

CHAPTER 5

EXISTING SEWERS, DRAINS, KLONGS, UNDERGROUND WATER
MURRY PIPES AND TELEPHONE LINES.

One of the basic objectives of the present survey is that of determining the extent to which facilities presently in use can be incorporated in a long-range program of sewerage and drainage improvements.

The existing sewers are received both waste water and stormwater which they lay under the footpath and discharged into the canal system. The old system are not sufficient because of many reasons as follows:-

1. It seems to have no destinations in construction the drainage works due to lack of the master plan for drainage system. Some areas sewers were constructed to solve only the congested problem.

2. The slope of most sewers is not enough.

3. The street inlets are rather small.

4. Sewers are designed as receiving storm water but also discharging the domestic sewage.

5. The design and the construction are not proper manner in engineering standpoint such as money which was spent was not related to the results that obtained.

6. Sewers are quite adequate for street sewers, but they can not receive storm water from adjacent area.

7. The existing street gradients in the old city are too low which cannot drain without pumping.

Figure 3 shows the existing sewers of various sections in the central part of Bangkok. The slope of sewers is not shown because the space is not enough for this small map. The gradient is shown in Table 3 is prepared by Bangkok Municipality in 1964.

1. EYE-LAWS OF SANITATION.

The drainage of buildings in Bangkok is controlled by Eye-laws. Section 8 of these Eye-laws deals with Sanitation for the following:-

Every new building should have a proper drainage system.

The sewer from a building to the public waterway should have a slope of not less than 1 in 200 and being laid as straight as possible. If a circular pipe is used it is to be provided with a manhole every 30 metres and at every change of direction.

Storage discharging should be treated to meet the requirement of the Municipality before it is discharged to a public waterway.

Water closets to be provided in every building to meet at least the following standard:-

¹Mr. Sathien Wickollak, The Control of Building Construction Act B.E. 2479 (Bangkok, Nitivet, 2479), p: 32.



LEGEND.

U-SEWERS.

A	-	U 30 CM.
B	-	U 40 CM.
C	-	U 50 CM.
D	-	U 60 CM.
E	-	U 80 CM.
F	-	U 100 CM.
G	-	□ 120x200 CM.
H	-	□ 144x160 CM.
I	-	□ 150x200 CM.
J	-	□ 189x210 CM.
K	-	□ 250x270 CM.

ROUND SEWERS.

A'	-	Ø 30 CM.
B'	-	Ø 40 CM.
C'	-	Ø 50 CM.
D'	-	Ø 60 CM.
E'	-	Ø 80 CM.
F'	-	Ø 100 CM.



Figure 9
EXISTING SEWERS

IN BANGKOK

1965

SOURCE: BANGKOK MUNICIPALITY

**Table 8 GRADIENT OF R. C. AND ASBESTOS CEMENT SEWERS
IN BANGKOK 1964**

DIAMETER	SLOPE PER THOUSAND	SLOPE IN cm/metre
15	.005	.500
20	.0040	.400
30	.0020	.200
40	.0016	.160
50	.0012	.120
60	.00085	.085
70	.00075	.075
80	.00065	.065
90	.00055	.055
1.00	.00045	.045
1.20	.00035	.035
SOURCE: BANGKOK MUNICIPALITY		

(1) Residential buildings and terrace houses-one closet in each house.

(2) Hotel-one closet for each 10 guests.

(3) Schools and Industrial Buildings-one closet for each 100 persons.

(4) Assembly Halls and Theatres-one closet for each 100 persons.

Every water closet to be situated in a room having an area of at least 1.5 square metre per closet constructed that it can be cleaned easily and having an impervious floor and adequate ventilation. If a septic tank is provided the room containing the water closet can be situated within the building.

If any other process of sewage disposal is used, the water closet is to be separated from the main building.

The water closet wastes from hotels, office buildings, etc., are usually discharged to septic tanks.

The Municipality will arrange to empty these tanks when required on payment, by the owner of the cost incurred.

The Municipality operates a fleet of some ten vehicles for emptying septic tanks, the sludge being transported to the site of the domestic refuse composting plant where it is added in drying beds & mixed with compost.

RIVERS AND RIVERS

Three large rivers flow through the centre of the metropolitan area to the Gulf of Thailand. Main drains receive

partial cleansing by tidal movement and surface runoff. Small Klongs are not greatly affected by tides and are quite foul. The differential elevation between existing ground surface and river elevation is insufficient to prevent extensive surface flooding in the wet season.

It is not, however, the intention of the Government that the canal system as a whole shall be abandoned. It has been decided that many of the canals shall be retained in use for waterways drainage and irrigation purposes, and to maintain the character of the town. Figure 10 shows various Klongs in Bangkok-Banburi must be kept for open channel.

The following is a list of the canals which the Government would be retained:-

²Bangkok canals would be retained

1. Klong Khord
2. Klong Bang Lamphu
3. Klong Phadung Brung Dasem
4. Klong Chong Nonsi
5. Klong Phai Sing to
6. Klong Sun Kioey
7. Klong Lamnak

²Husband & Co, report on Sewerage and Sewage Disposal for the Central Area of Bangkok (Department of Public and Municipal Works, 1962), p. 30.

8. Klong Sam Sen from River-Klong Ton
9. Klong Bang Sue from River-Klong Lat Phrao
10. Klong Huai Kwong, Klong Phraya Woek
11. Klong Lat Phrao
12. The Klong at the eastern end of Rama 1 V Road
13. Various irrigation canals i.e. Klong Prem Pra-
chakon, Klong Saen Saep, Klong Ton, Klong Phra Kanong.
14. Various small ditches i.e. beside the race
tracks and in front of Chulalongkorn Hospital etc.

³Thonburi Canals would be retained:-

1. Klong Bang Chark
2. Klong Bang Yi Khan
3. Klong Bang Kok Noi
4. Klong Morn
5. Klong Bang Kok Yai
6. Klong Sarn
7. Klong Tonsai
8. Klong Bang Lamphu
9. Klong Bang Sikai
10. Klong Samrae
11. Klong Bang Namchon

³Letter of Bangkok Municipality to General Director of Department of Town and Country Planning, August, 20 1964, in M.L. Chinchai Kamphu's file (Department of Town and Country Planning).

12. Klong Down Kanong
13. Klong Bang Sakae
14. Klong Bang Kor
15. Klong Dan
16. Klong Pasichareon
17. Klong Jang Wak
18. Klong Jang Chuongnang
19. Klong Jang Phom
20. Klong Bang Romad
21. Klong Bang Khunnont
22. Klong Wadsuwan.

UNDERGROUND WATER SUPPLY PIPES

Water supply works in Bangkok-Thonburi is engaged by the government. In 1964 the Government hired the France company, Degremont for the extension of the Bangkok water-works and new mains for distribution network both Bangkok and Thonburi. Figure 11. showed the location of the new proposed high pressure main and new proposed low pressure mains which have to relate to the sewerage and drainage works.

TELEPHONE LINE

Telephone improvement is planned by The Telephone Organization to meet the people needs. The project to extend the main line are made at various main roads. By this way telephone works related to the sewerage and drainage works is the underground telephone line which now is in during the period of construction and being in the preparation to extend

the works in the future. Figure 11 shows complete main line and proposed main line.

FOR OPEN CHANNEL



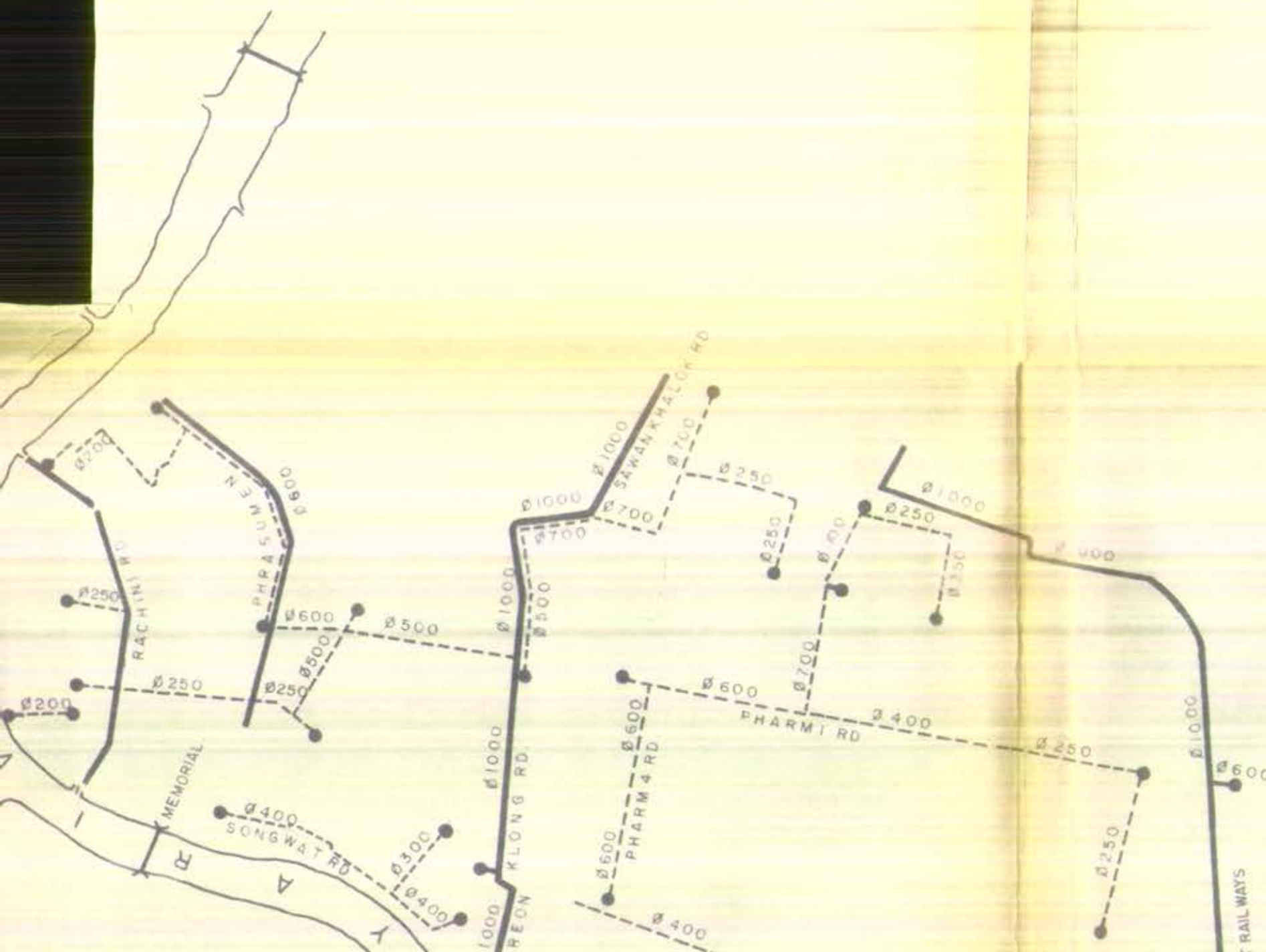


Figure II

WATER SUPPLY PIPES IN BANGKOK
1964

SOURCE : SAMSEN WATER PLANT.

LEGEND:

- NEW PROPOSED HIGH PRESSURE MAINS.
- - - NEW PROPOSED LOW PRESSURE MAINS.
- JUNCTION WITH THE MOST IMPORTANT EXISTING PIPES.

