

THE KINGDOM OF THAILAND
BANGKOK METROPOLITAN ADMINISTRATION

**FEASIBILITY STUDY
ON FLOOD PROTECTION/DRAINAGE PROJECT
IN EASTERN SUBURBAN-BANGKOK**

DRAWINGS

FEBRUARY, 1986

JAPAN INTERNATIONAL COOPERATION AGENCY

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THE KINGDOM OF THAILAND
BANGKOK METROPOLITAN ADMINISTRATION

**FEASIBILITY STUDY
ON FLOOD PROTECTION / DRAINAGE PROJECT
IN EASTERN SUBURBAN-BANGKOK**

DRAWINGS

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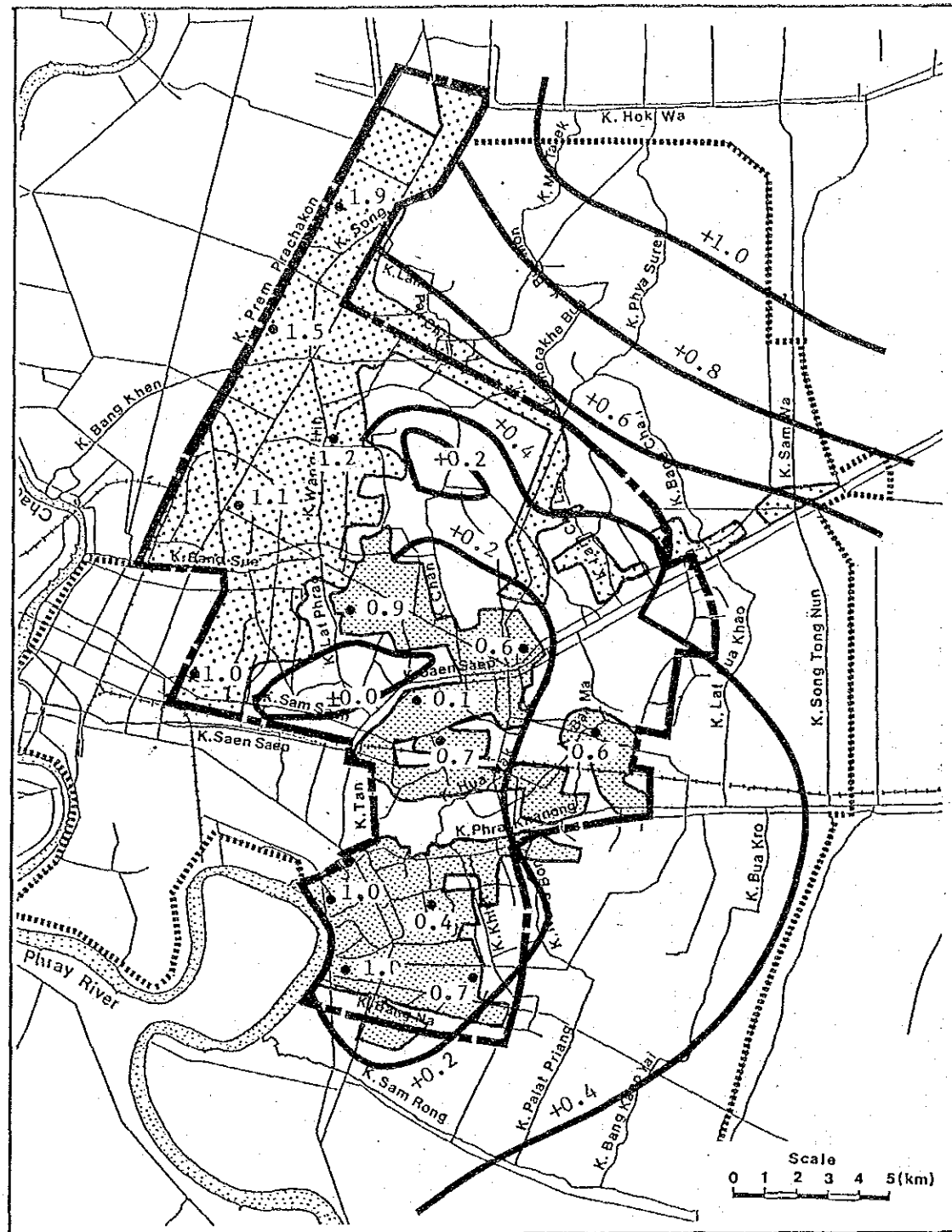
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B. GROUND ELEVATION IN STUDY AREA-----	2 (1 SHEET)
C. EXISTING FLOOD PROTECTION/DRAINAGE FACILITIES-----	3 (1 SHEET)
D. GENERAL PLAN OF PROPOSED FACILITIES IN FEASIBILITY STUDY-----	4 (1 SHEET)
E. PLAN OF PROPOSED FACILITIES-----	5 (36 SHEETS)
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G. RETAINING WALL-----	118 (4 SHEETS)
H. PUMPING STATION-----	122 (2 SHEETS)
I. FLOOD PROTECTION BARRIER-----	124 (2 SHEETS)
J. BARRIER GATE-----	126 (4 SHEETS)
K. DRAIN-----	130 (1 SHEET)

A. LOCATION OF STUDY AREA

(1 SHEET)

B. GROUND ELEVATION IN STUDY AREA

(...1 SHEET)




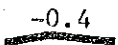


IN 1984



IN 2000

LEGEND

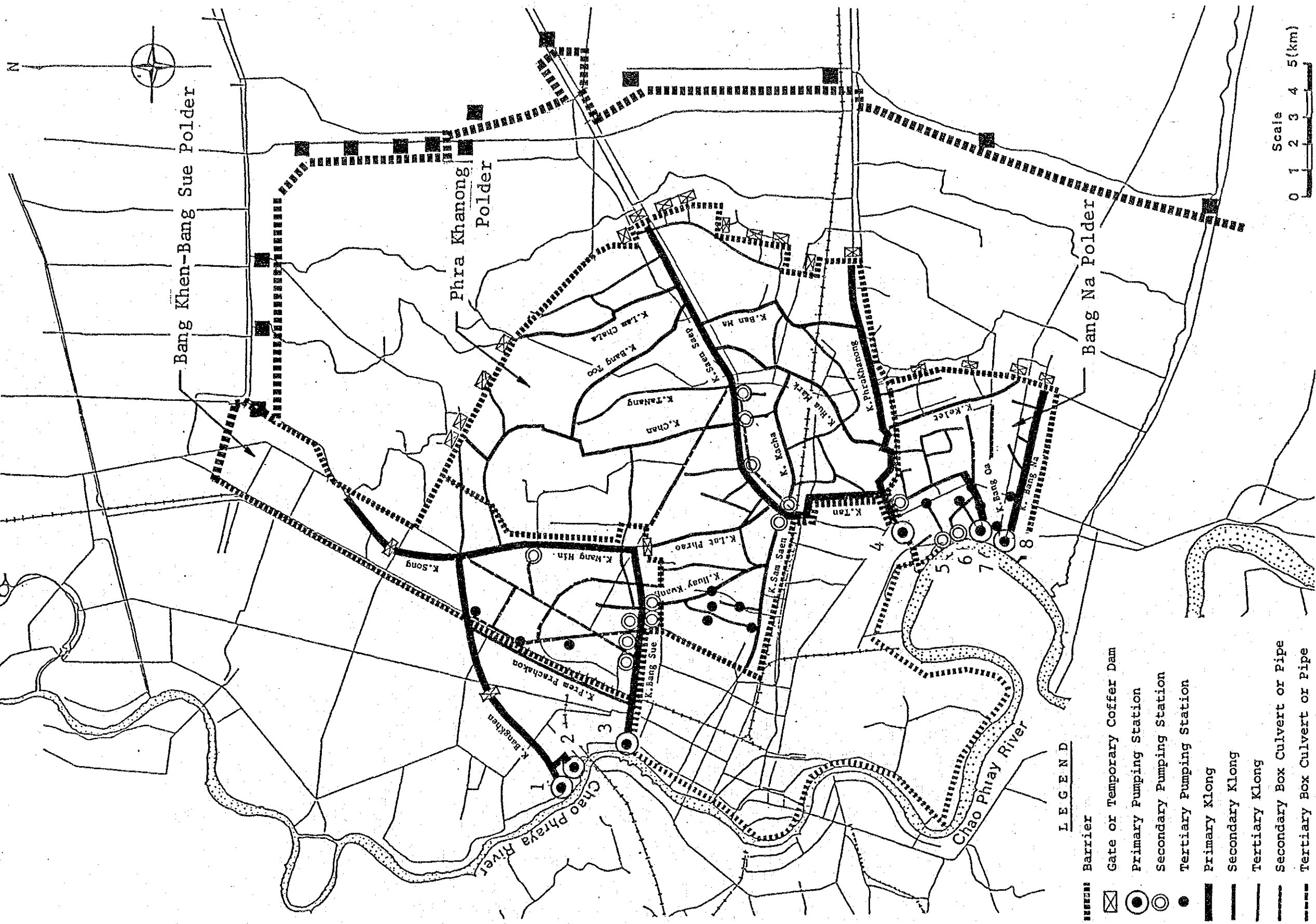
-  Embanked Area, More than MSL +1.00m
-  Embanked Area, MSL +0.00 +1.00m
-  Embanked Area, Less than MSL+0.00m
-  -0.4 Contour Line above MSL

Unit; m MSL [Source; JICA Study Team]

DWG. B.1	GROUND ELEVATION IN STUDY AREA
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	

C. EXISTING FLOOD PROTECTION/DRAINAGE FACILITIES

(1 SHEET)



LEGEND

- Barrier
- Gate or Temporary Coffe Dam
- Primary Pumping Station
- Secondary Pumping Station
- Tertiary Pumping Station
- Primary Klong
- Secondary Klong
- Tertiary Klong
- Secondary Box Culvert or Pipe
- Tertiary Box Culvert or Pipe

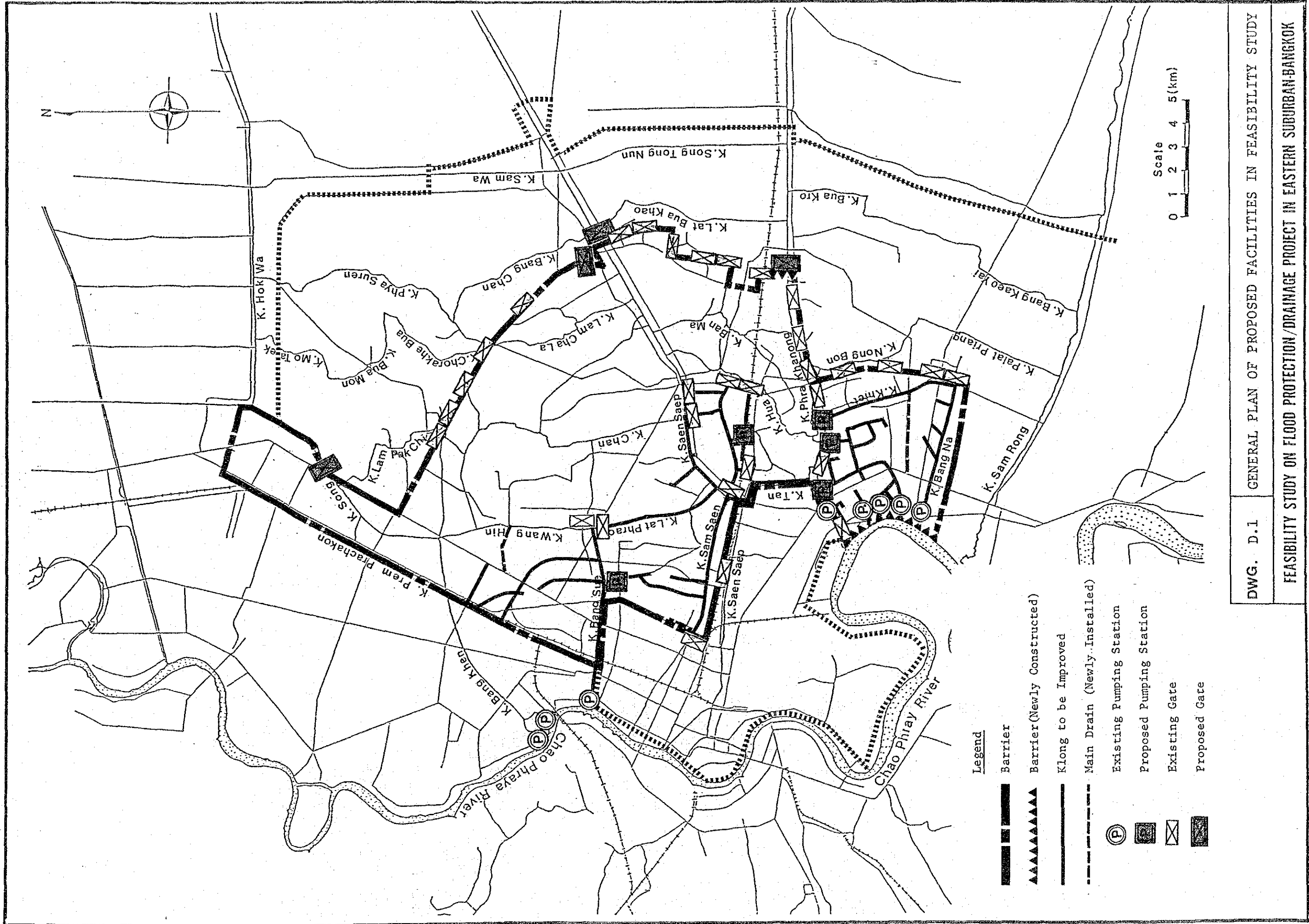
DWG. C.1

EXISTING FLOOD PROTECTION/DRAINAGE FACILITIES

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK

D. GENERAL PLAN OF PROPOSED FACILITIES IN FEASIBILITY STUDY

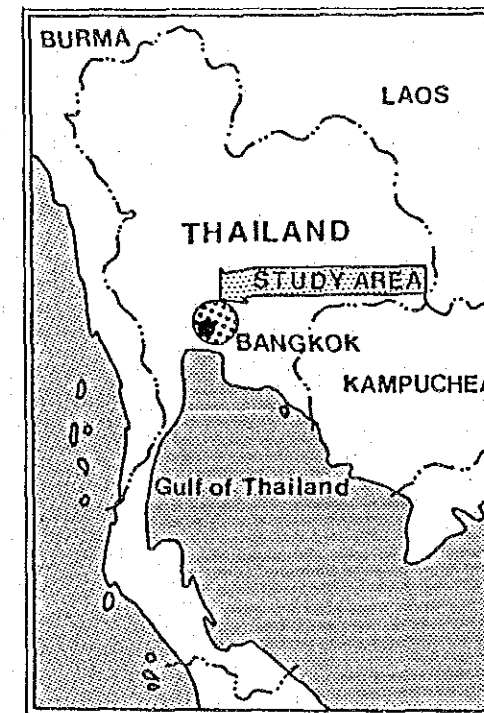
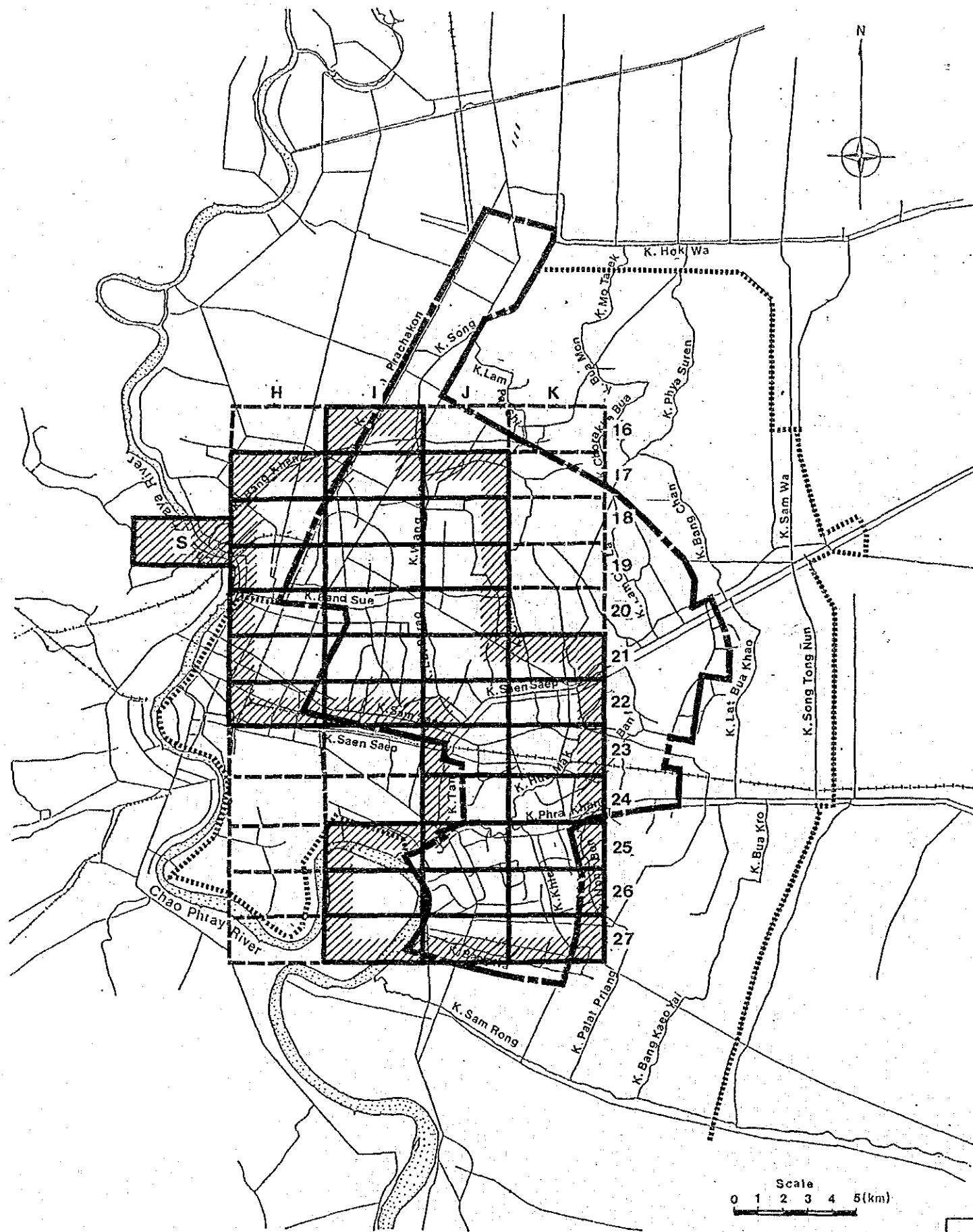
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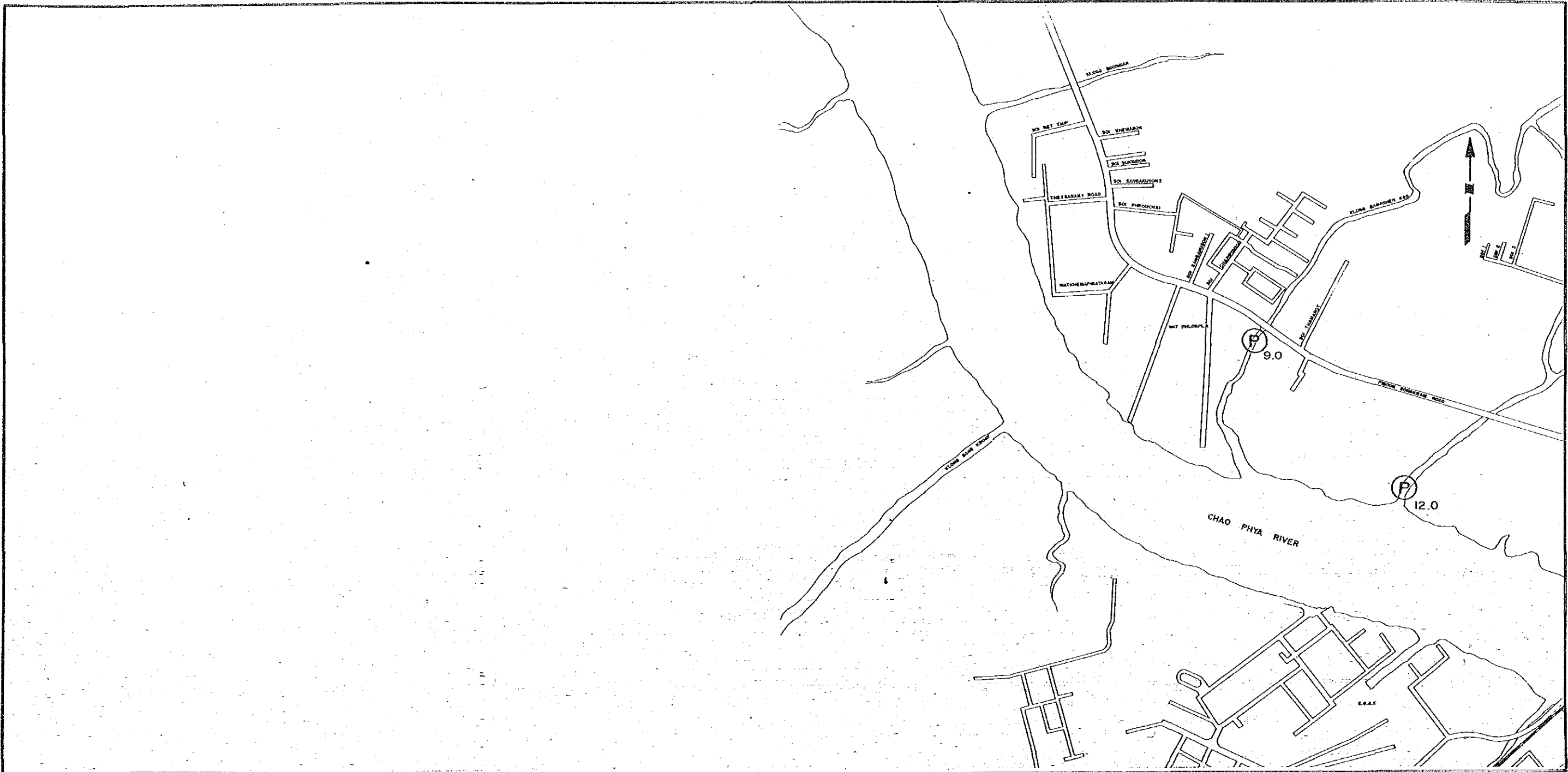
DWG. D.1 GENERAL PLAN OF PROPOSED FACILITIES IN FEASIBILITY STUDY
 FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN BANGKOK

E. PLAN OF PROPOSED FACILITIES

(36 SHEETS)



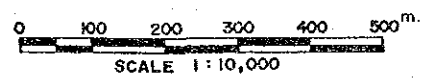
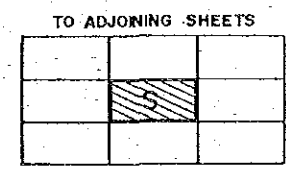
DWG. E.1	PLAN INDEX OF PROPOSED FACILITIES
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



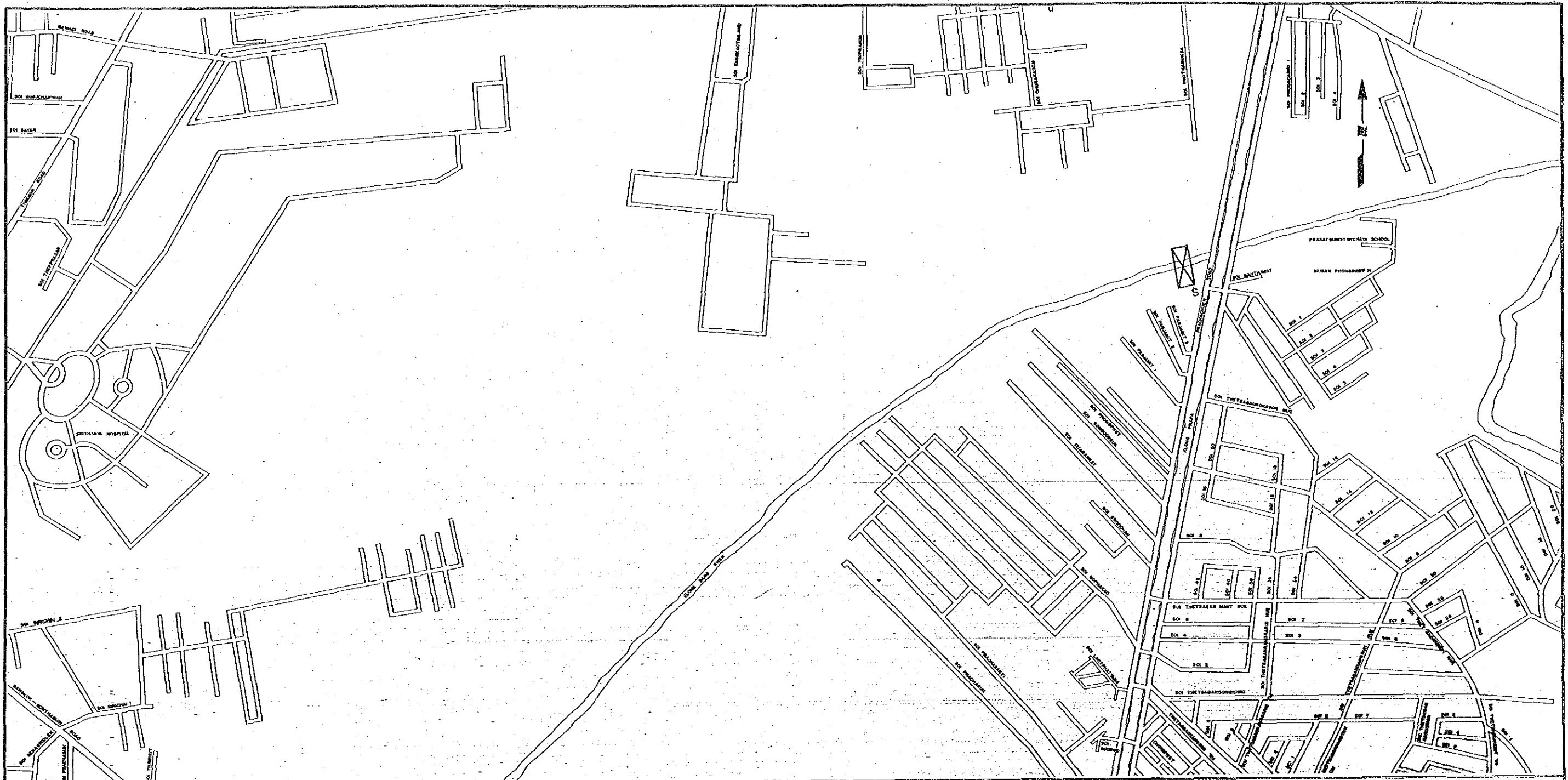
LEGEND

- | | | | |
|--|--|--|--|
| | Existing Barrier Utilizing
Railway, Road Embankment | | Existing Drainage Pipe,
Box Culvert |
| | Proposed Barrier,
to be Newly Constructed | | Proposed Drainage Pipe,
Box Culvert |
| | Klong to be Improved
(with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved
(with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate
W; Wooden Gate
S; Steel Gate |

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DWG. E.2	PLAN OF PROPOSED FACILITIES (1)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



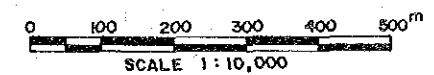
LEGEND

- | | | | |
|--|---|--|--|
| | Existing Barrier Utilizing Railway, Road Embankment | | Existing Drainage Pipe, Box Culvert |
| | Proposed Barrier, to be Newly Constructed | | Proposed Drainage Pipe, Box Culvert |
| | Klong to be Improved (with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved (with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate
W; Wooden Gate
S; Steel Gate |

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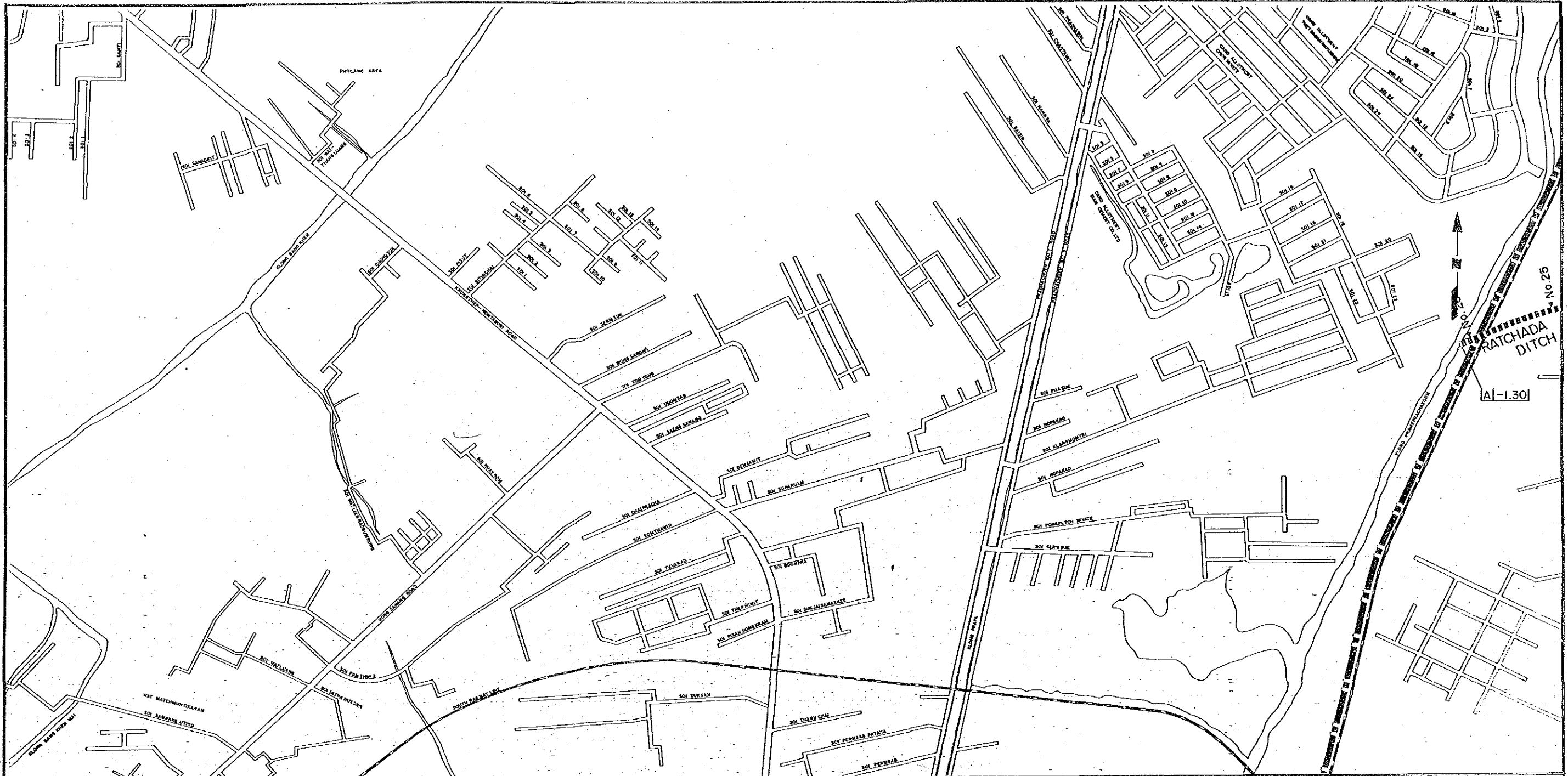
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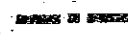

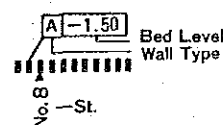
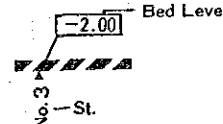
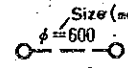
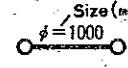



DWG. E.3

PLAN OF PROPOSED FACILITIES (2)

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK



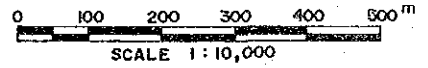
LEGEND

-  Existing Barrier Utilizing Railway, Road Embankment
-  Proposed Barrier, to be Newly Constructed
-  Bed Level -1.50
 Wall Type
 No. 8 - St.
 Klong to be Improved (with Rectangular Section)
-  Bed Level -2.00
 No. 3 - St.
 Klong to be Improved (with Trapezoidal Section)
-  Size (mm)
 $\phi = 600$
 Existing Drainage Pipe, Box Culvert
-  Size (mm)
 $\phi = 1000$
 Proposed Drainage Pipe, Box Culvert
-  P 100
 Capacity (m³/s)
 Existing Pumping Station
-  P 200
 Capacity (m³/s)
 Proposed Pumping Station
-  w, s
 Existing Gate
 W; Wooden Gate
 S; Steel Gate

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DWG. E.4 PLAN OF PROPOSED FACILITIES (3)

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK



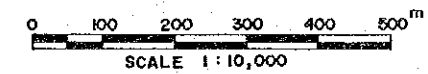
LEGEND

- Existing Barrier Utilizing Railway, Road Embankment
- Proposed Barrier, to be Newly Constructed
- Klong to be Improved (with Rectangular Section)
- Klong to be Improved (with Trapezoidal Section)
- Existing Drainage Pipe, Box Culvert
- Proposed Drainage Pipe, Box Culvert
- Existing Pumping Station
- Proposed Pumping Station
- Existing Gate
W; Wooden Gate
S; Steel Gate

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DWG. E.5	PLAN OF PROPOSED FACILITIES (4)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



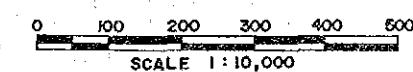
LEGEND

- | | | | |
|--|---|--|--|
| | Existing Barrier Utilizing Railway, Road Embankment | | Existing Drainage Pipe, Box Culvert |
| | Proposed Barrier, to be Newly Constructed | | Proposed Drainage Pipe, Box Culvert |
| | Klong to be Improved (with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved (with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate
W; Wooden Gate
S; Steel Gate |

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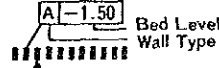
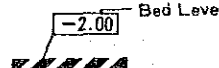
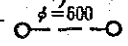
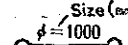



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DWG. E.6	PLAN OF PROPOSED FACILITIES (5)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



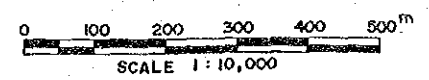
LEGEND

-  Existing Barrier Utilizing Railway, Road Embankment
-  Proposed Barrier, to be Newly Constructed
-  Klong to be Improved (with Rectangular Section)
-  Klong to be Improved (with Trapezoidal Section)
-  Existing Drainage Pipe, Box Culvert
-  Proposed Drainage Pipe, Box Culvert
-  Existing Pumping Station
-  Proposed Pumping Station
-  Existing Gate
- W; Wooden Gate
S; Steel Gate

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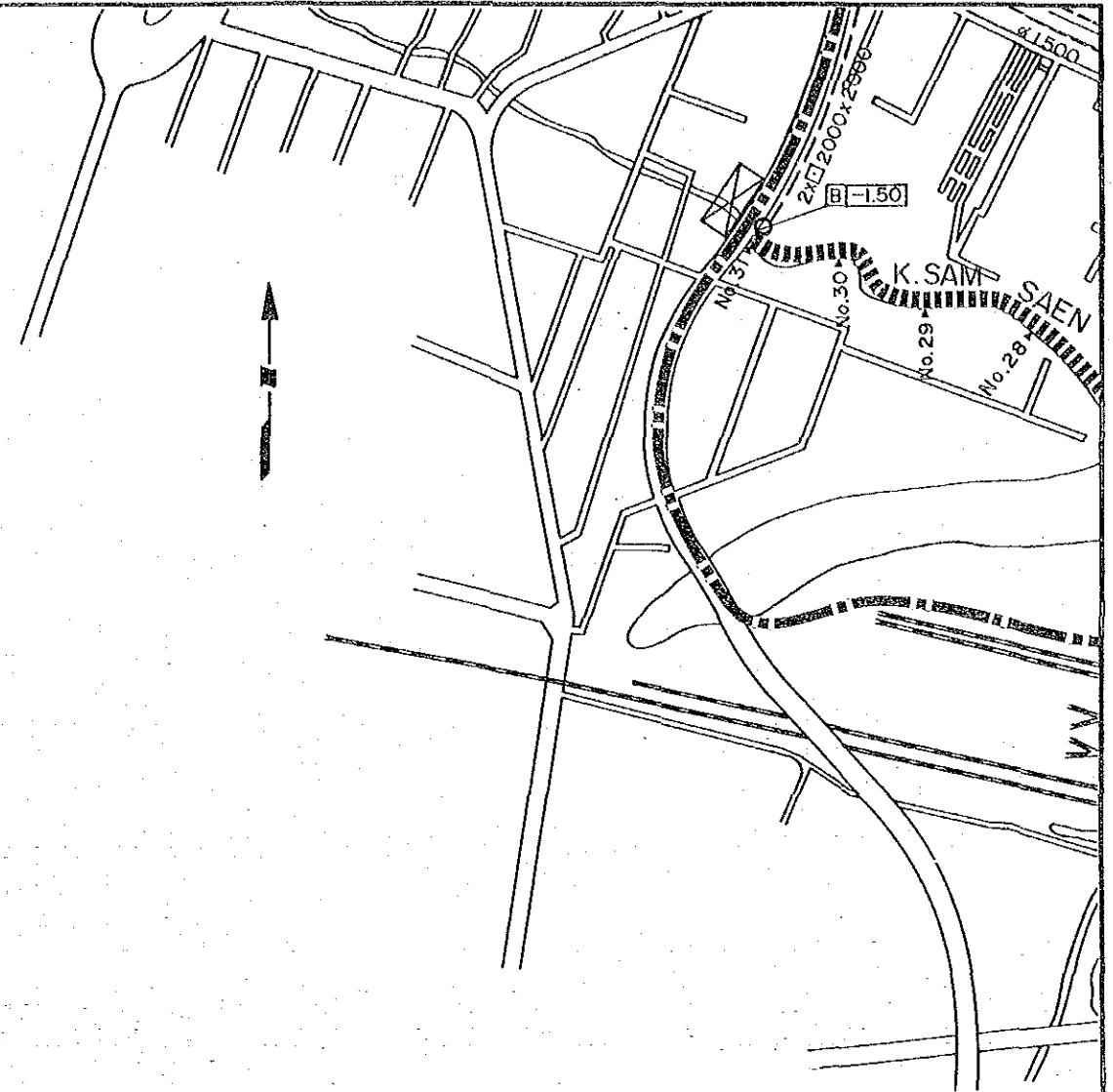
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DWG. E.7 PLAN OF PROPOSED FACILITIES (6)

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK



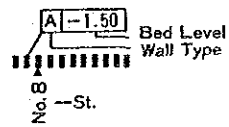
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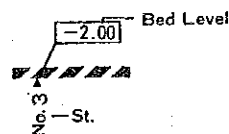
Existing Barrier Utilizing
Railway, Road Embankment



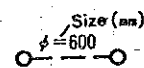
Proposed Barrier,
to be Newly Constructed



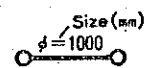
Klong to be Improved
(with Rectangular Section)



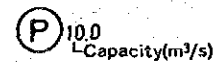
Klong to be Improved
(with Trapezoidal Section)



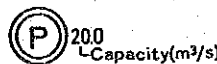
Existing Drainage Pipe,
Box Culvert



Proposed Drainage Pipe,
Box Culvert



Existing Pumping Station



Proposed Pumping Station

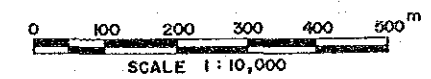


Existing Gate
W; Wooden Gate
S; Steel Gate

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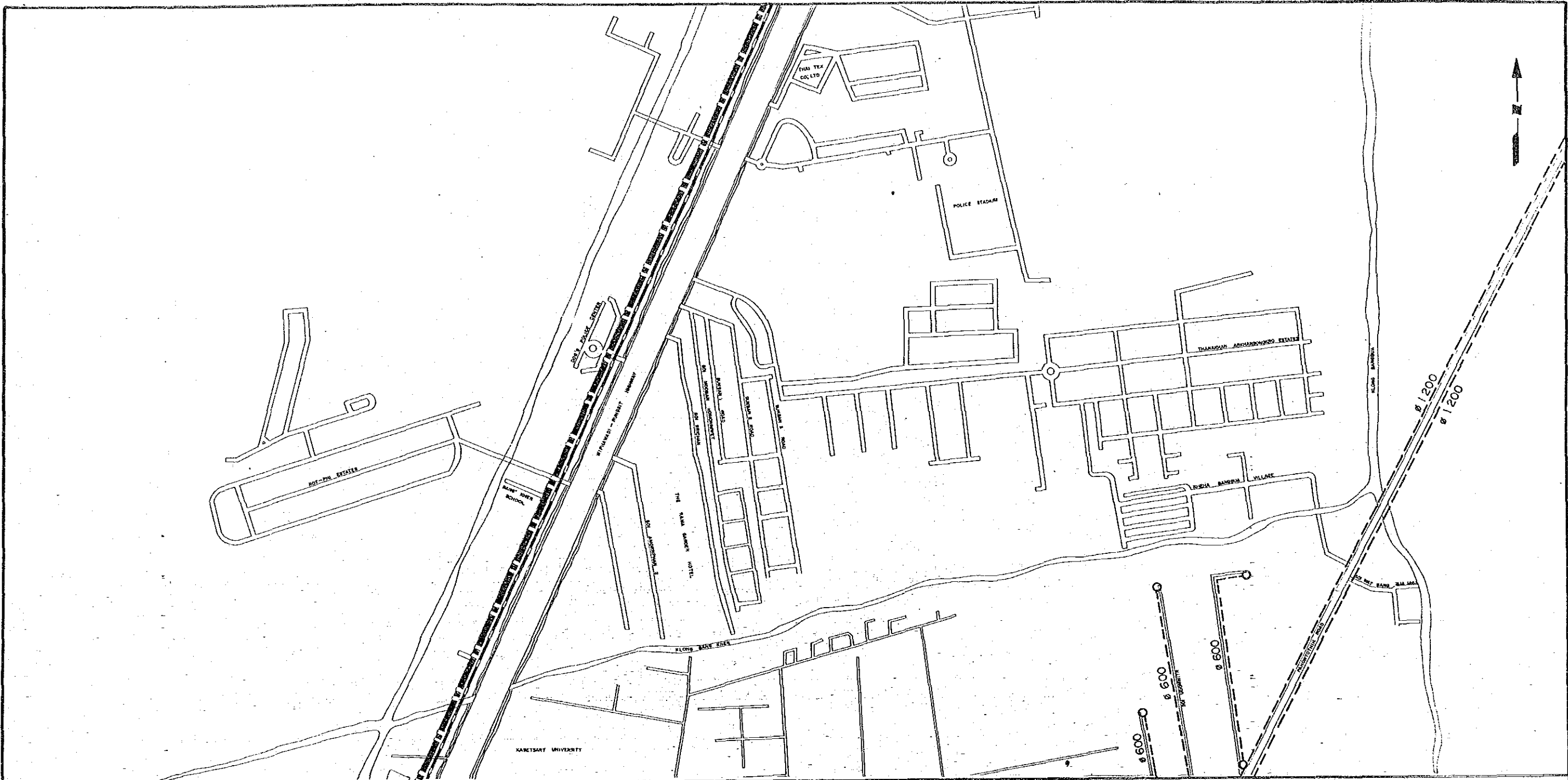
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DWG. E.8

PLAN OF PROPOSED FACILITIES (7)

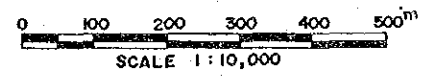
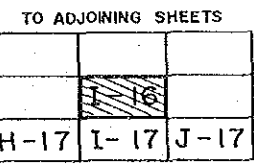
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK



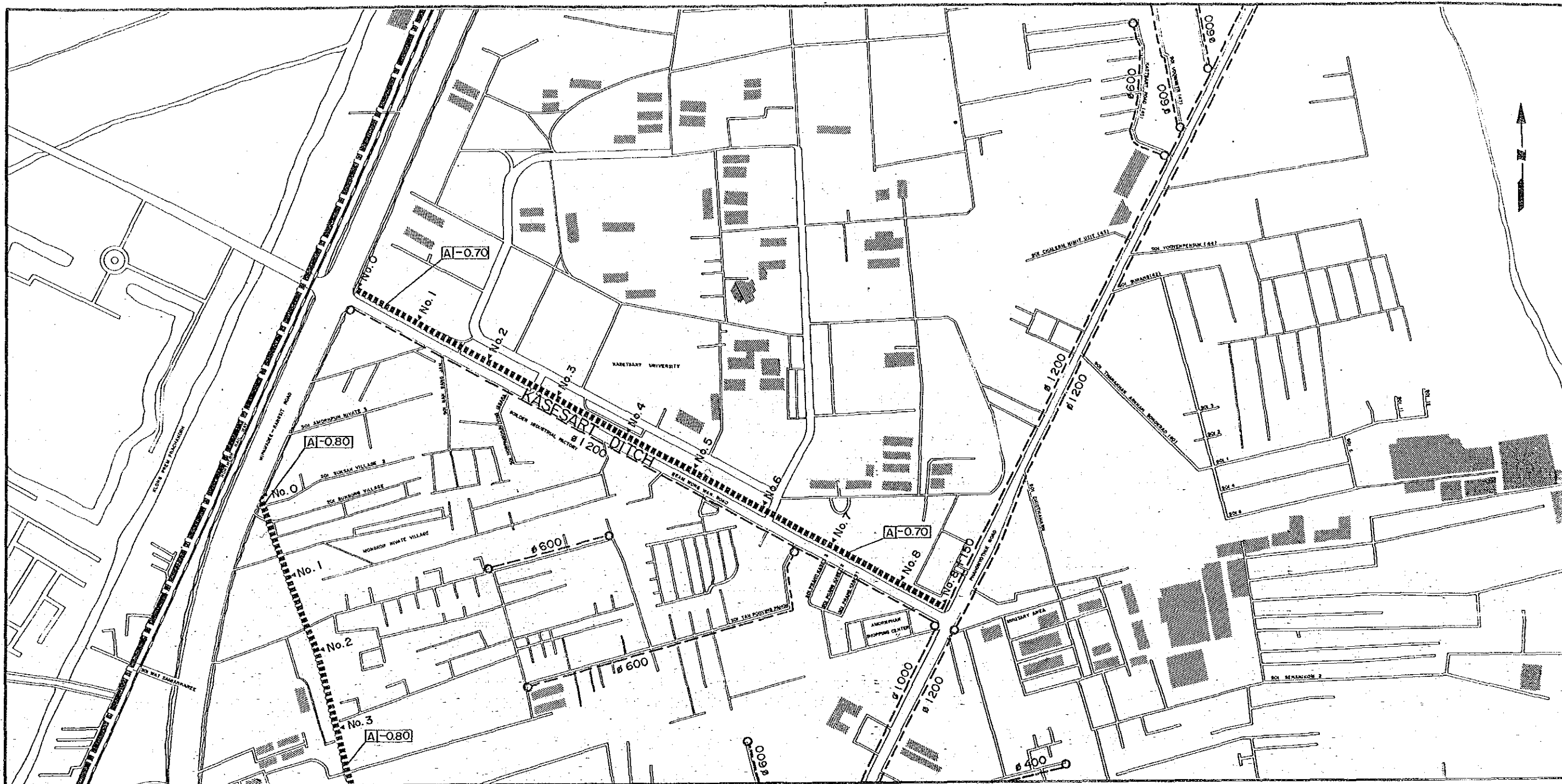
LEGEND

- | | | | |
|--|---|------|-------------------------------------|
| | Existing Barrier Utilizing Railway, Road Embankment | | Existing Drainage Pipe, Box Culvert |
| | Proposed Barrier, to be Newly Constructed | | Proposed Drainage Pipe, Box Culvert |
| | Klong to be Improved (with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved (with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate |
| | | W, S | W; Wooden Gate
S; Steel Gate |



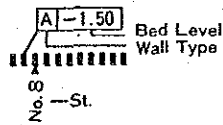
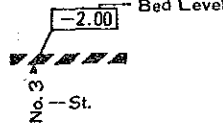
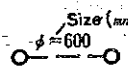
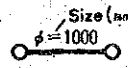



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DWG. E.9	PLAN OF PROPOSED FACILITIES (8)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



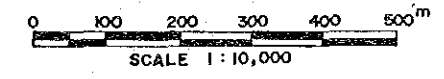
LEGEND

-  Existing Barrier Utilizing Railway, Road Embankment
-  Proposed Barrier, to be Newly Constructed
-  Klong to be Improved (with Rectangular Section) (with Rectangular Section) Bed Level Wall Type
-  Klong to be Improved (with Trapezoidal Section) (with Trapezoidal Section) Bed Level
-  Existing Drainage Pipe, Box Culvert Size (mm) 600
-  Proposed Drainage Pipe, Box Culvert Size (mm) 1000
-  Existing Pumping Station Capacity (m³/s) 10.0
-  Proposed Pumping Station Capacity (m³/s) 200
-  Existing Gate W; Wooden Gate S; Steel Gate

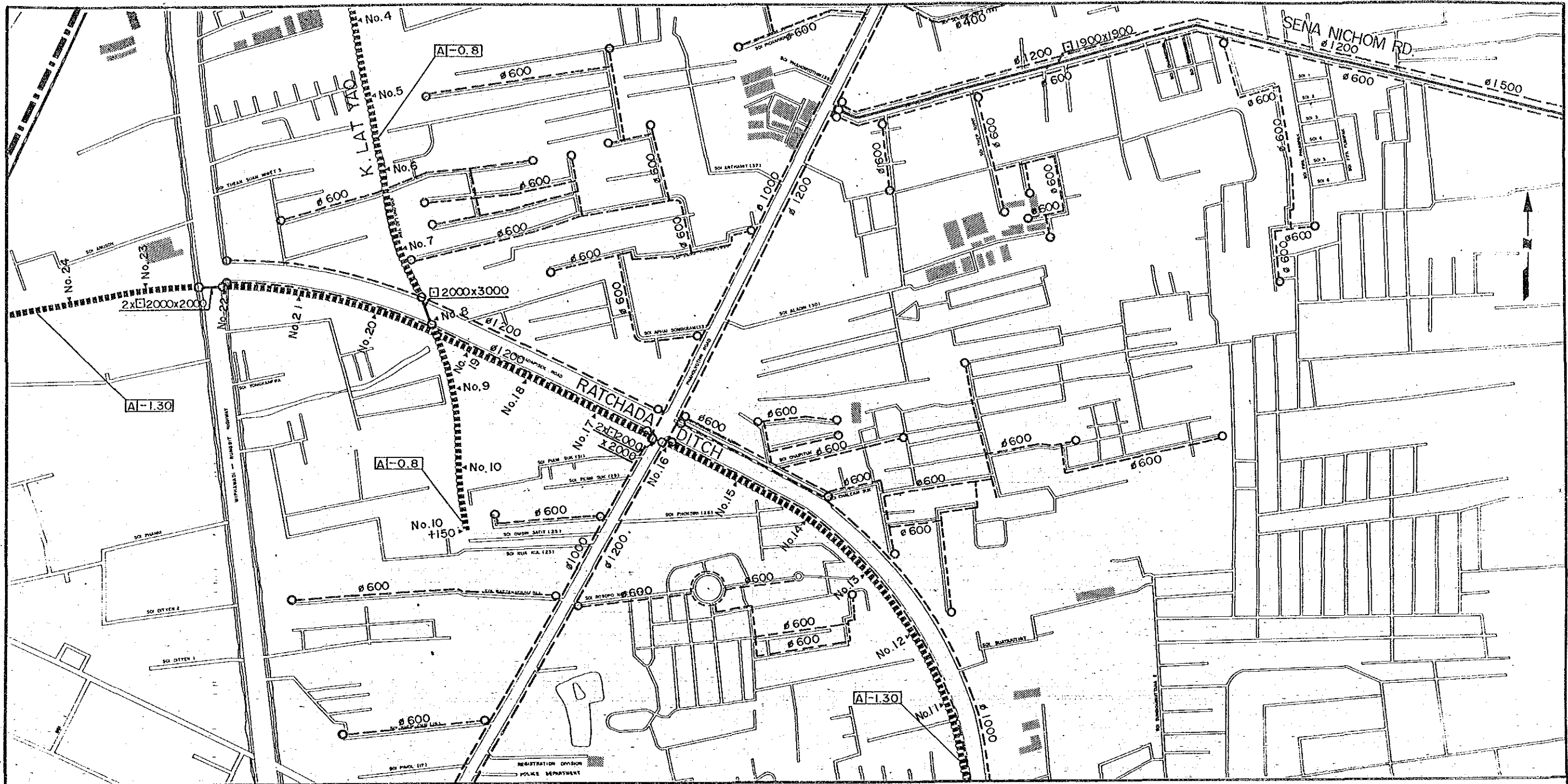
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DWG. E.10	PLAN OF PROPOSED FACILITIES (9)
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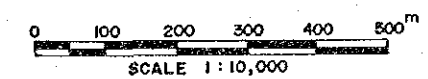
LEGEND

- | | | | |
|--|---|--|-------------------------------------|
| | Existing Barrier Utilizing Railway, Road Embankment | | Existing Drainage Pipe, Box Culvert |
| | Proposed Barrier, to be Newly Constructed | | Proposed Drainage Pipe, Box Culvert |
| | Klong to be Improved (with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved (with Trapezoidal Section) | | Proposed Pumping Station |
| | Existing Gate | | W; Wooden Gate |
| | | | S; Steel Gate |

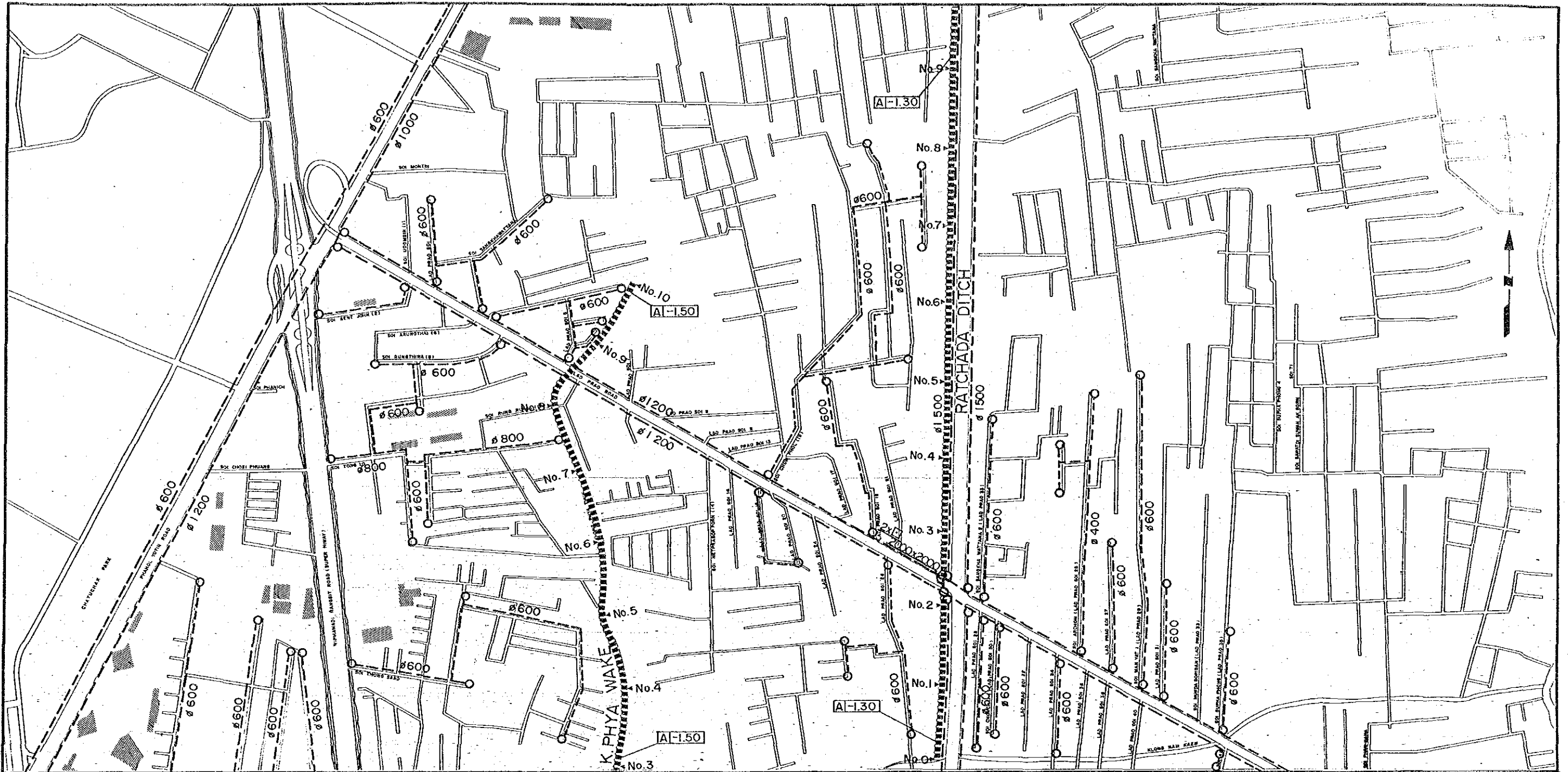
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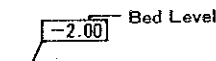
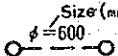
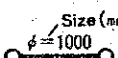



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DWG. E.11	PLAN OF PROPOSED FACILITIES (10)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



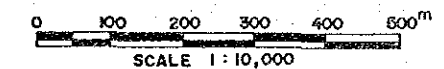
LEGEND

-  Existing Barrier Utilizing Railway, Road Embankment
-  Proposed Barrier, to be Newly Constructed
-  Bed Level -1.50
Klong to be Improved (with Rectangular Section)
-  Bed Level -2.00
Klong to be Improved (with Trapezoidal Section)
-  Existing Drainage Pipe, Box Culvert
-  Proposed Drainage Pipe, Box Culvert
-  Existing Pumping Station
-  Proposed Pumping Station
-  Existing Gate
W; Wooden Gate
S; Steel Gate

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DWG. E.12 PLAN OF PROPOSED FACILITIES (11)

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK



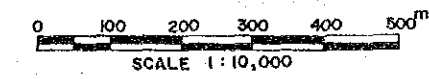
LEGEND

- Existing Barrier Utilizing Railway, Road Embankment
- Proposed Barrier, to be Newly Constructed
- Bed Level
Wall Type
Klong to be Improved (with Rectangular Section)
- Bed Level
Klong to be Improved (with Trapezoidal Section)
- Existing Drainage Pipe, Box Culvert
- Proposed Drainage Pipe, Box Culvert
- Existing Pumping Station
- Proposed Pumping Station
- Existing Gate
W; Wooden Gate
S; Steel Gate

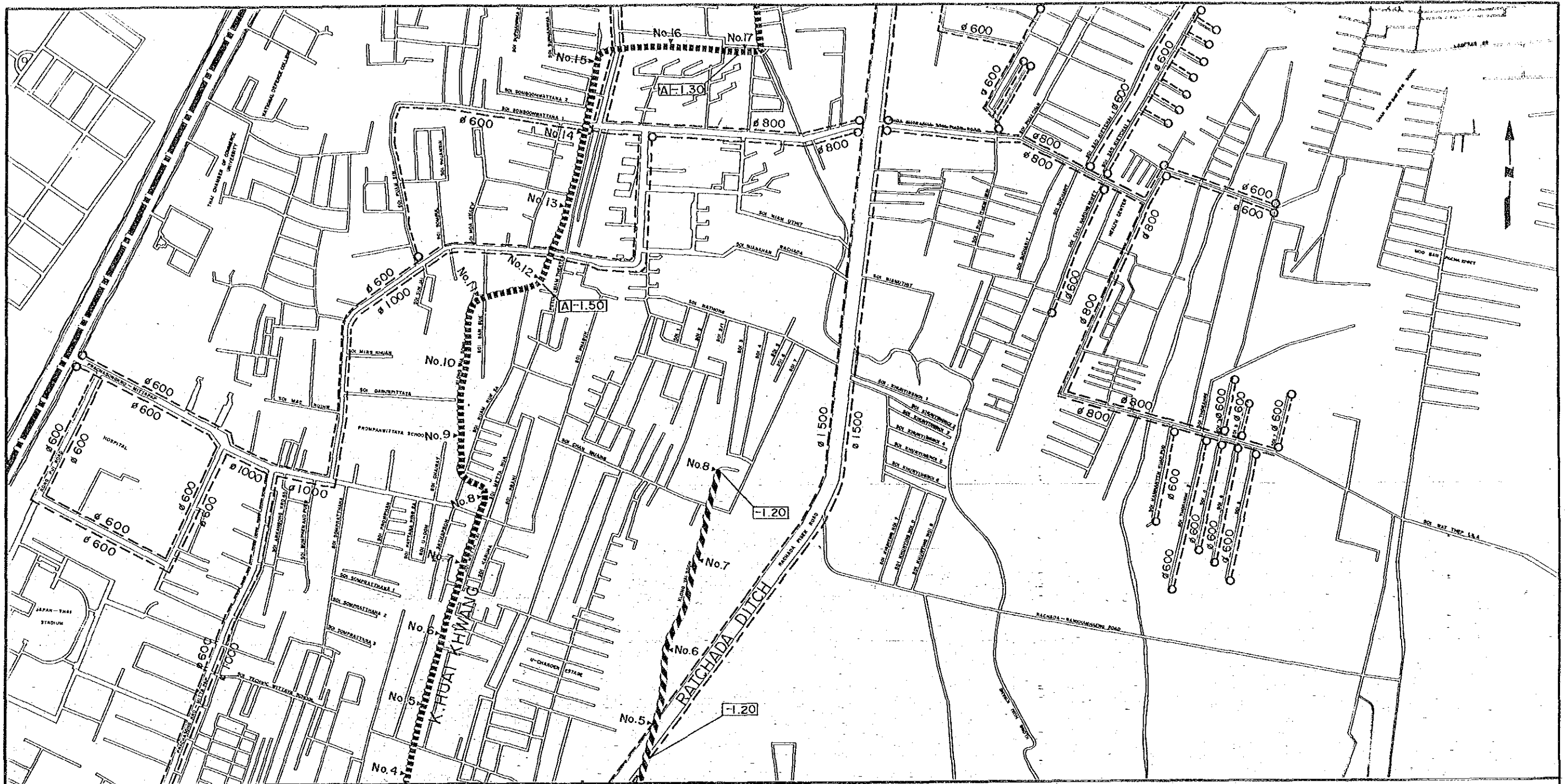
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DWG. E.13	PLAN OF PROPOSED FACILITIES (12)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



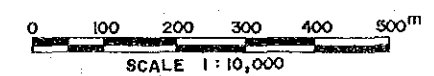
LEGEND

- | | | | |
|--|---|--|--|
| | Existing Barrier Utilizing Railway, Road Embankment | | Existing Drainage Pipe, Box Culvert |
| | Proposed Barrier, to be Newly Constructed | | Proposed Drainage Pipe, Box Culvert |
| | Klong to be Improved (with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved (with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate
W; Wooden Gate
S; Steel Gate |

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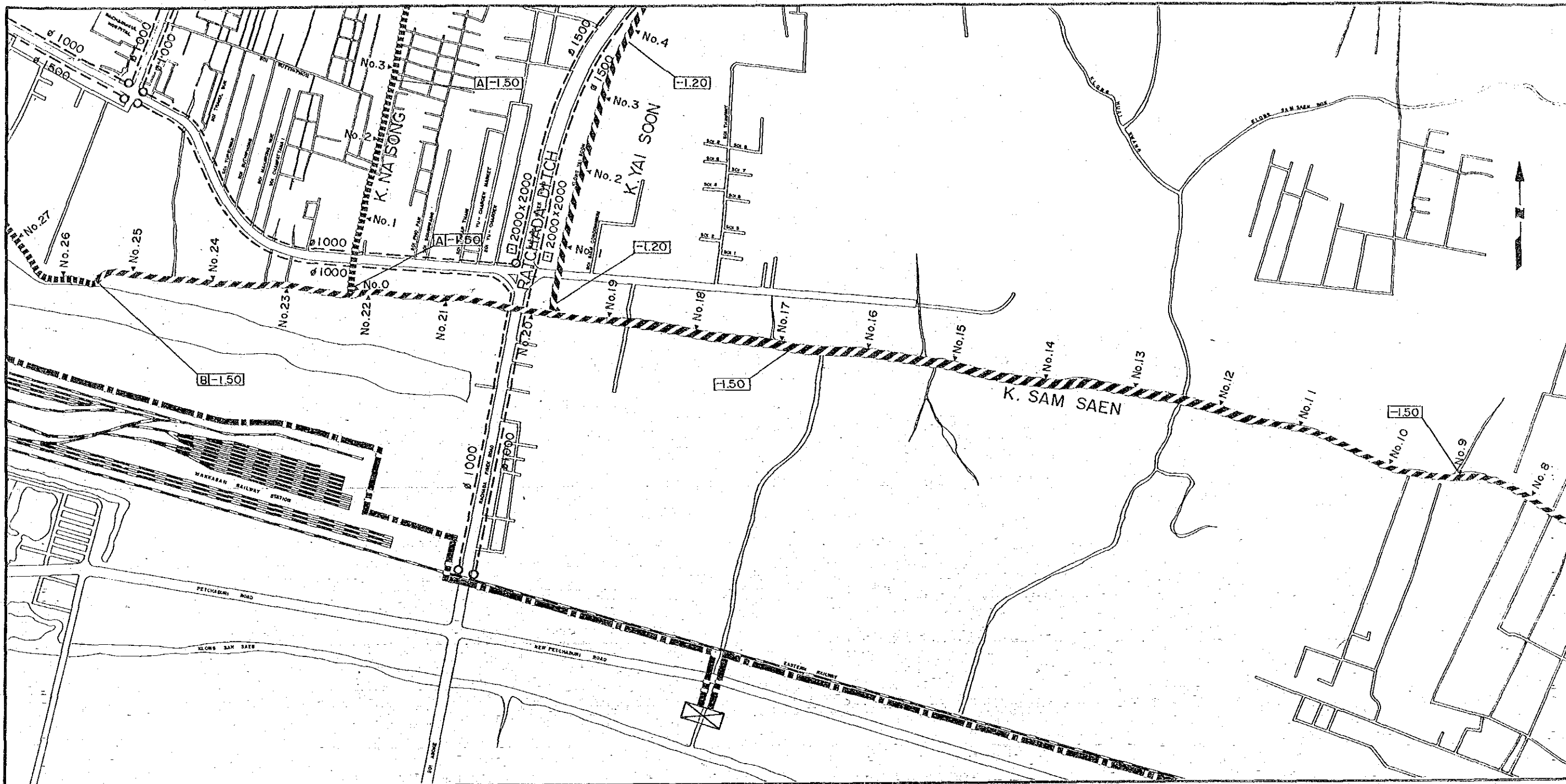
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DWG. E.14

PLAN OF PROPOSED FACILITIES (13)

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK



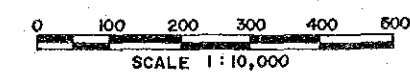
LEGEND

- | | | | |
|--|---|--|--|
| | Existing Barrier Utilizing Railway, Road Embankment | | Existing Drainage Pipe, Box Culvert |
| | Proposed Barrier, to be Newly Constructed | | Proposed Drainage Pipe, Box Culvert |
| | Klong to be Improved (with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved (with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate
W; Wooden Gate
S; Steel Gate |

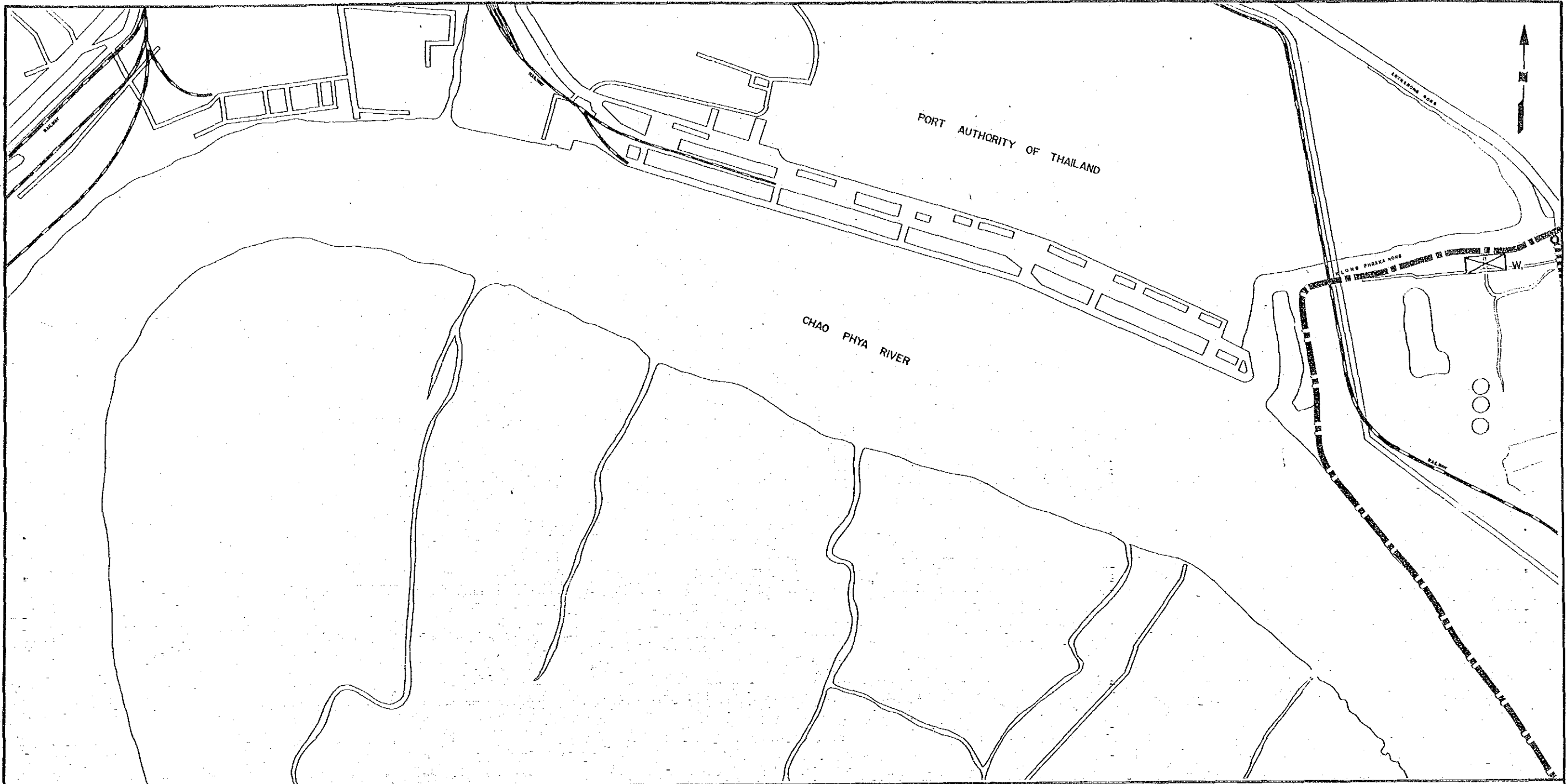
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DWG. E.15	PLAN OF PROPOSED FACILITIES (14)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



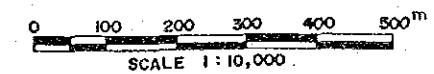
LEGEND

- | | | | |
|--|--|--|--|
| | Existing Barrier Utilizing
Railway, Road Embankment | | Existing Drainage Pipe,
Box Culvert |
| | Proposed Barrier,
to be Newly Constructed | | Proposed Drainage Pipe,
Box Culvert |
| | Klong to be Improved
(with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved
(with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate
W; Wooden Gate
S; Steel Gate |

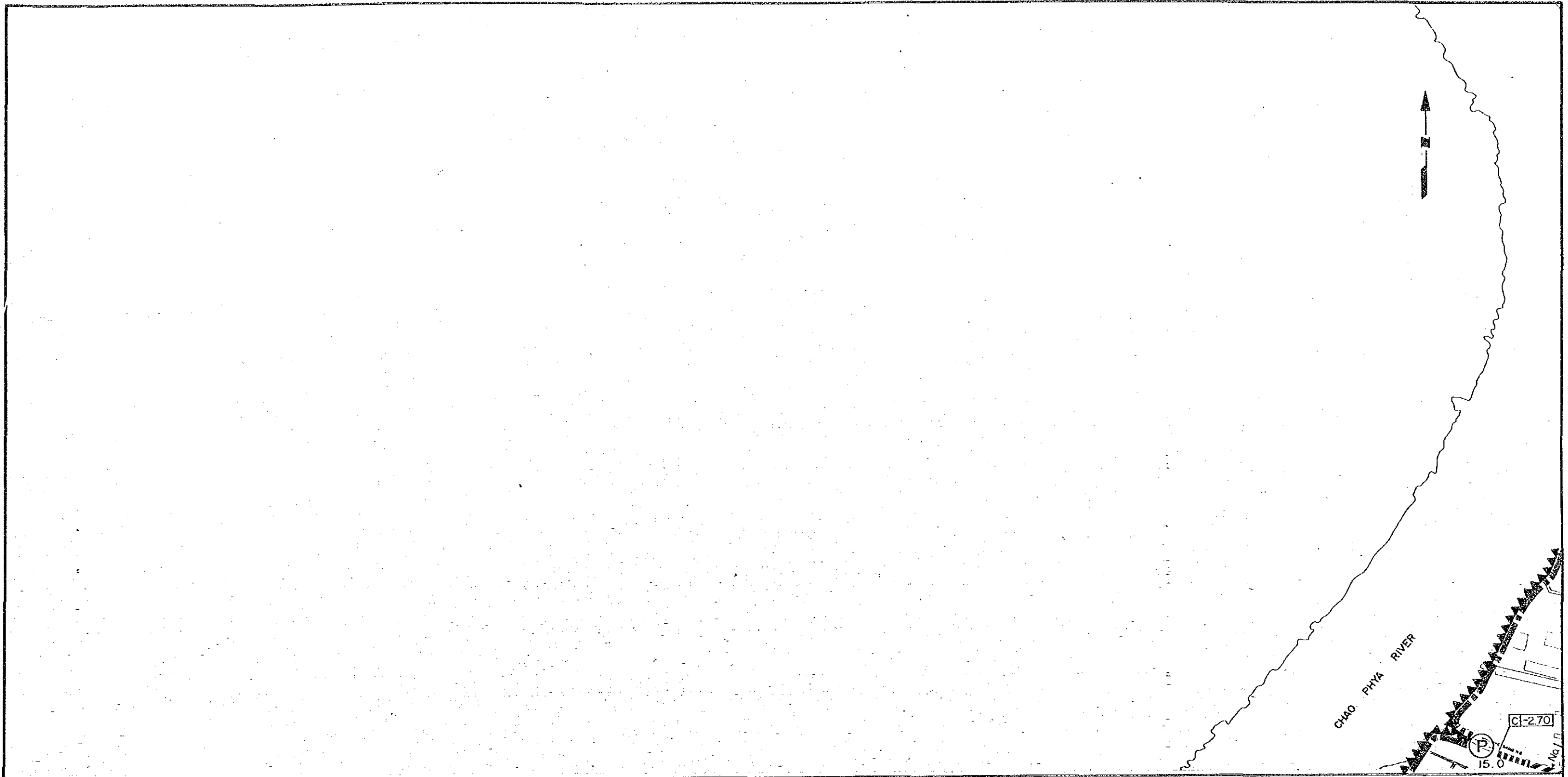
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DWG. E.16	PLAN OF PROPOSED FACILITIES (15)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



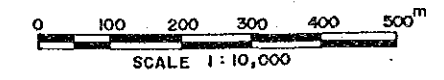
LEGEND

- | | | | |
|--|---|--|--|
| | Existing Barrier Utilizing Railway, Road Embankment | | Existing Drainage Pipe, Box Culvert |
| | Proposed Barrier, to be Newly Constructed | | Proposed Drainage Pipe, Box Culvert |
| | Klong to be Improved (with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved (with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate
W; Wooden Gate
S; Steel Gate |

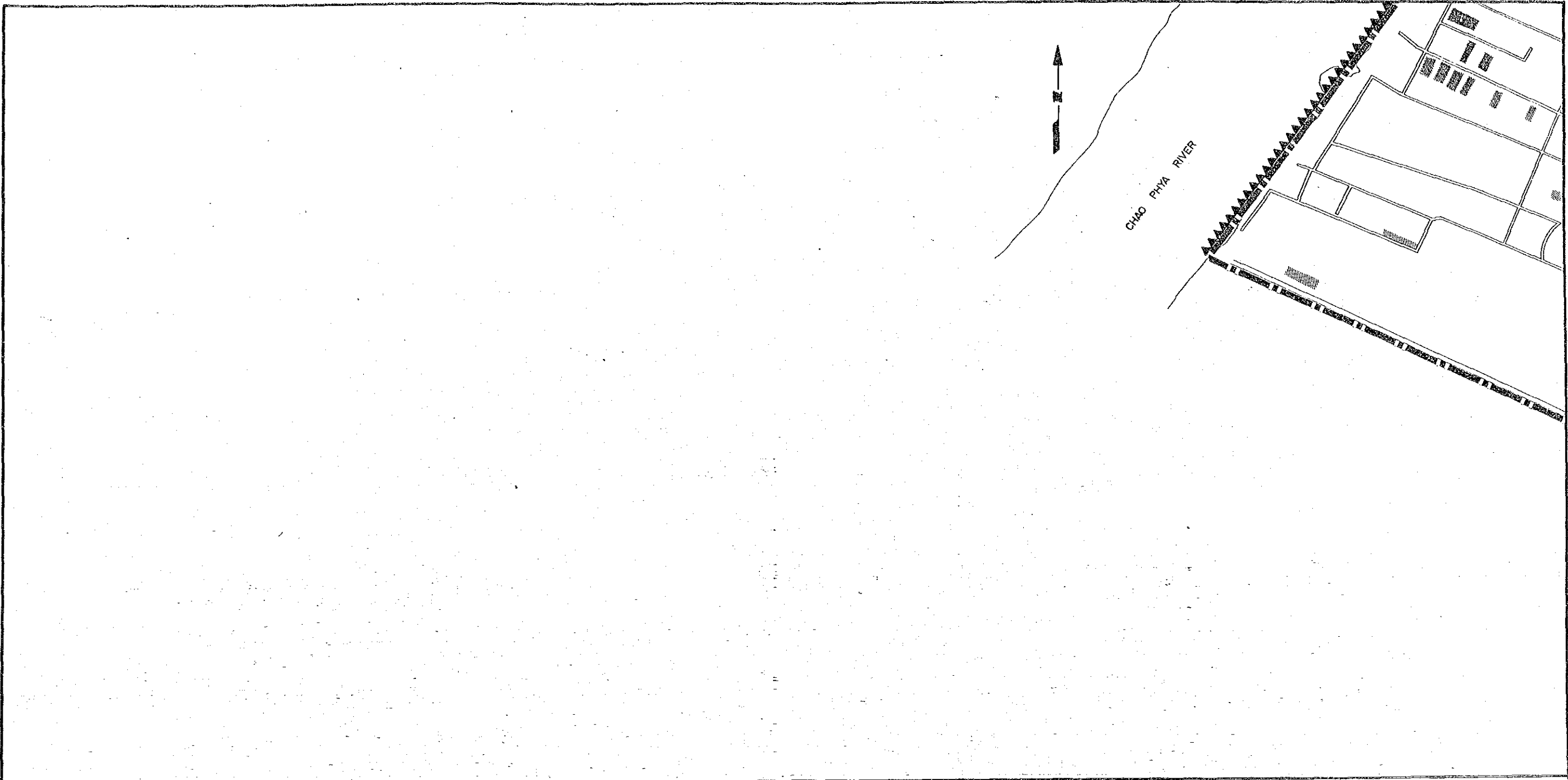
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DWG. E.17	PLAN OF PROPOSED FACILITIES (16)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



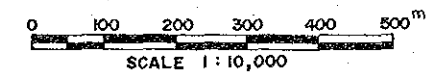
LEGEND

- | | | | |
|--|--|--|--|
| | Existing Barrier Utilizing
Railway, Road Embankment | | Existing Drainage Pipe,
Box Culvert |
| | Proposed Barrier,
to be Newly Constructed | | Proposed Drainage Pipe,
Box Culvert |
| | Klong to be Improved
(with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved
(with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate
W; Wooden Gate
S; Steel Gate |

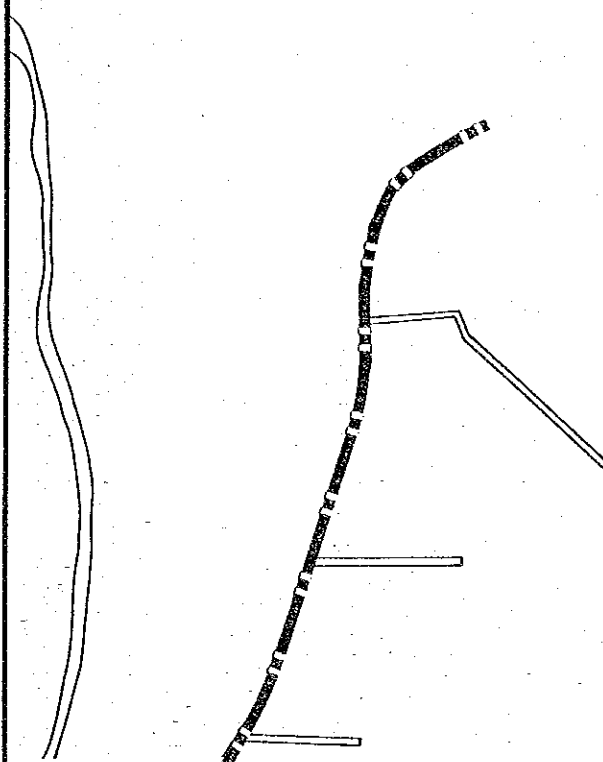
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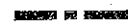

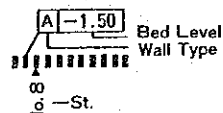
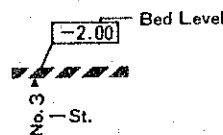
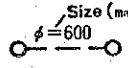
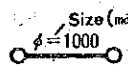


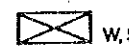
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DWG. E.18	PLAN OF PROPOSED FACILITIES (17)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



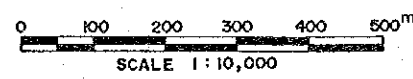
LEGEND

-  Existing Barrier Utilizing Railway, Road Embankment
-  Proposed Barrier, to be Newly Constructed
-  Klong to be Improved (with Rectangular Section)
-  Klong to be Improved (with Trapezoidal Section)
-  Existing Drainage Pipe, Box Culvert
-  Proposed Drainage Pipe, Box Culvert
-  Existing Pumping Station
-  Proposed Pumping Station
-  Existing Gate
 W; Wooden Gate
 S; Steel Gate

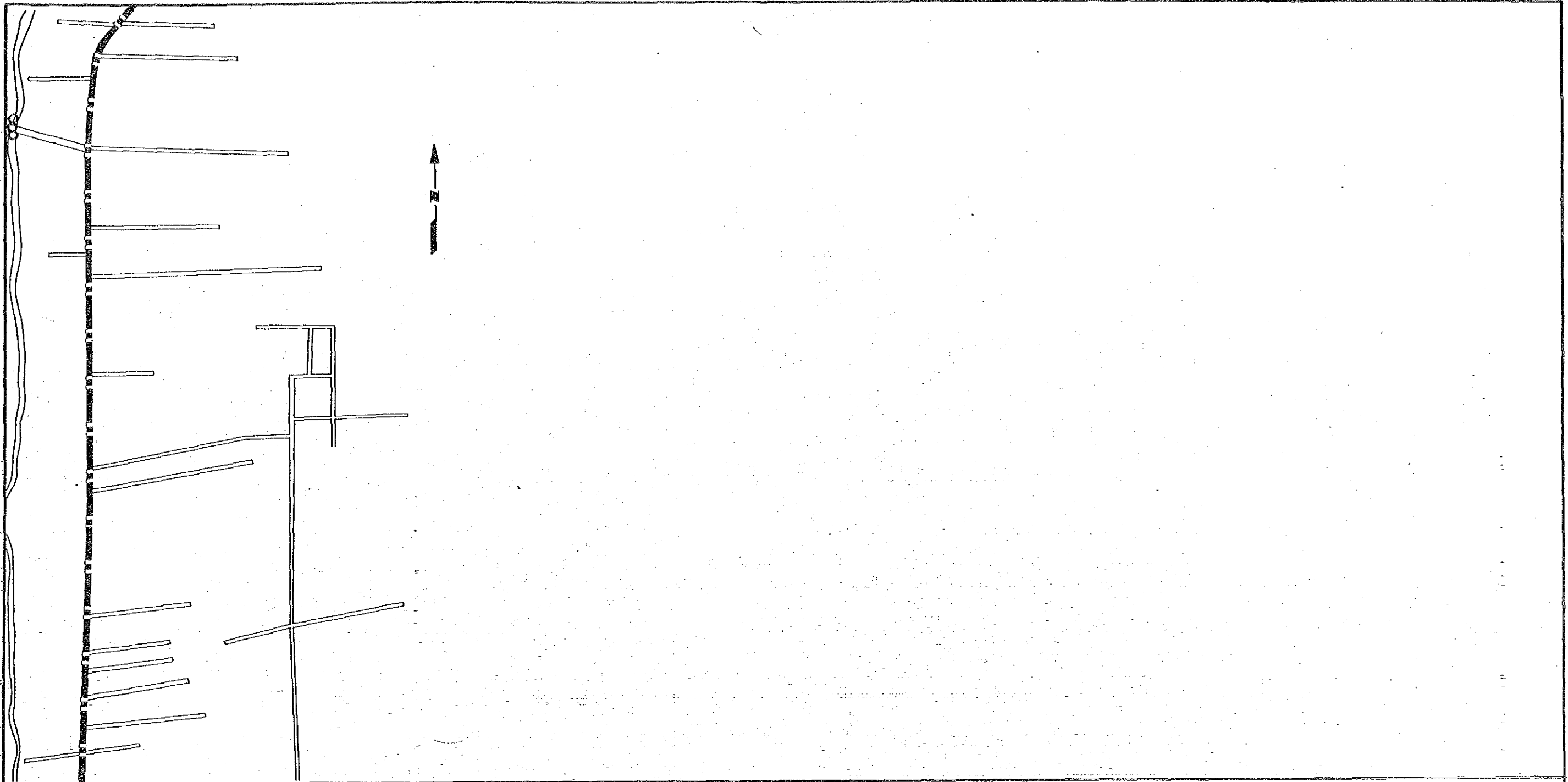
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DWG. E.19	PLAN OF PROPOSED FACILITIES (18)
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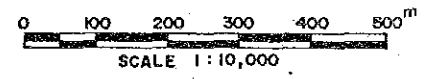
LEGEND

- | | | | |
|--|---|--|--|
| | Existing Barrier Utilizing Railway, Road Embankment | | Existing Drainage Pipe, Box Culvert |
| | Proposed Barrier, to be Newly Constructed | | Proposed Drainage Pipe, Box Culvert |
| | Klong to be Improved (with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved (with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate
W; Wooden Gate
S; Steel Gate |

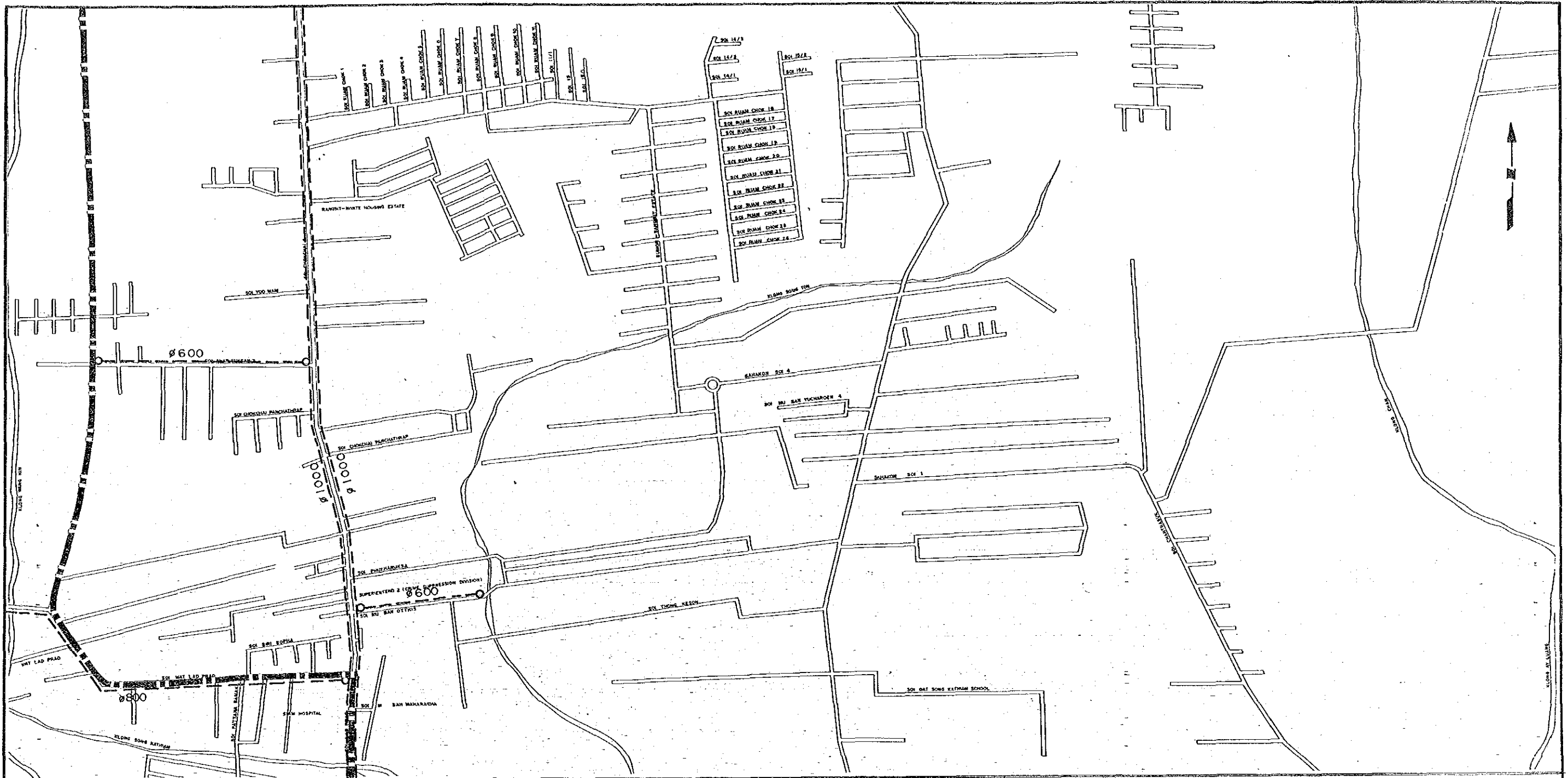
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DWG. E.20	PLAN OF PROPOSED FACILITIES (19)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



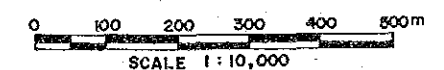
LEGEND

- | | | | |
|--|---|--|-------------------------------------|
| | Existing Barrier Utilizing Railway, Road Embankment | | Existing Drainage Pipe, Box Culvert |
| | Proposed Barrier, to be Newly Constructed | | Proposed Drainage Pipe, Box Culvert |
| | Klong to be Improved (with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved (with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate |
| | | | W; Wooden Gate |
| | | | S; Steel Gate |

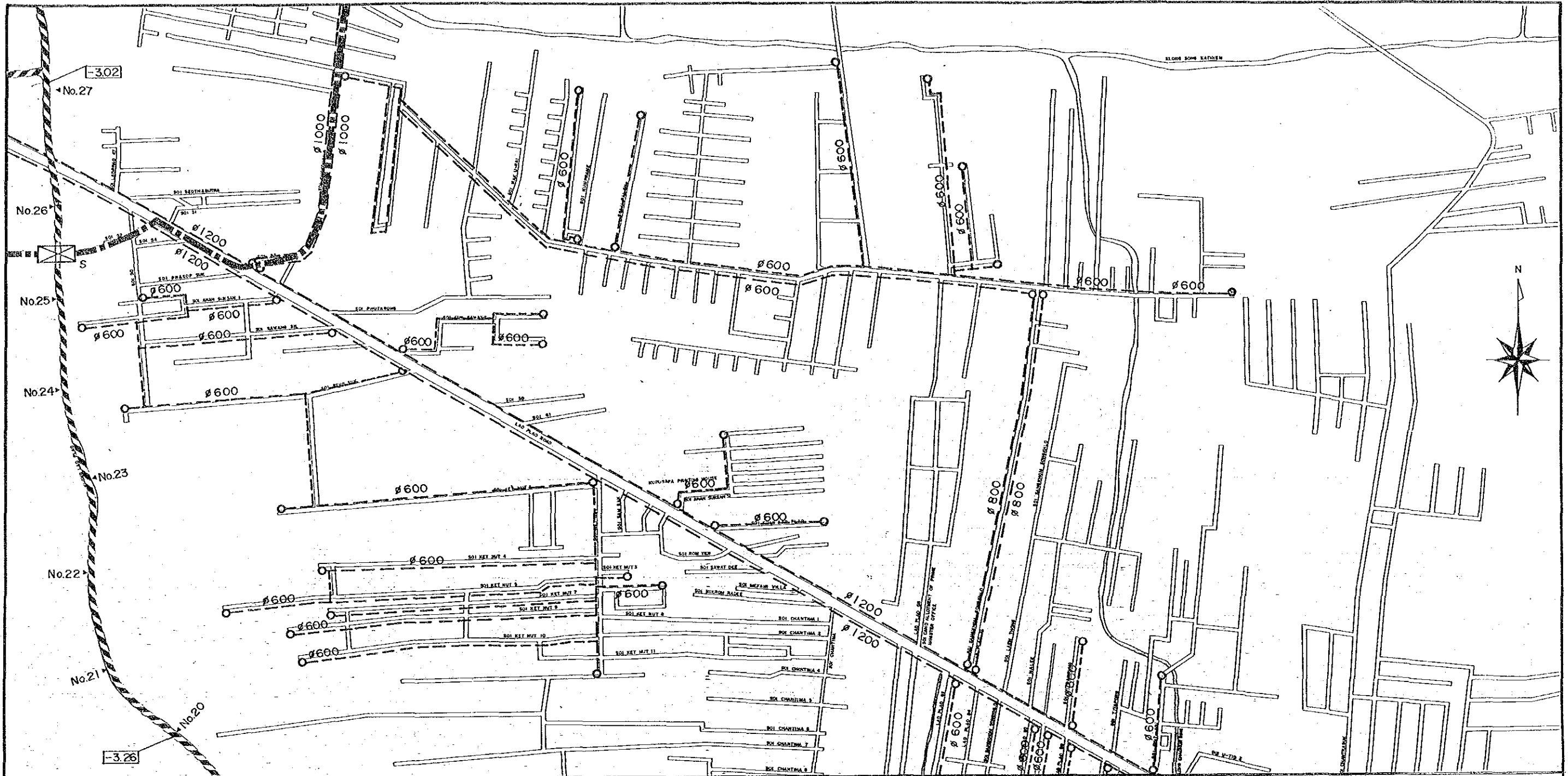
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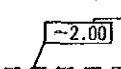
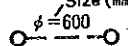
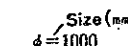



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DWG. E.21	PLAN OF PROPOSED FACILITIES (20)
FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK	



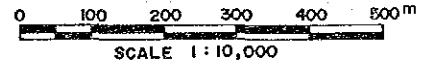
LEGEND

-  Existing Barrier Utilizing Railway, Road Embankment
-  Proposed Barrier, to be Newly Constructed
-  Klong to be Improved (with Rectangular Section)
-  Klong to be Improved (with Trapezoidal Section)
-  Existing Drainage Pipe, Box Culvert
-  Proposed Drainage Pipe, Box Culvert
-  Existing Pumping Station
-  Proposed Pumping Station
-  Existing Gate
W; Wooden Gate
S; Steel Gate

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DWG. E.22	PLAN OF PROPOSED FACILITIES (21)
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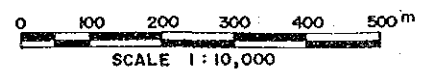
LEGEND

- | | | | |
|--|---|--|--|
| | Existing Barrier Utilizing Railway, Road Embankment | | Existing Drainage Pipe, Box Culvert |
| | Proposed Barrier, to be Newly Constructed | | Proposed Drainage Pipe, Box Culvert |
| | Klong to be Improved (with Rectangular Section) | | Existing Pumping Station |
| | Klong to be Improved (with Trapezoidal Section) | | Proposed Pumping Station |
| | | | Existing Gate
W; Wooden Gate
S; Steel Gate |

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DWG. E.23	PLAN OF PROPOSED FACILITIES (22)
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