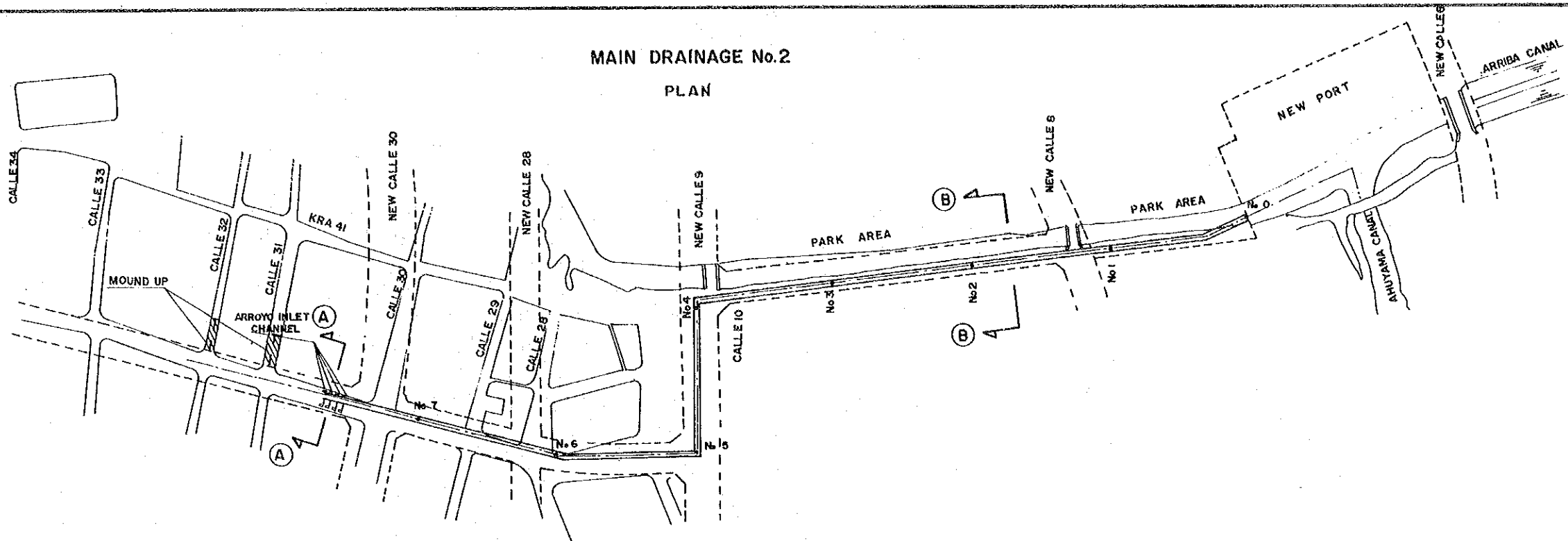


MAIN DRAINAGE No.1 (2/2)  
 PROFILE OF CARRERA 46



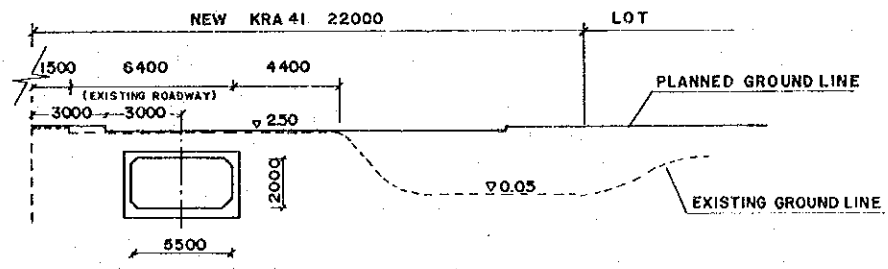
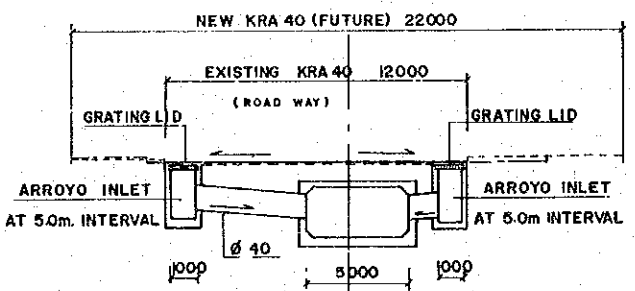


MAIN DRAINAGE No.2  
PLAN



SECTION (A)-(A)

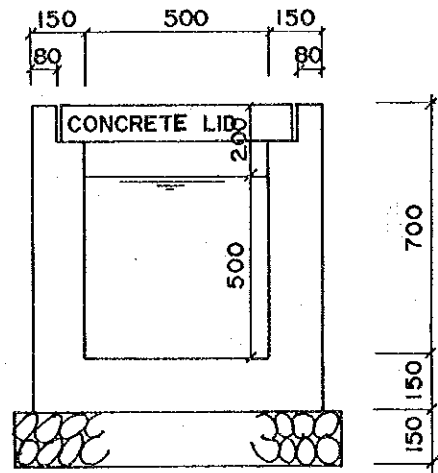
SECTION (B)-(B)



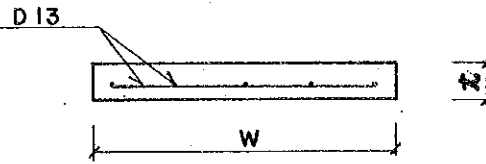
## STANDARD STRUCTURE OF DRAINAGE

### U - SHAPED CHANNEL

U - 500



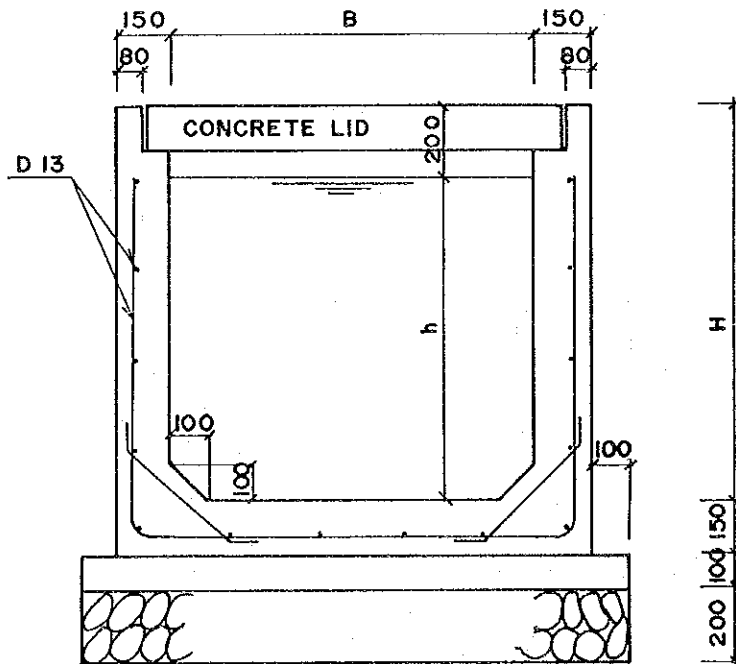
CONCRETE LID



1.0 m. LENGHT/PIECE

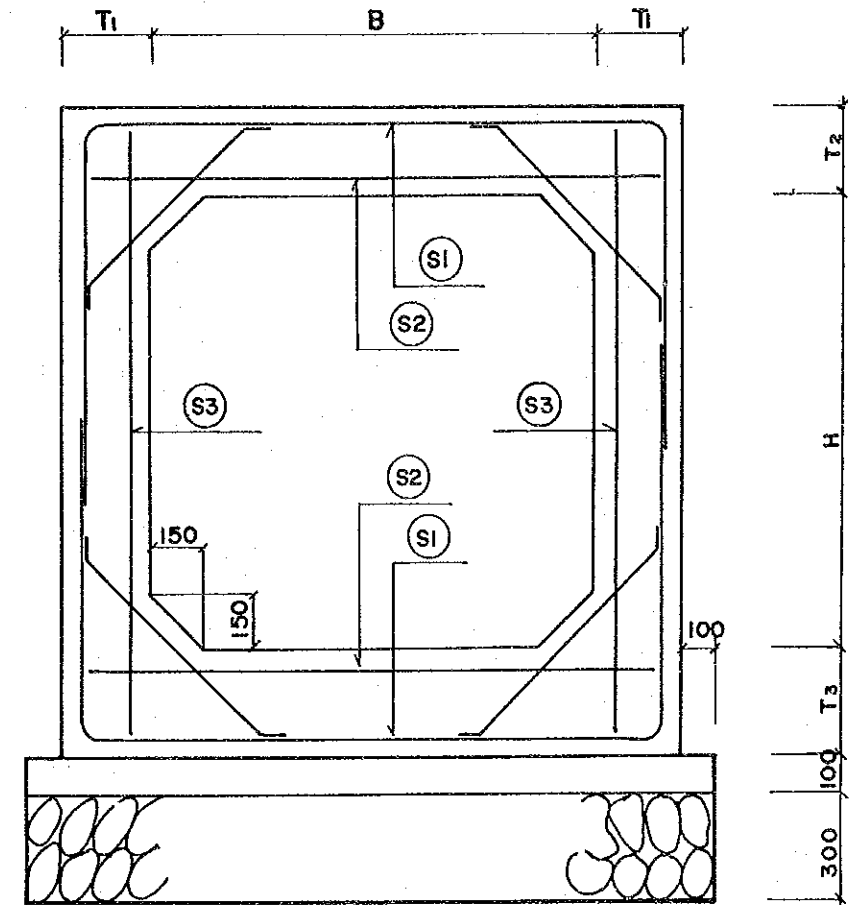
CHANNEL SIZE	w	h
U - 500	630	100
U - 700	830	100
U - 1000	1130	130
U - 1250	1380	150

U - 700 TO U-1250



CHANNEL SIZE	B	h	H
U - 700	700	700	900
U - 1000	1000	1000	1200
U - 1250	1250	1250	1450

### BOX CULVERT

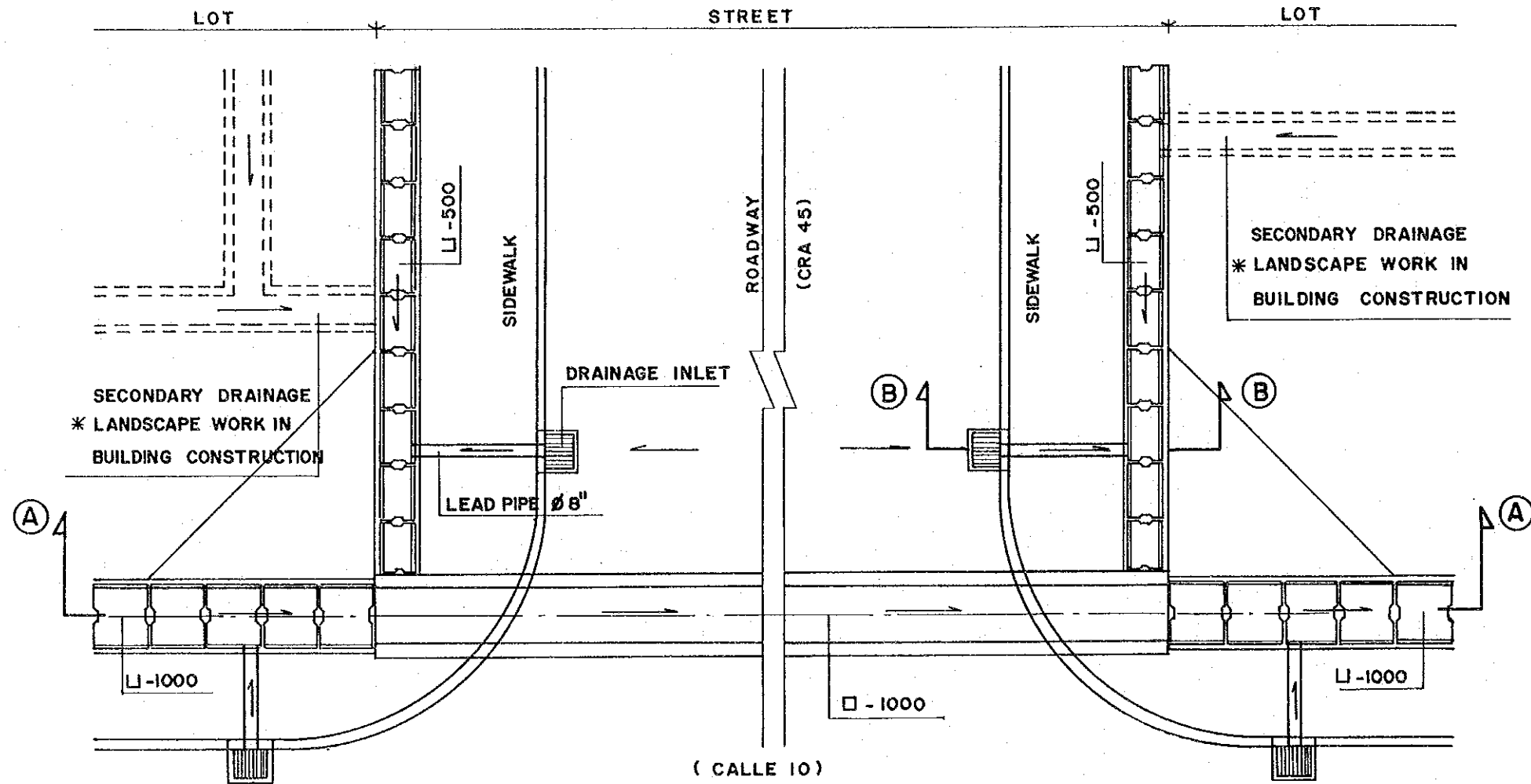


BOX CULVERT SIZE	B	H	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	(S1)	(S2)	(S3)
□ - 1000	1000	1000	250	250	300	D 13	D 13	D 13
□ - 1250	1250	1250	250	250	300	D 13	D 13	D 13
□ - 1500	1500	1500	300	300	350	D 13	D 13	D 13
□ - 2000	2000	2000	300	300	350	D 13	D 13	D 13
□ - 4000 X 2000	4000	2000	300	300	350	D 16	D 19	D 13

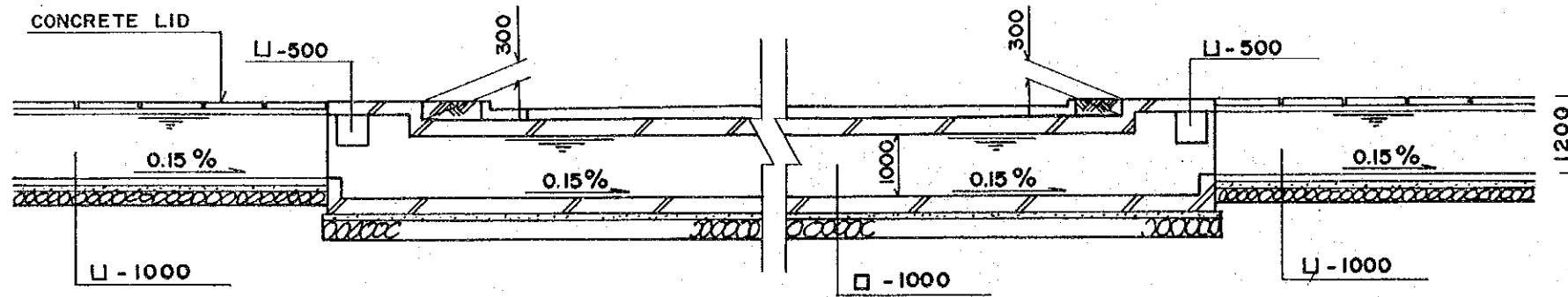


# STANDARD ARRANGEMENT OF DRAINAGE

## PLAN



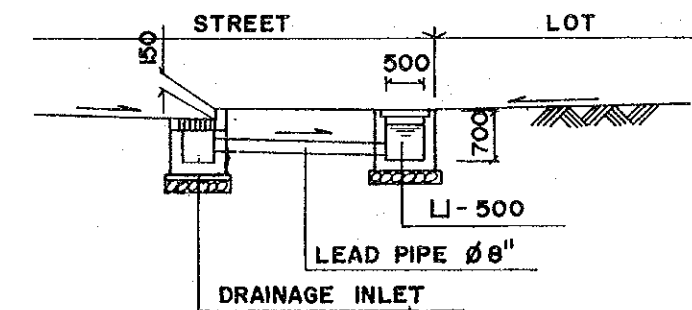
## SECTION (A) - (A)



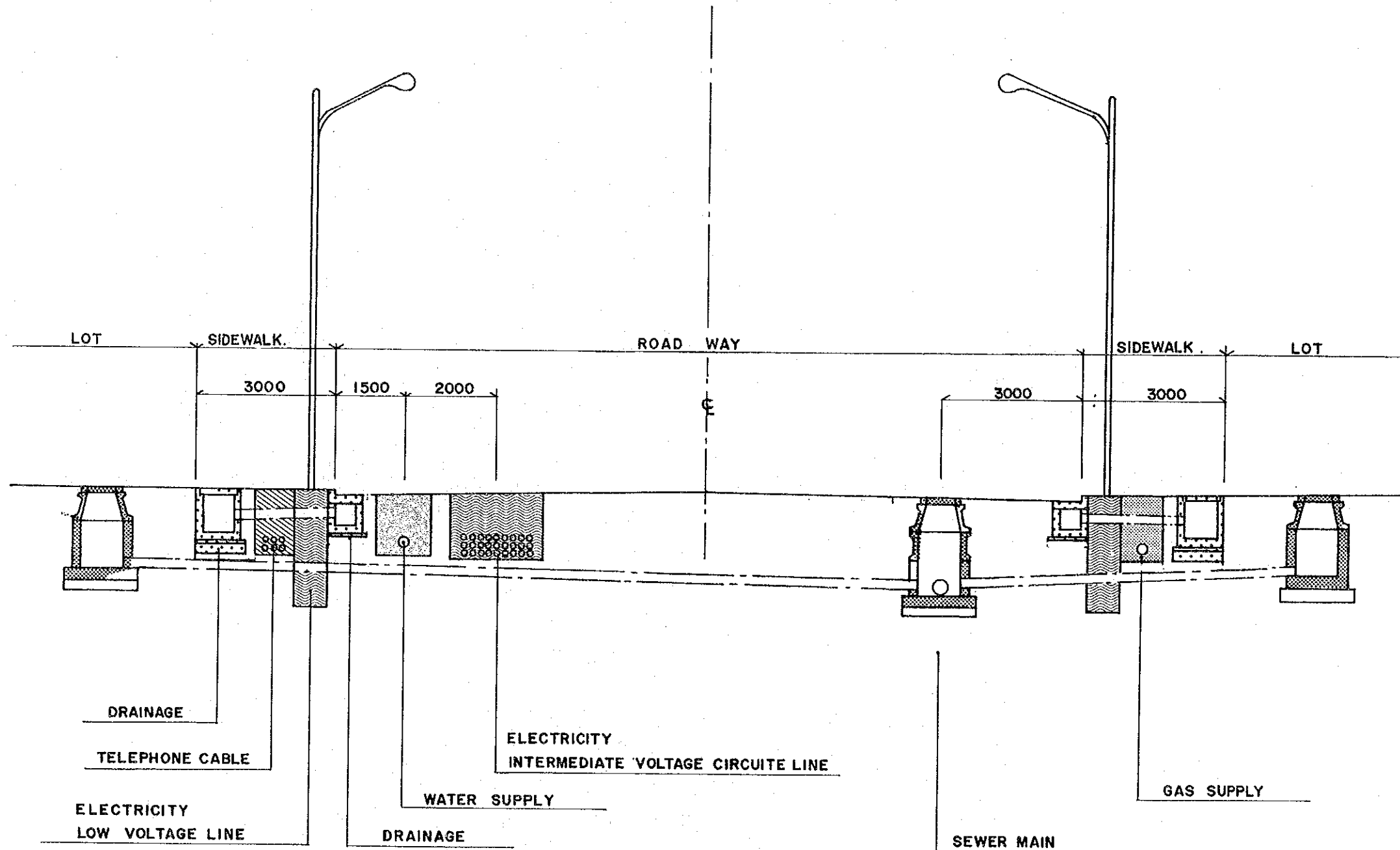
## LIST OF DRAINAGE

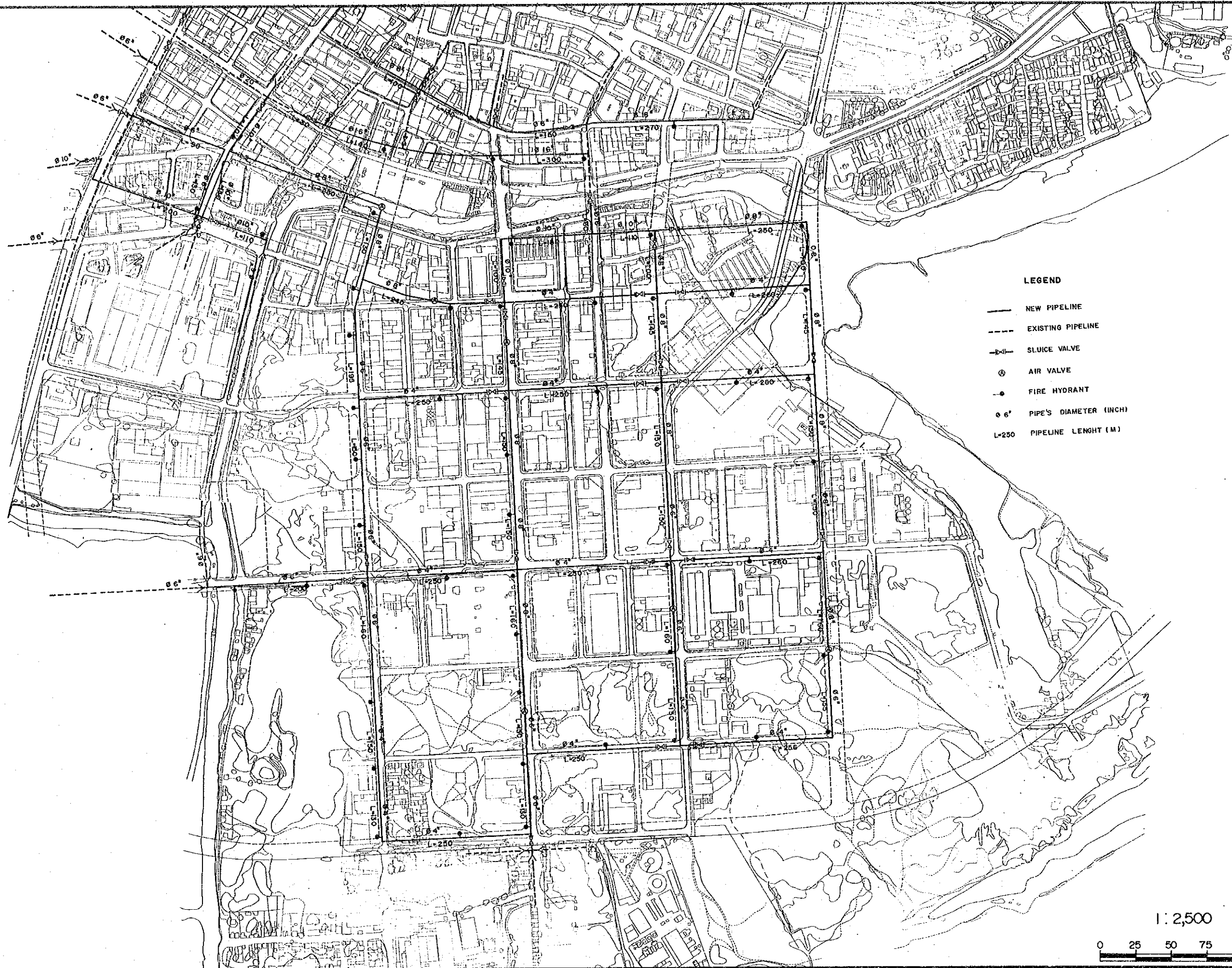
LOCATION	TYPE	REMARK
IN SIDEWALK AND THE PLACE OTHER THAN ROAD WAY	LJ - 500	LI - SHAPED CONCRETE CHANNEL WITH CONCRETE LID
	LJ - 700	
	LJ - 1000	
	LJ - 1250	
IN ROAD WAY	□ - 1500	BOX CULVERT
	□ - 1000	
	□ - 1250	
MAIN DRAINAGE IN CALLE 32, CRA 46 CRA 40 AND CRA 41	□ - 1500	BOX CULVERT
	□ - 2000	
	□ - 4000x2000	

## SECTION (B) - (B)



# TYPICAL ARRANGEMENT OF UTILITY LINES IN STREET





- LEGEND**
- NEW PIPELINE
  - - - EXISTING PIPELINE
  - ⊥ SLUICE VALVE
  - ⊕ AIR VALVE
  - FIRE HYDRANT
  - ø 6" PIPE'S DIAMETER (INCH)
  - L=250 PIPELINE LENGHT (M)

1:2,500

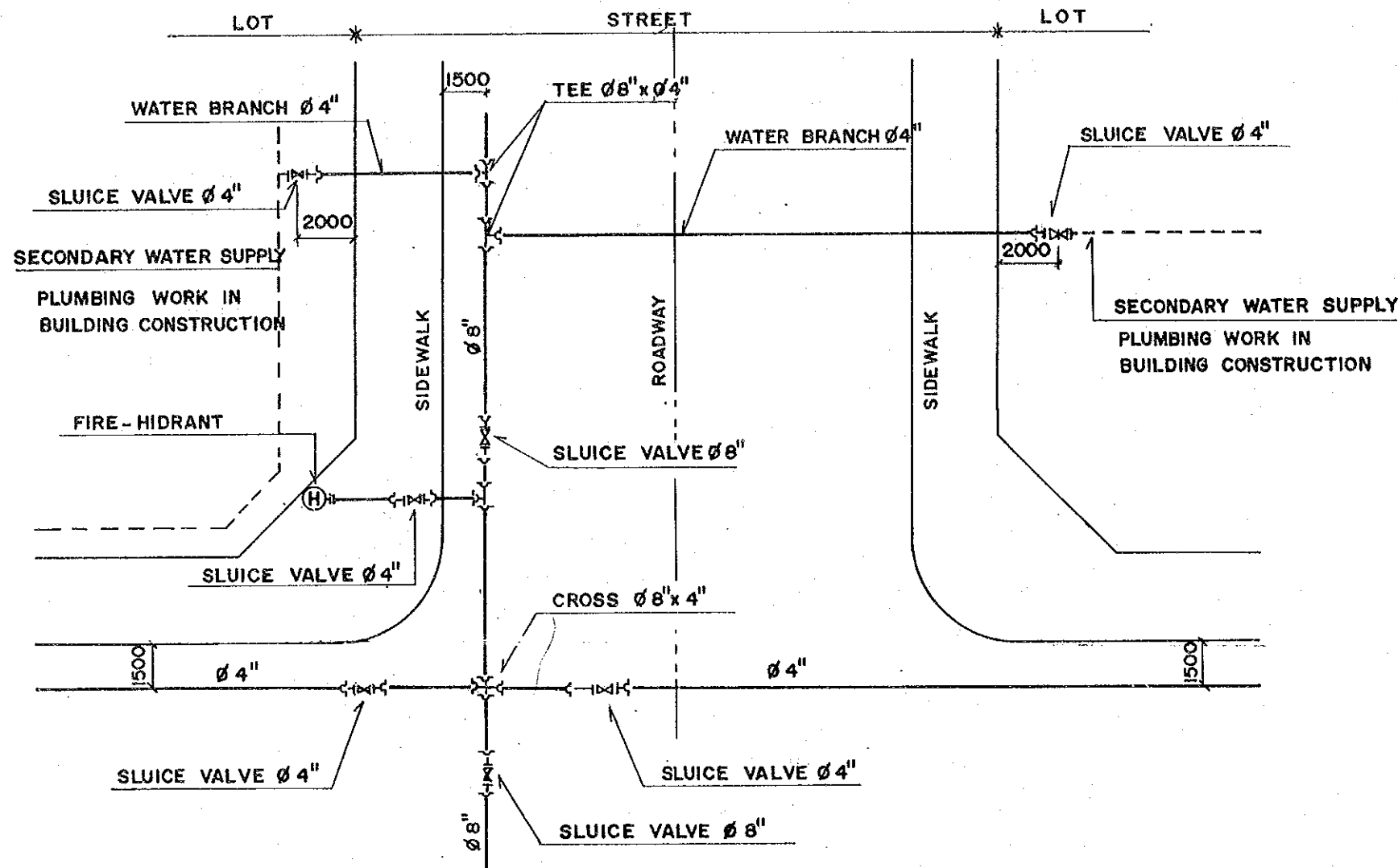


THE FEASIBILITY STUDY ON THE URBAN DEVELOPMENT  
OF THE CENTRAL DISTRICT OF BARRANQUILLA, JICA 1988

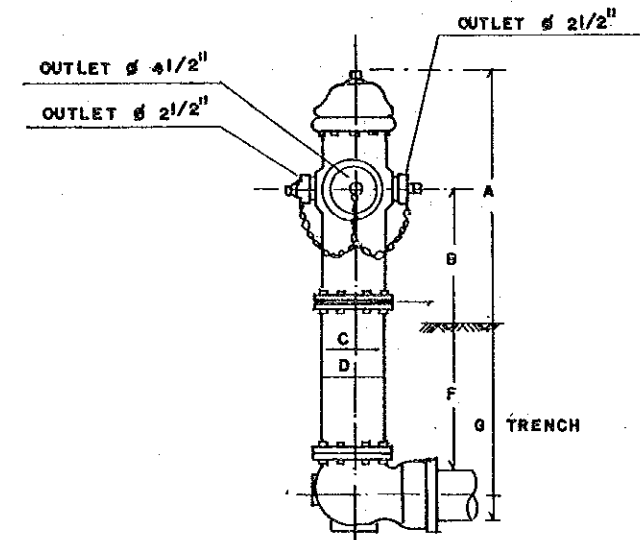
WATER SUPPLY NETWORK 118

# STANDARD ARRANGEMENT OF WATER SUPPLY FACILITIES

## TYPICAL PLAN

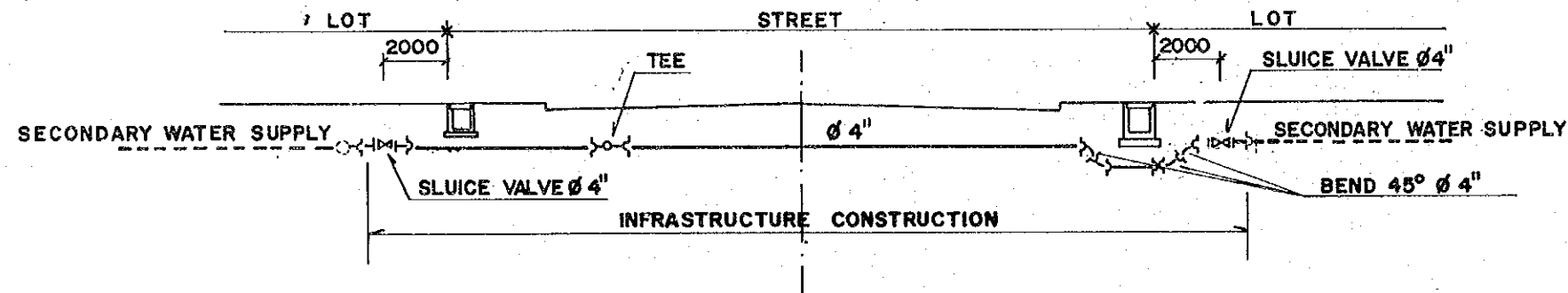


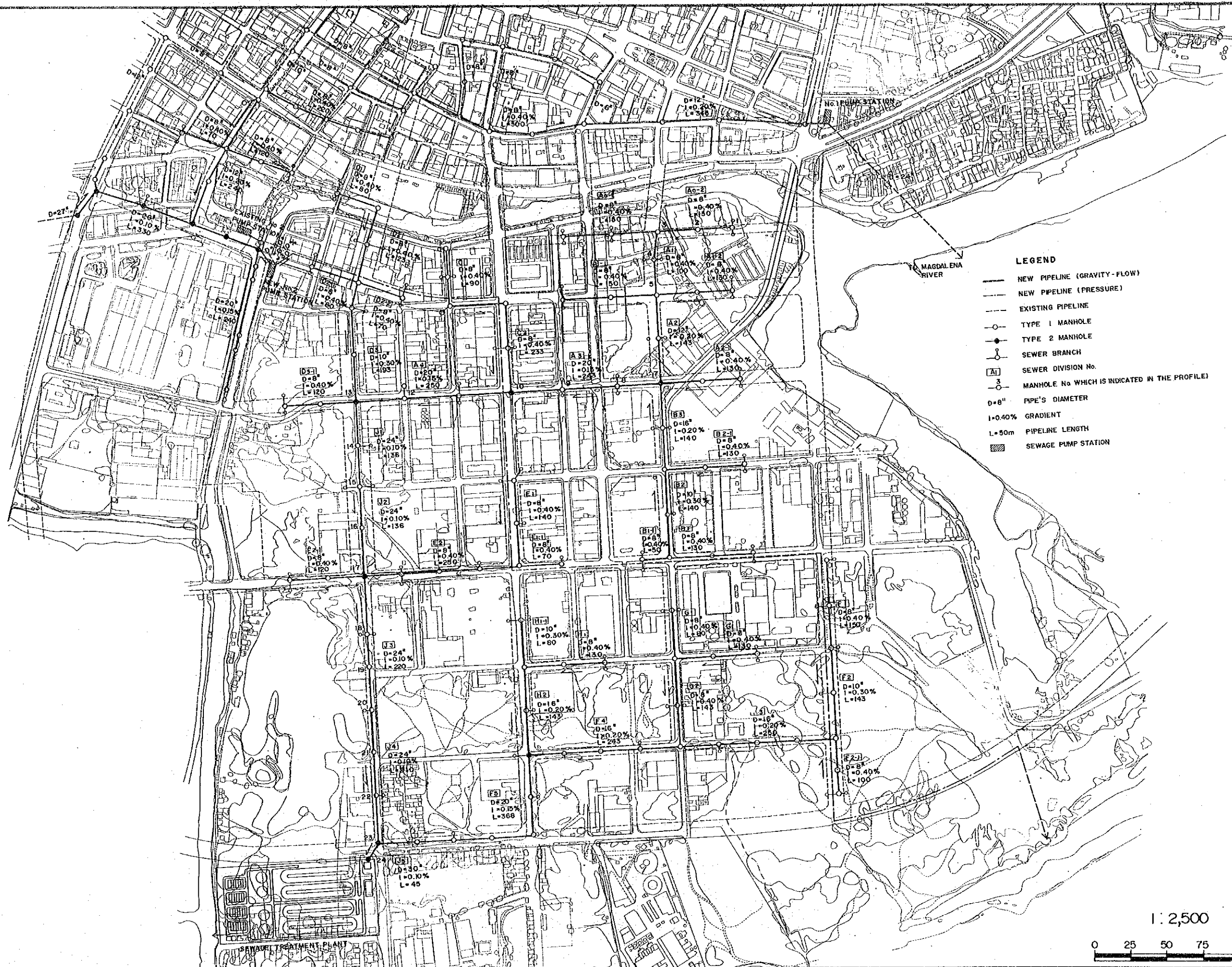
## FIRE - HYDRANT



A	28 3/4"
B	18"
C	7 1/4"
D	8 1/4"
E	2 3/4"
F	35 3/4"
G	42 13/16"

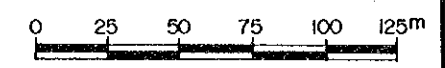
## TYPICAL SECTION OF WATER BRANCH





- LEGEND**
- NEW PIPELINE (GRAVITY-FLOW)
  - NEW PIPELINE (PRESSURE)
  - - - EXISTING PIPELINE
  - TYPE 1 MANHOLE
  - TYPE 2 MANHOLE
  - └─ SEWER BRANCH
  - [A] SEWER DIVISION No.
  - 3 MANHOLE No WHICH IS INDICATED IN THE PROFILE
  - D=8" PIPE'S DIAMETER
  - I=0.40% GRADIENT
  - L=50m PIPELINE LENGTH
  - ▣ SEWAGE PUMP STATION

1:2,500

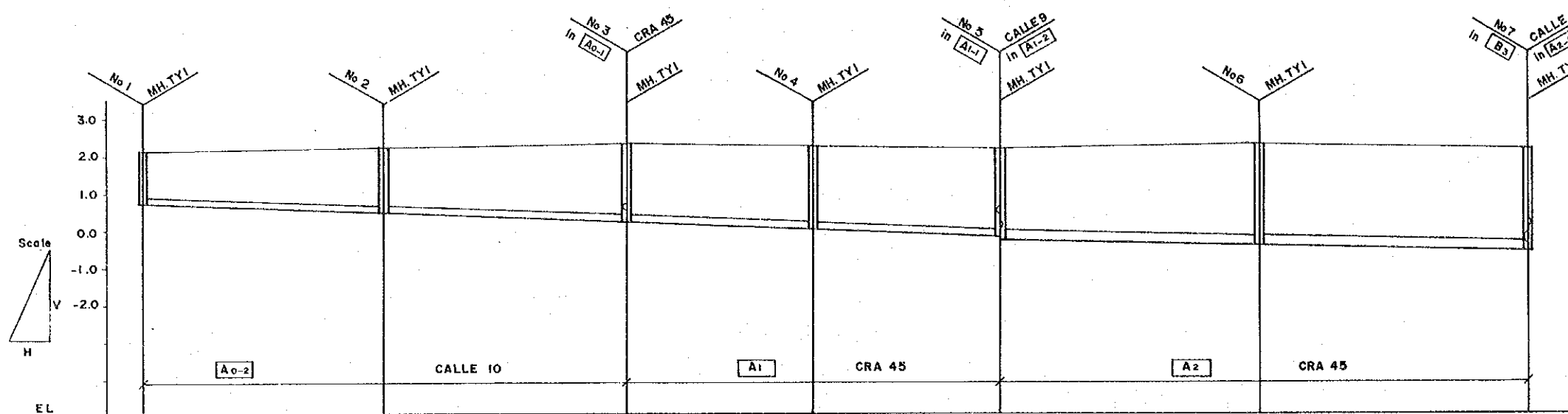


THE FEASIBILITY STUDY ON THE URBAN DEVELOPMENT  
OF THE CENTRAL DISTRICT OF BARRANQUILLA, JICA 1988

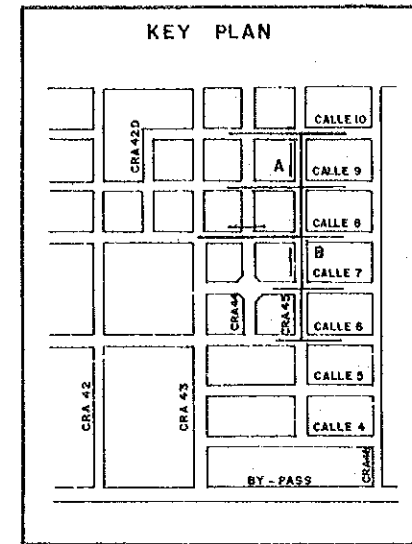
SEWER NETWORK 120

PROFILE OF MAIN SEWER (1/3)

ROUTE A

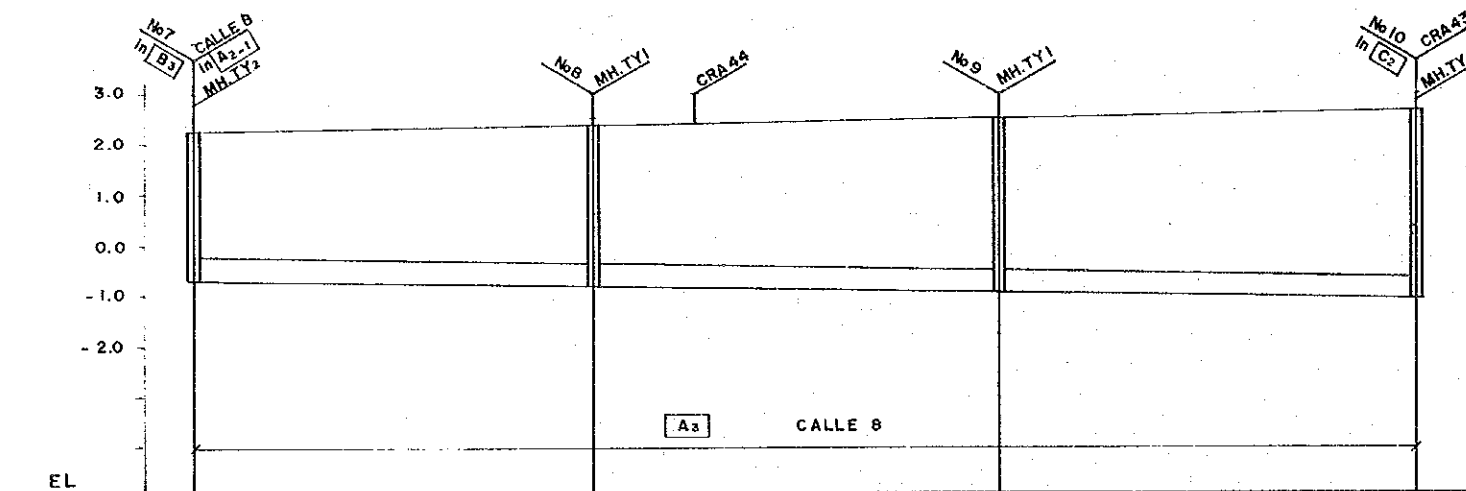


GROUND HEIGHT	2.21	D=8"	2.31	D=8"	2.40	D=8"	2.33	D=8"	2.26	2.26	D=12"	2.36	D=12"	2.26
PIPE'S BED HEIGHT	0.81	i=0.40%	0.55	i=0.40%	0.29	i=0.40%	0.09	i=0.40%	-0.11	-0.21	i=0.20%	-0.35	i=0.20%	-0.50
EARTH COVERING	1.20	L=65 m	1.56	L=65 m	1.91	L=50 m	2.04	L=50 m	2.17	2.17	L=70 m	2.41	L=73 m	2.86



LEGEND

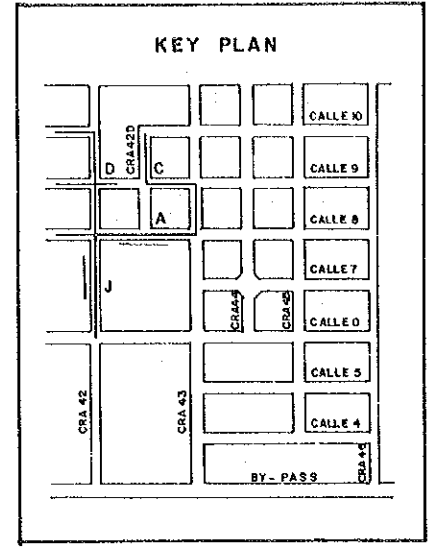
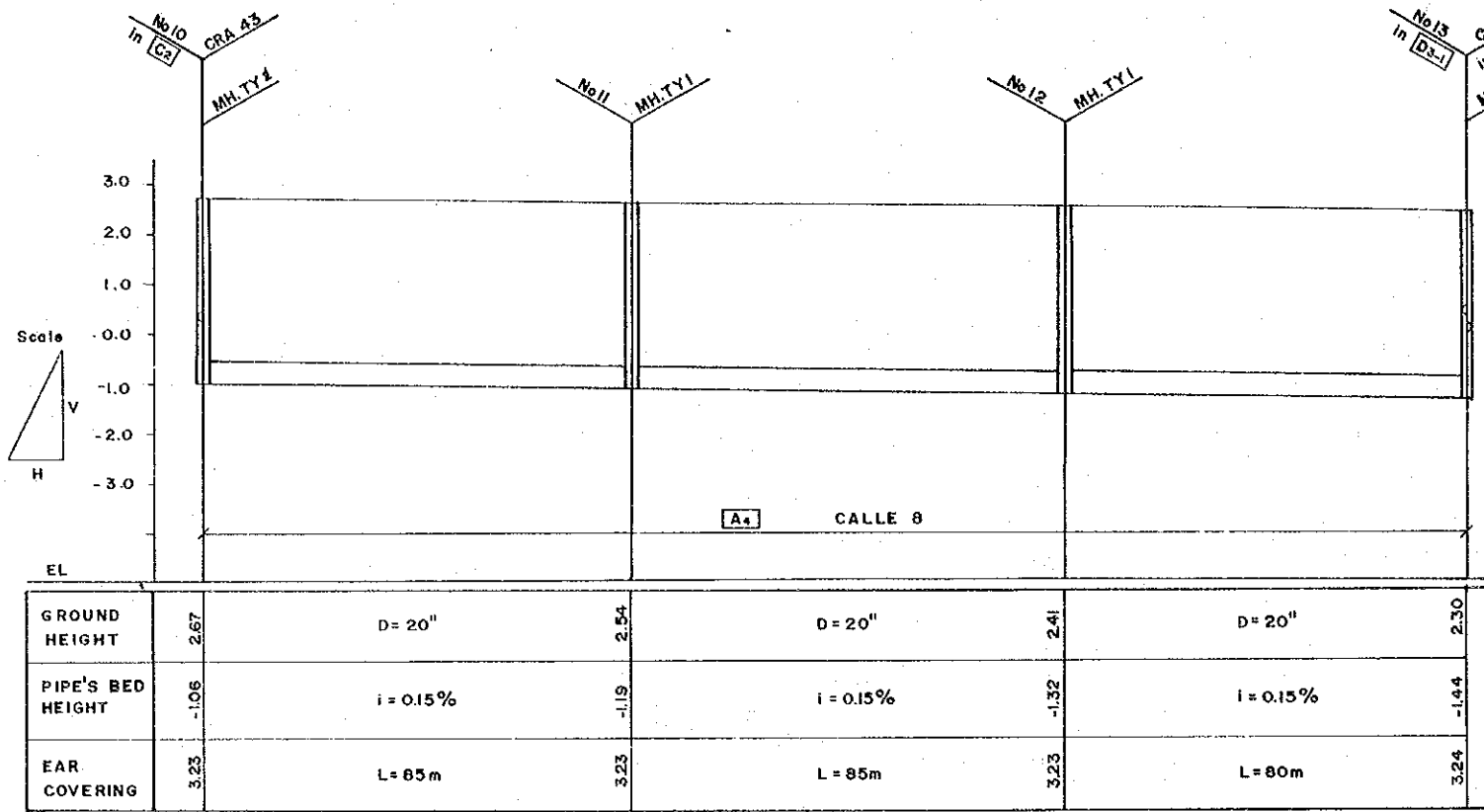
- No. 1 MANHOLE No.
- MH. TY 1 TYPE 1 MANHOLE
- MH. TY 2 TYPE 2 MANHOLE
- in A0-1 INFLOW OF PIPELINE A0-1
- D=8" PIPE'S DIAMETER
- i=0.40% GRADIENT
- L=65 m PIPELINE LENGTH



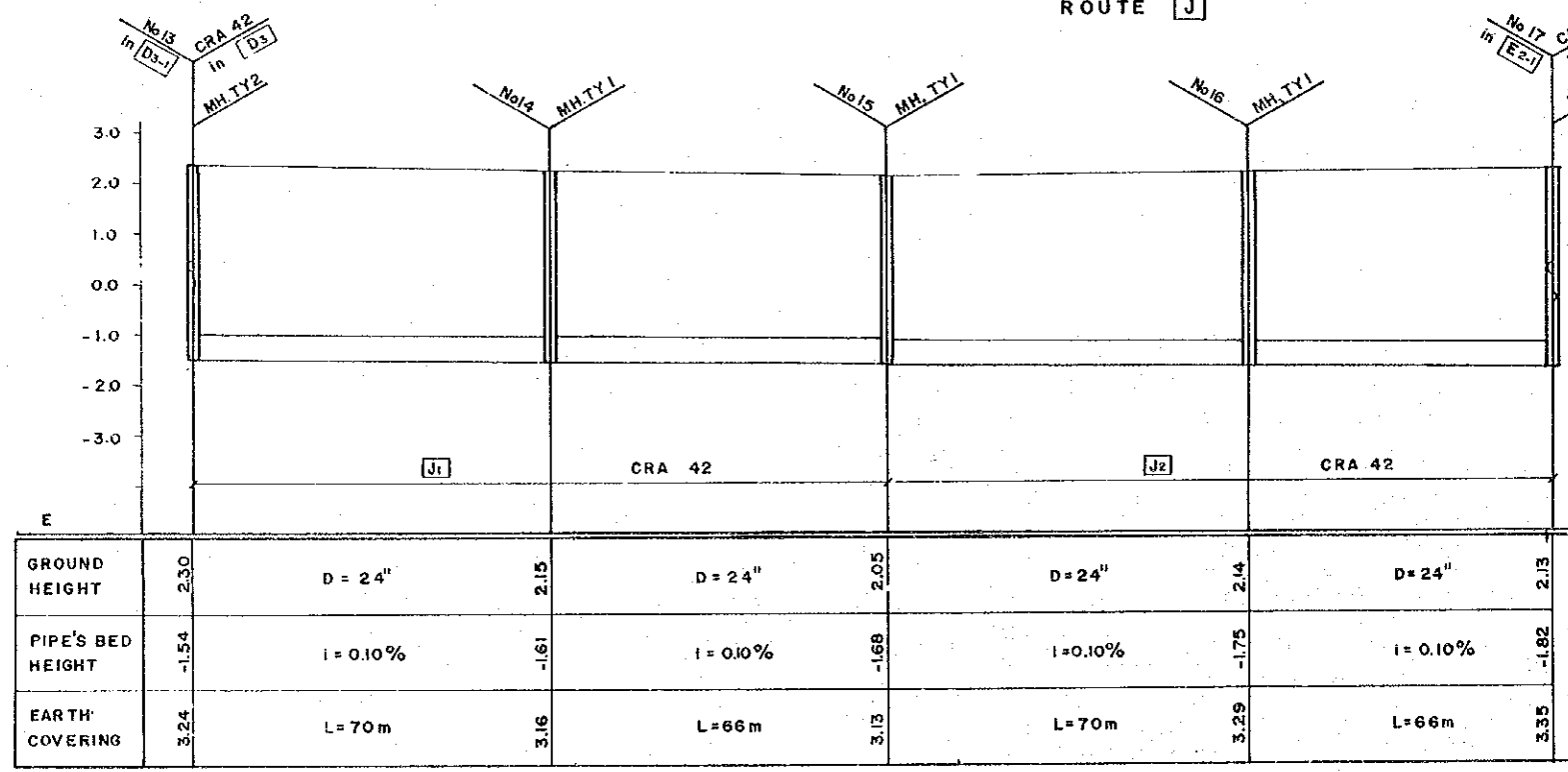
GROUND HEIGHT	2.26	D=20"	2.38	D=20"	2.50	D=20"	2.67
PIPE'S BED HEIGHT	-0.7	i=0.15%	-0.82	i=0.15%	-0.94	i=0.15%	-1.06
EARTH COVERING	2.46	L=80 m	2.70	L=80 m	2.94	L=83 m	3.23

PROFILE OF MAIN SEWER (2/3)

ROUTE A



ROUTE J

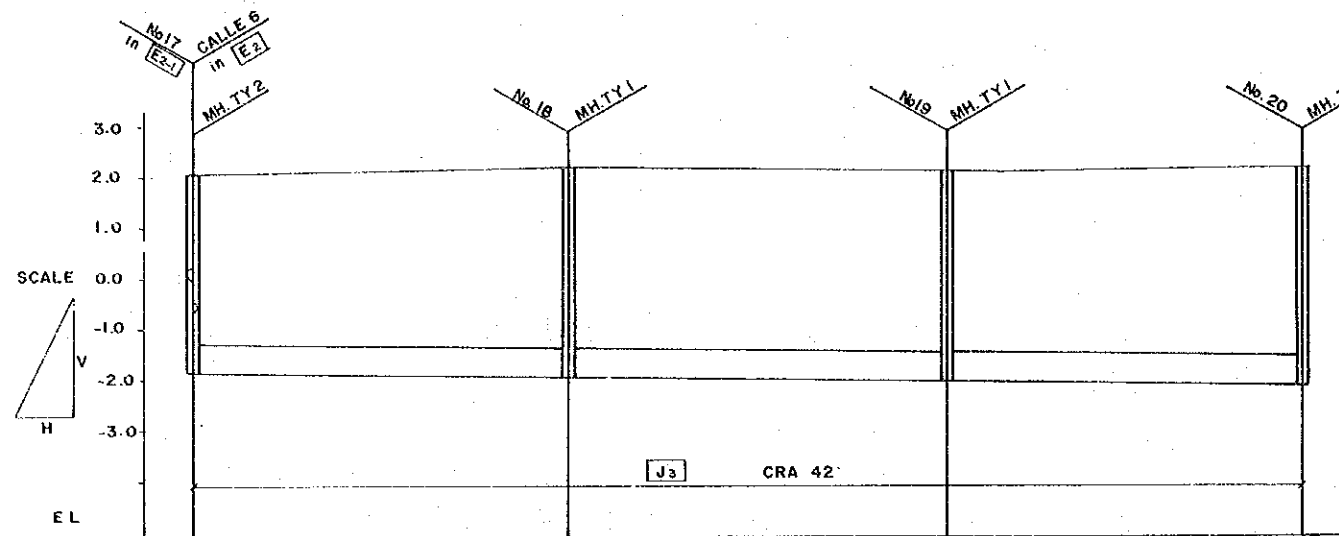
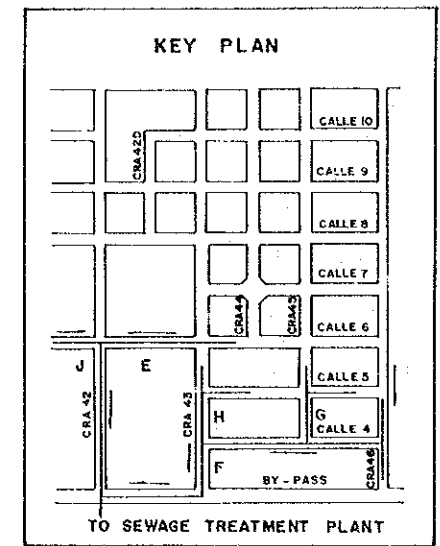


- LEGEND**
- No. I MANHOLE No.
  - MH. TY 1 TYPE I MANHOLE
  - MH. TY 2 TYPE 2 MANHOLE
  - in [A0-1] INFLOW OF [A0-1] PIPELINE
  - D = 8" PIPE'S DIAMETER
  - i = 0.40% GRADIENT
  - L = 65 m PIPELINE LENGTH



PROFILE OF MAIN SEWER (3/3)

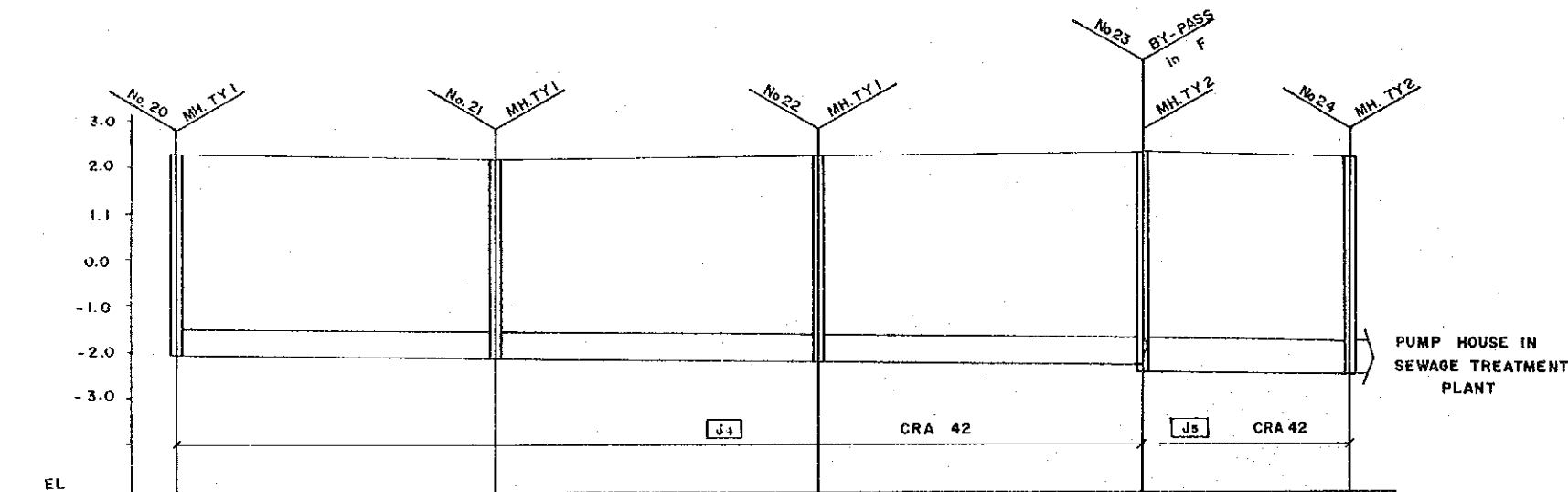
ROUTE J



GROUND HEIGHT	2.13	D = 24"	2.27	D = 24"	2.18	D = 24"	2.30
PIPE'S BED HEIGHT	-1.82	i = 0.10%	-1.90	i = 0.10%	-1.97	i = 0.10%	-2.04
EARTH COVERING	3.35	L = 75m	3.57	L = 75m	3.55	L = 70m	3.59

LEGEND

- No. 1 MANHOLE No.
- MH. TY 1 TYPE 1 MANHOLE
- MH. TY 2 TYPE 2 MANHOLE
- in A<sub>0-1</sub> INFLOW OF PIPELINE A<sub>0-1</sub>
- D = 8" PIPE'S DIAMETER
- i = 0.40% GRADIENT
- L = 65 m PIPELINE LENGTH

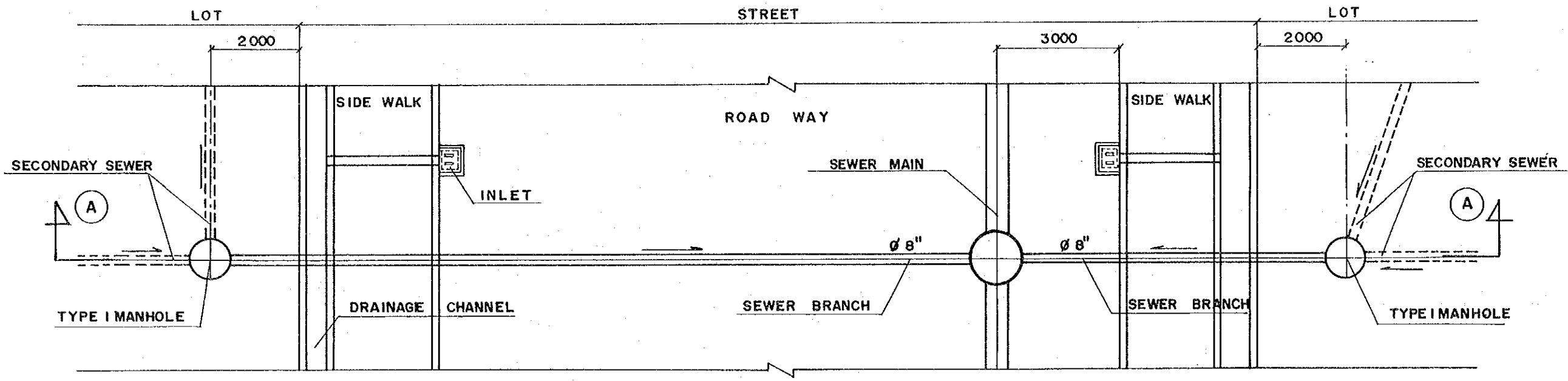


GROUND HEIGHT	2.30	D = 24"	2.20	D = 24"	2.29	D = 24"	2.37	D = 24"	2.37	D = 30"	2.28
PIPE'S BED HEIGHT	-2.04	i = 0.10%	-2.11	i = 0.10%	-2.18	i = 0.10%	-2.25	i = 0.10%	-2.40	i = 0.10%	-2.45
EARTH COVERING	3.74	L = 70m	3.71	L = 70m	3.97	L = 70m	4.02	L = 70m	4.02	L = 45m	3.98

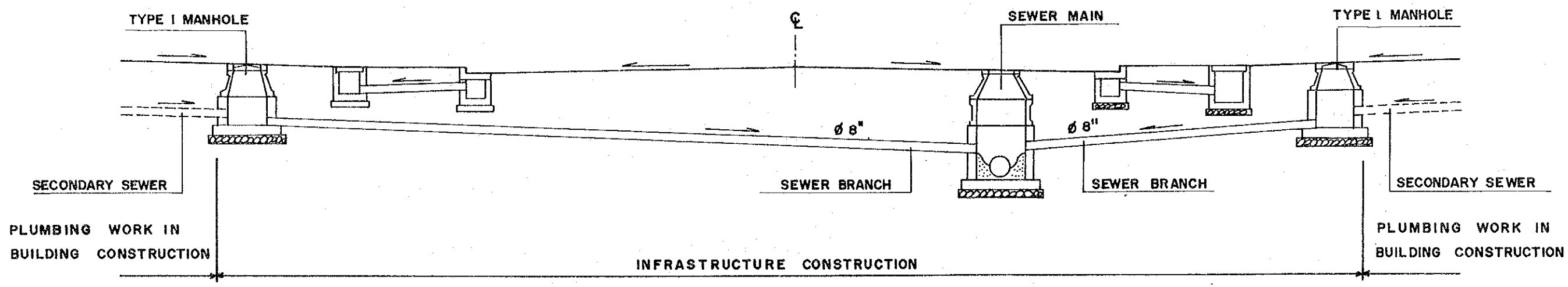


# SEWER BRANCH STANDARD

## PLAN

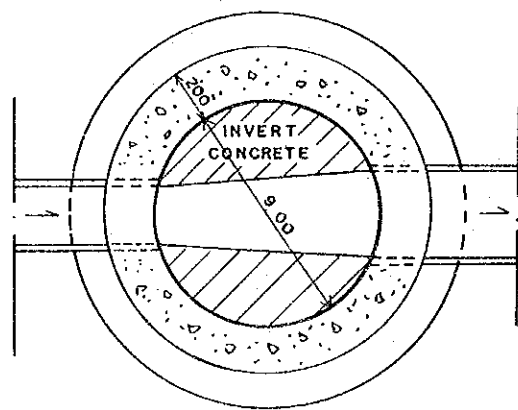
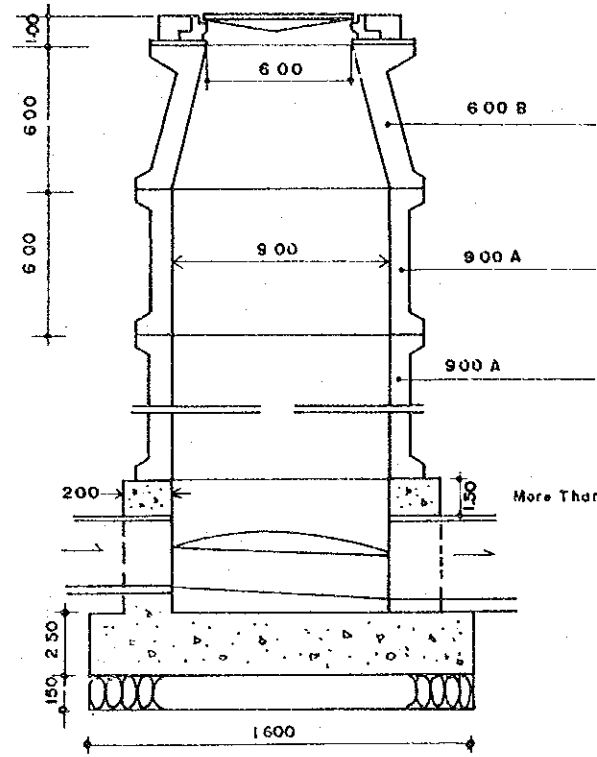


## SECTION A A

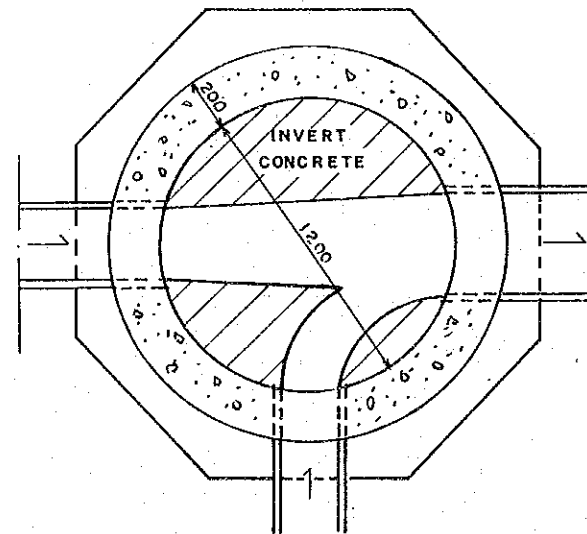
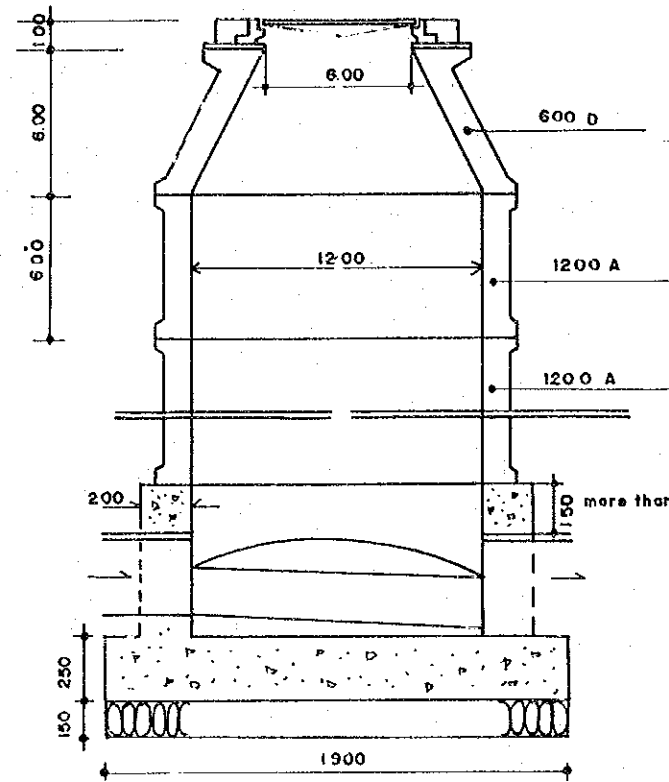


# STANDAR STRUCTURE OF MANHOLE

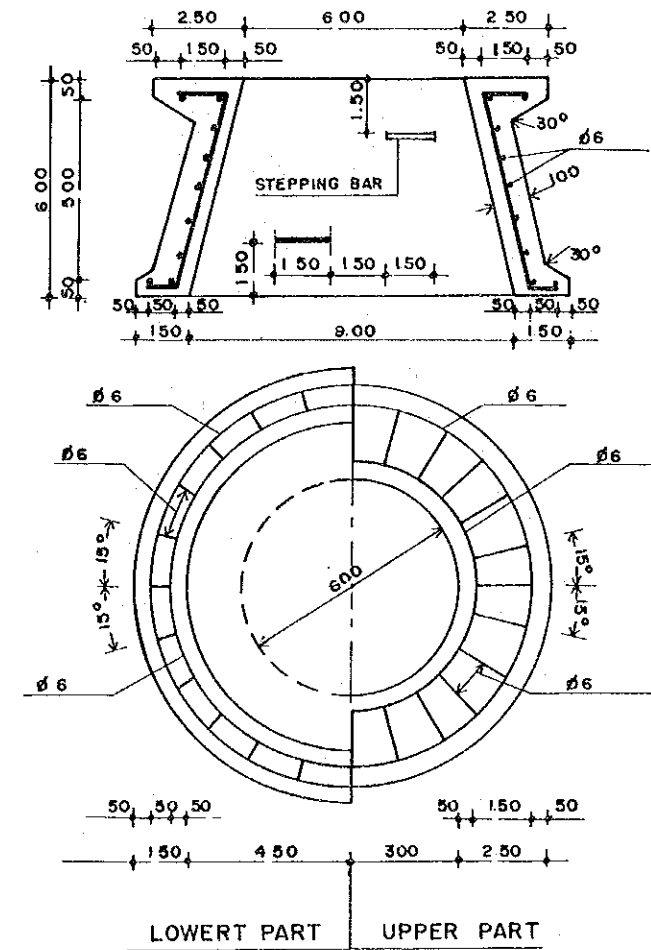
**TYPE 1 MANHOLE**



**TYPE 2 MANHOLE**

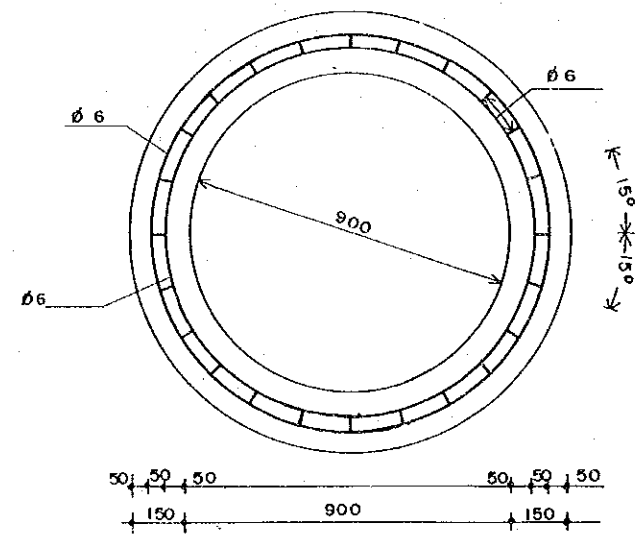
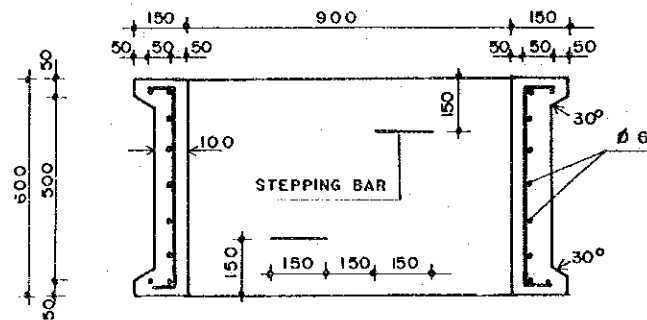


**INCLINED WALL - 600 B FOR TYPE 1 MANHOLE**

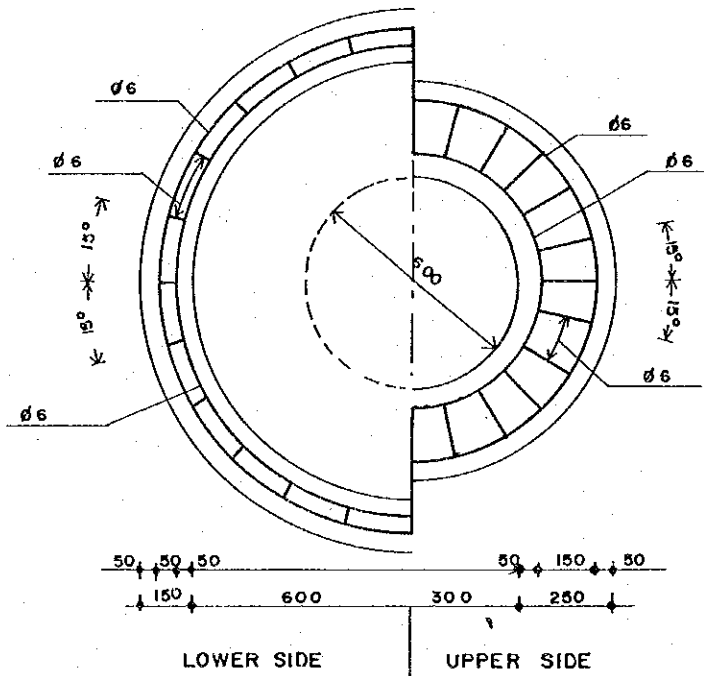
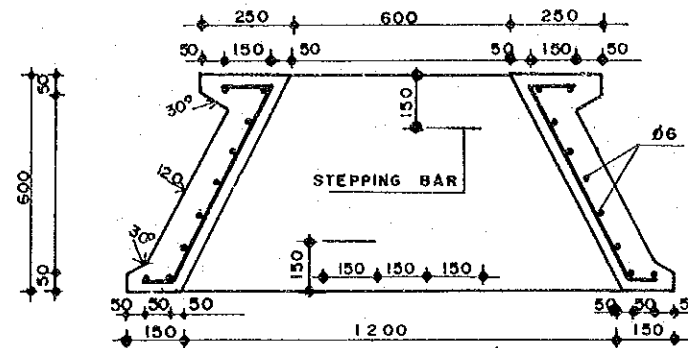


PRE-CAST REINFORCED CONCRETE CYLINDER

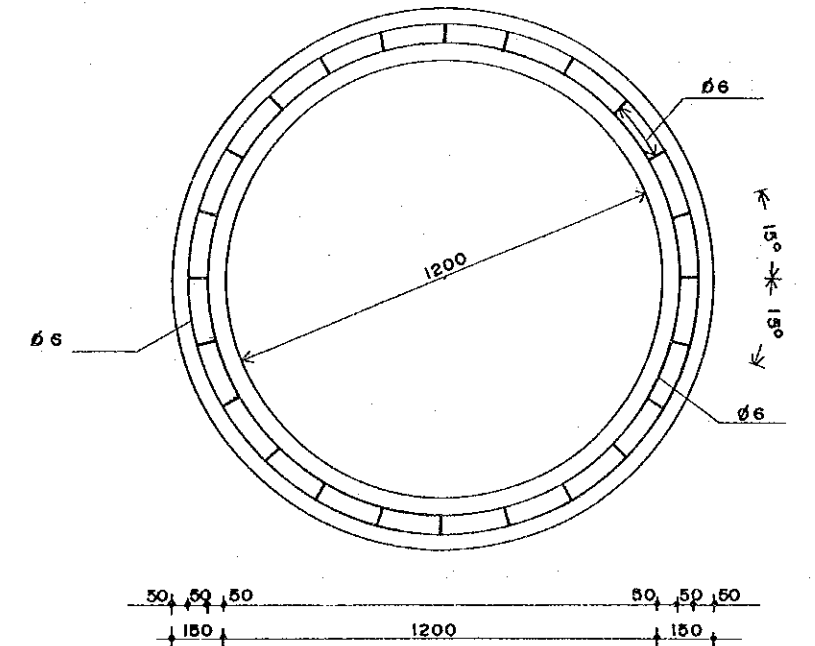
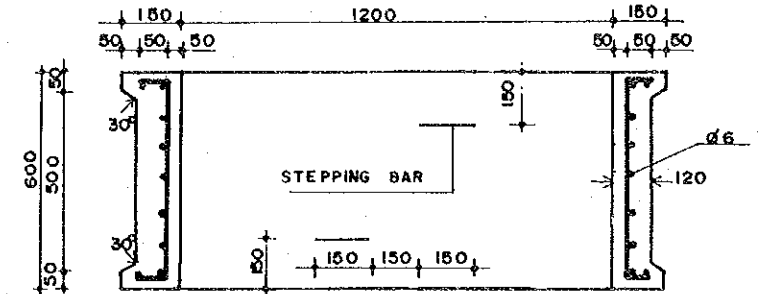
STRAIGHT WALL-900 A For TYPE I MANHOLE



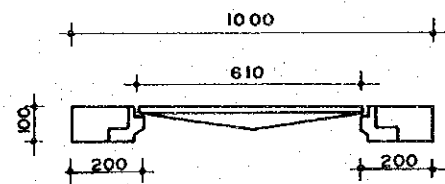
INCLINED WALL 600 D For TYPE 2 MANHOLE



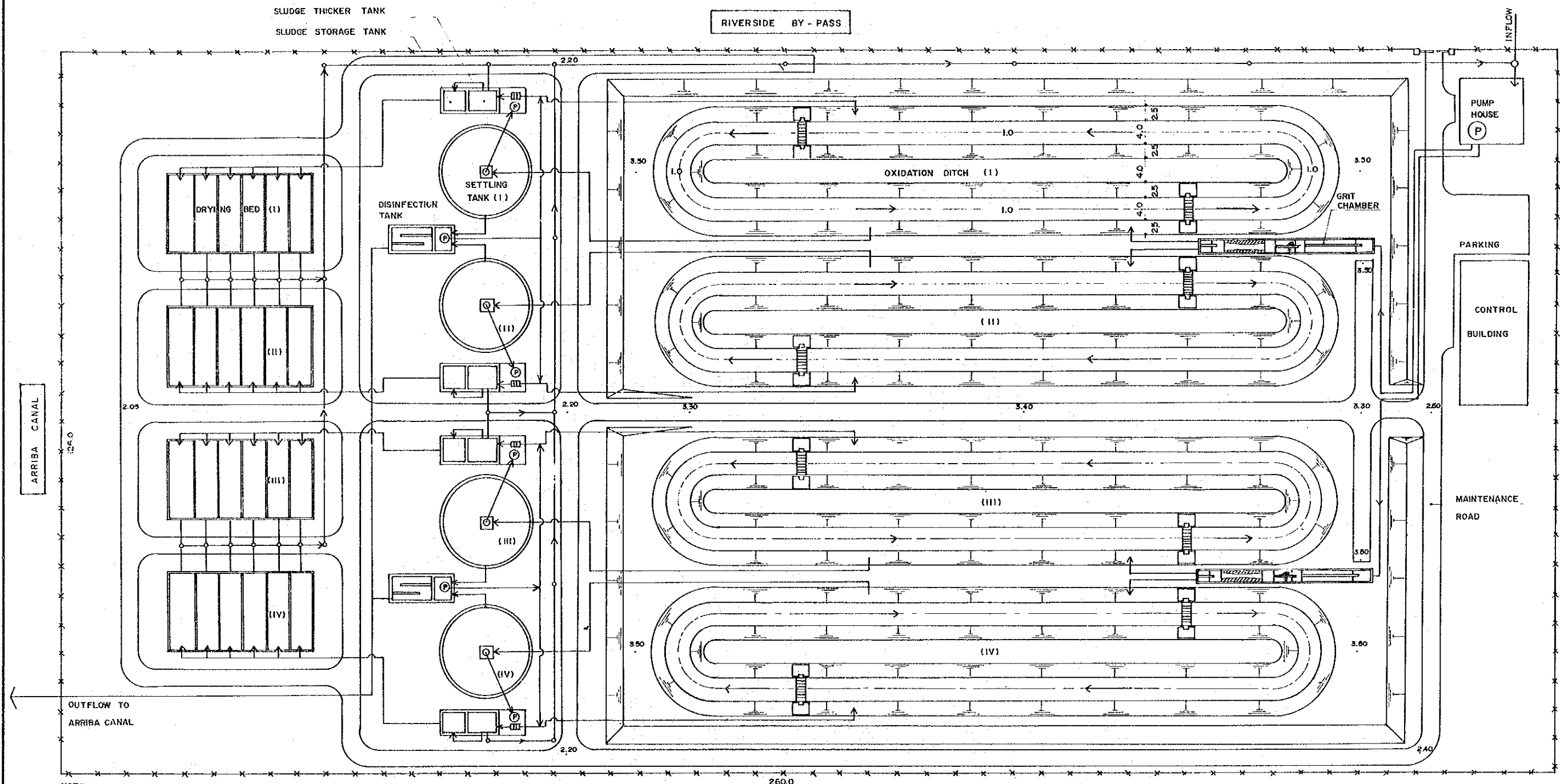
STRAIGHT WALL-1200A For TYPE 2



LID



# LAYOUT PLAN OF SEWAGE TREATMENT PLANT



NOTE  
 1) TREATMENT CAPACITY  
 $3200 \text{ M}^3/\text{DAY} \times 4 \text{ LINES} = 12,800 \text{ M}^3/\text{DAY}$   
 2) TREATMENT EFFICIENCY

	INFLOW	OUTFLOW
BOD	250 ppm	LESS THAN 50 ppm
SS	300 ppm	LESS THAN 60 ppm