

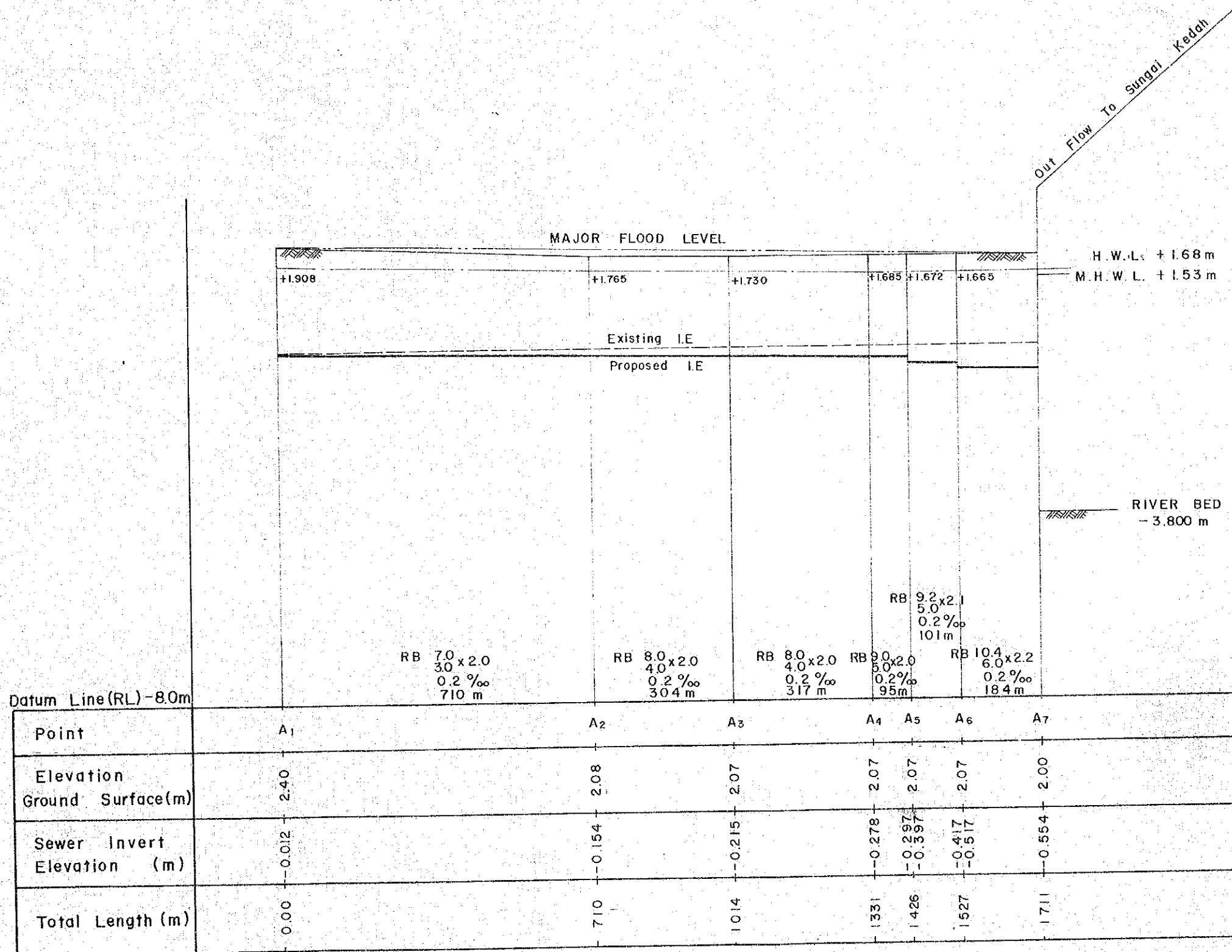
ANNEX B

SUPPLEMENTAL FIGURES AND
TABLES FOR DRAINAGE SYSTEM
PLANNING

TRUNK DRAIN IN BASIN A

LEGEND

- I.E. Invert Elevation
- Water Level in Initial Storm
- ‰ 1/1000 Slope
- RB Rubble Wall Channel
- 7.0
3.0 x 2.0 Upper Width
7.0 m
- Bottom Width
3.0 m
- Depth
2.0 m



Refer to FIGURE 4.4

Scale : Horizontal 1:25,000
Vertical 1:100

MASTER PLAN AND FEASIBILITY STUDY FOR SEWERAGE AND DRAINAGE SYSTEM PROJECT IN ALOR SETAR AND ITS URBAN ENVIRONS
PROFILE OF TRUNK DRAIN
FIGURE B.1

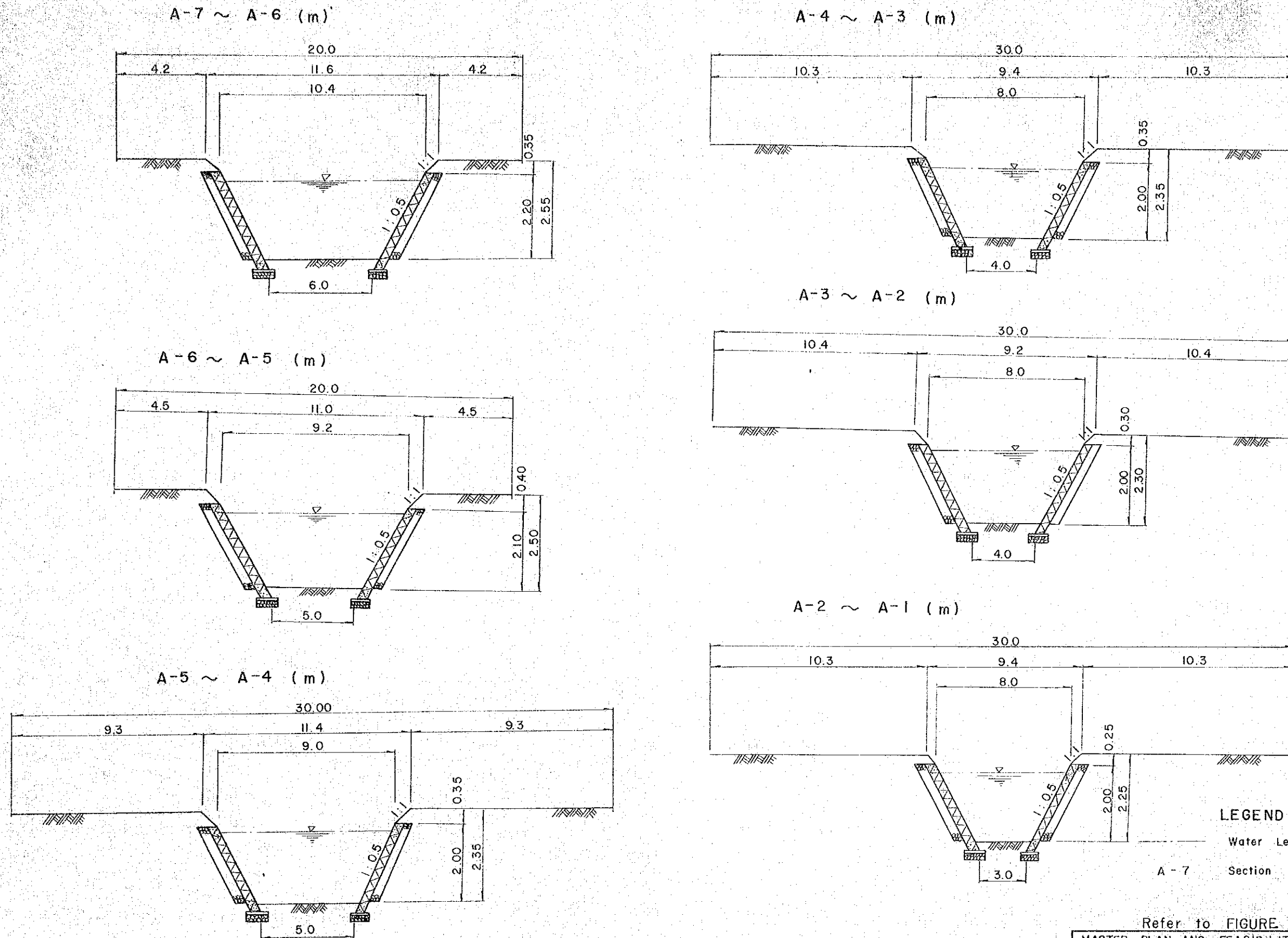
TABLE B-1

Analysis of Proposed Drainage System

Line NO.	Year 1979				Year 2000				Details of Proposed Drains to accept runoff						Existing Drain		Runoff Major Storm m ³ /S	Reserve Width m
	Total Area ha	Runoff Coefficient	Storage Coefficient	Runoff m ³ /S	Total Area ha	Runoff Coefficient	Storage Coefficient	Runoff m ³ /S	Length m	Slope of Sewer ‰	Velocity m/S	Time of Concentration min	Capacity m ³ /S	Size m	Size m	Capacity m ³ /S		
Contributing area	• 15.9	0.3			* 19.6	0.30						45.8						
A1 - A2	• 9.7 • 2.7	0.3 0.4	0.80	1.655	6.8	0.65	0.91	8.076	710	0.2	0.99	57.8	8.510	RB 7.0 x 2.0	E 15.0 x 2.0	5.128	12.584	30.00
A2 - A3	11.7	0.4	0.78	2.242	9.6	0.65	0.88	8.697	304	0.2	1.03	62.7	10.794	RB 8.0 x 2.0	E 14.0 x 2.0	4.140	13.682	30.00
A3 - A4	• 51.5 • 24.0	0.3 0.3	0.76	5.333	14.3	0.65	0.86	9.818	317	0.2	1.03	67.8	10.794	RB 8.0 x 2.0	E 14.0 x 2.0	4.140	15.482	30.00
A4 - A5	2.2	0.4	0.75	5.333	19.9 1.0	0.65 0.85	0.85	12.086	95	0.2	1.07	69.3	13.125	RB 9.0 x 2.0	E 14.0 x 2.0	4.140	19.150	30.00
A5 - A6	13.9	0.4	0.75	5.759	• 6.5 8.0 2.3	0.65 0.65 0.85	0.85	13.973	101	0.2	1.10	69.8	14.448	RB 9.2 x 2.1	E 15.0 x 2.0	5.930	22.247	20.00
A6 - A7	4.4	0.65	0.74	5.785	• 11.6 1.0 13.1	0.65 0.65 0.85	0.84	17.011	184	0.2	1.16	73.4	18.631	RB 10.4 x 2.2	E 15.0 x 2.0	5.930	26.989	20.00

LEGEND

- E: Earth Drain
- RB: Rubble wall channel
- ‰ 1/1000
- Paddy Field
- * Area of Treatment Facility site
- Contributing Area



LEGEND

Water Level in Initial Storm

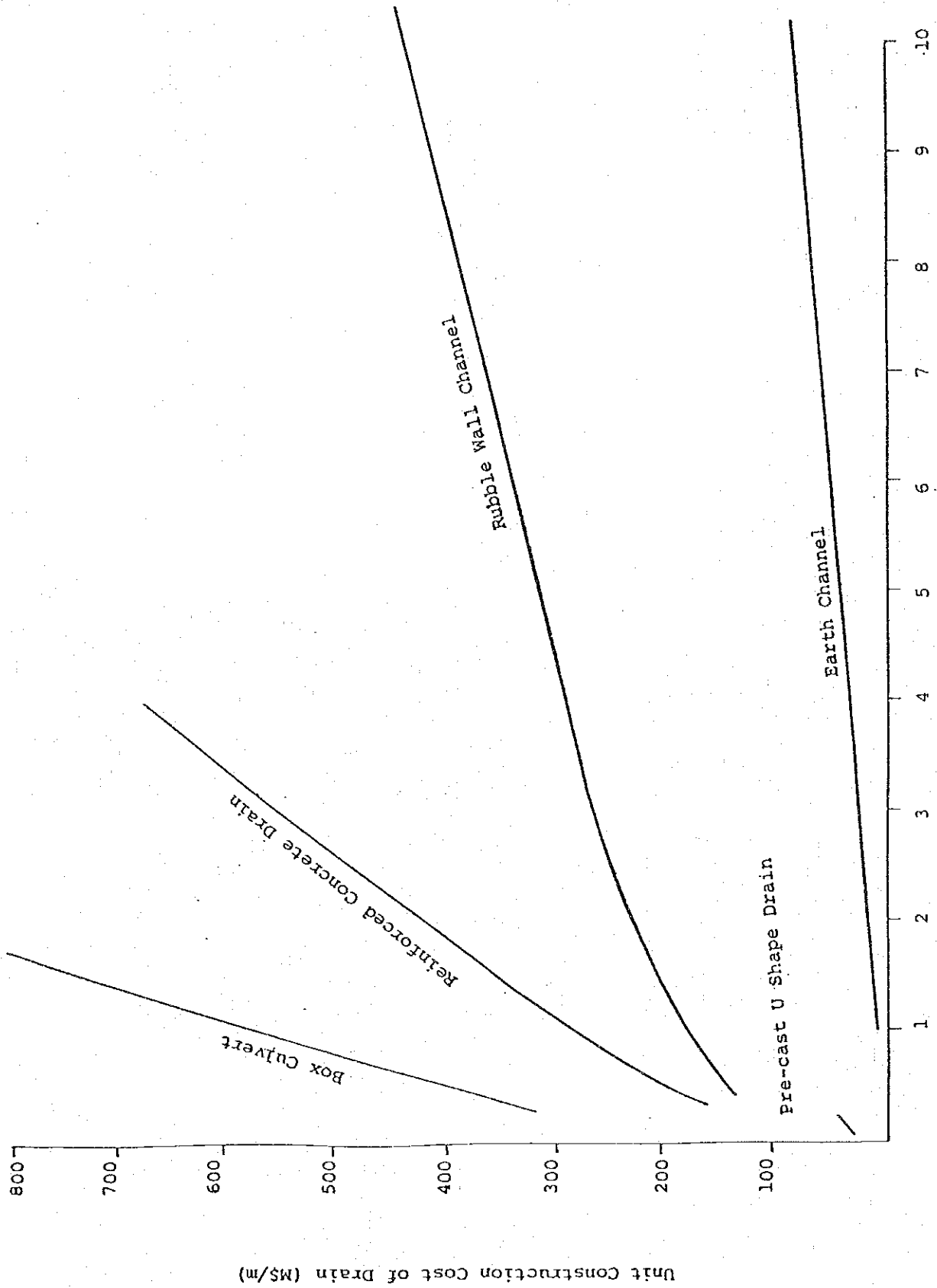
A - 7 Section Point

Refer to FIGURE 4.4

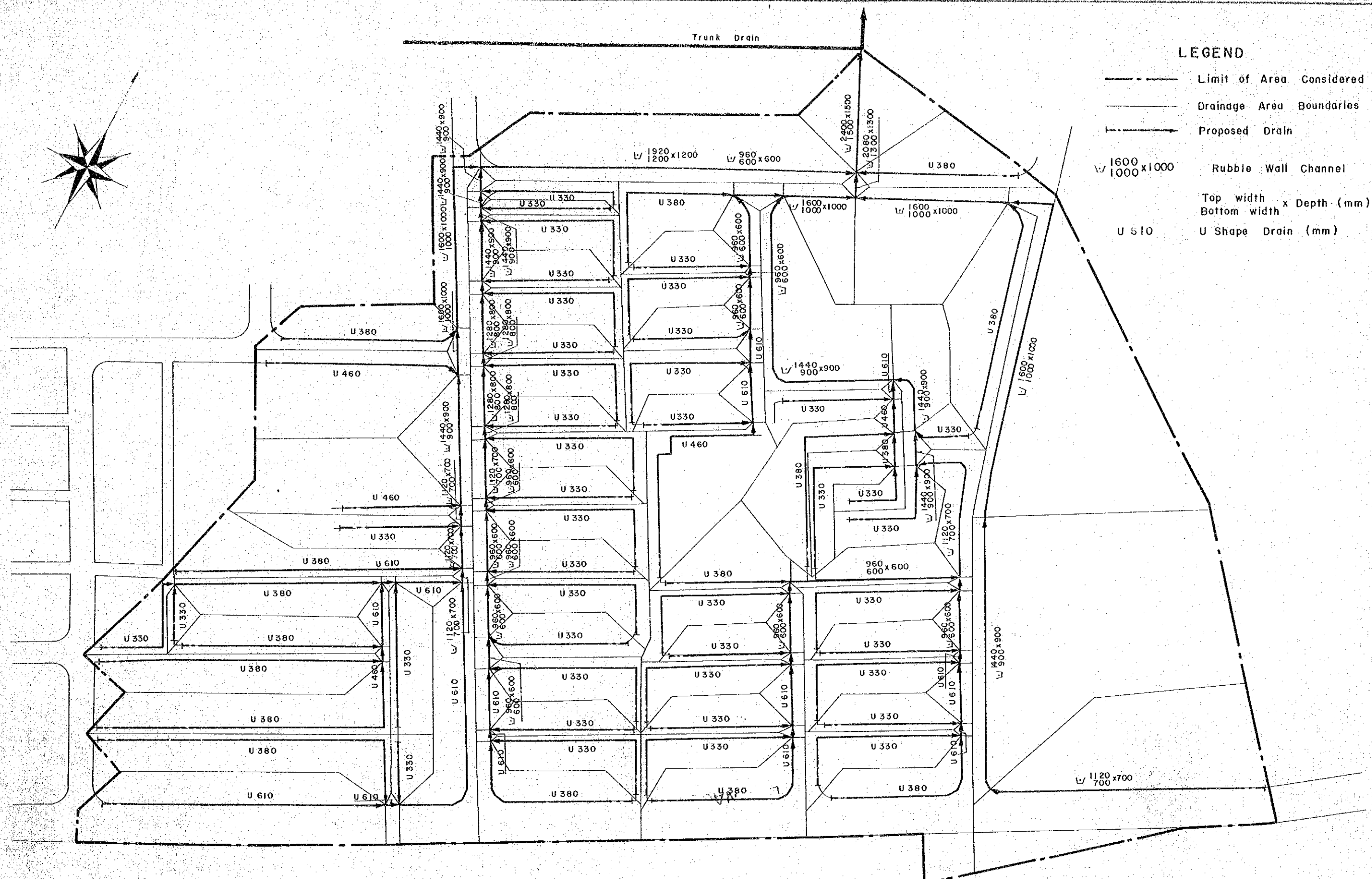
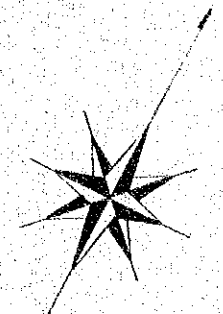
MASTER PLAN AND FEASIBILITY STUDY FOR SEWERAGE AND DRAINAGE SYSTEM PROJECT IN ALDR SETAR AND ITS URBAN ENVIRONS

PROPOSED CROSS SECTION

FIGURE B.2



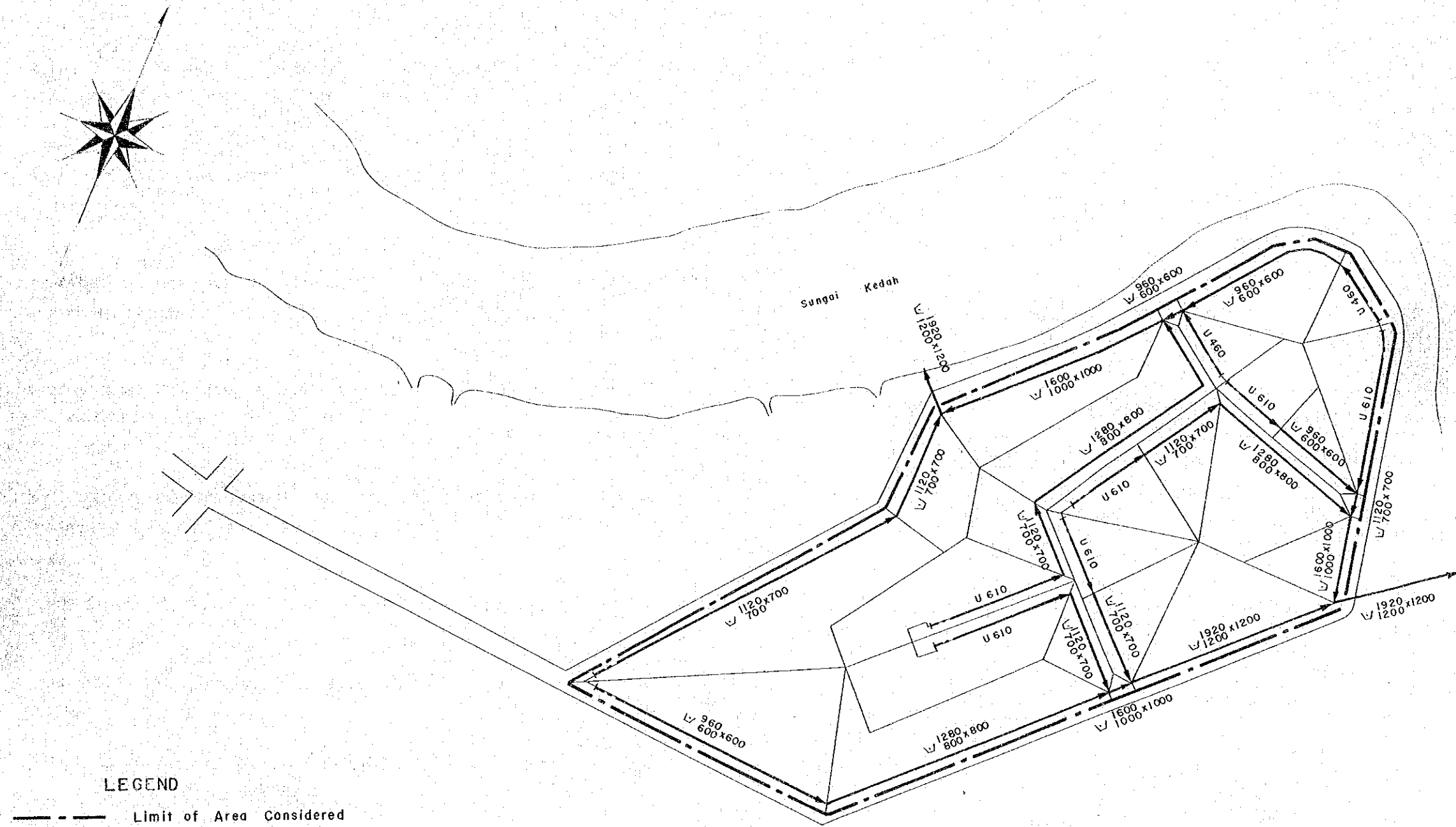
Section Area of Drain (m²)
 Figure B.3 CONSTRUCTION COST CURVES OF DRAIN



LEGEND

- Limit of Area Considered
- Drainage Area Boundaries
- Proposed Drain
- ∩ 1600 x 1000 Rubble Wall Channel
- Top width x Depth (mm)
Bottom width
- U 610 U Shape Drain (mm)

MASTER PLAN AND FEASIBILITY STUDY FOR SEWERAGE AND DRAINAGE SYSTEM PROJECT IN ALOR SETAR AND ITS URBAN ENVIRONS
REPRESENTATIVE NETWORK OF SMALLER DRAINS IN RESIDENTIAL AREA FIGURE B.4



- LEGEND**
- Limit of Area Considered
 - Drainage Area Boundaries
 - Proposed Drain
 - ∟ 1600 x 1000 Rubble Wall Channel
Top width x Depth (mm)
Bottom width x Depth (mm)
 - U 610 U Shape Drain (mm)

MASTER PLAN AND FEASIBILITY STUDY FOR SEWERAGE AND DRAINAGE SYSTEM PROJECT IN ALOR SETAR AND ITS URBAN ENVIRONS
REPRESENTATIVE NETWORK OF SMALLER DRAINS IN INDUSTRIAL AREA FIGURE B. 6

ANNEX C - LIST OF REFERENCES

- (1) Planning and Design Procedure No.1, "URBAN DRAINAGE DESIGN STANDARDS AND PROCEDURES FOR PENINSULAR MALAYSIA" (1975) DID
- (2) Hydrological Procedure No.1 "ESTIMATION OF THE DESIGN RAINSTORM" (1973) DID
- (3) Hydrological Procedure No.11 "DESIGN FLOOD HYDROGRAPH ESTIMATION FOR RURAL CATCHMENTS IN PENINSULAR MALAYSIA" (1976) DID
- (4) Hydrological Procedure No.16 "FLOOD ESTIMATION FOR URBAN AREAS IN PENINSULAR MALAYSIA" (1976) DID
- (5) Hydrological Procedure No.18 "HYDROLOGICAL DESIGN OF AGRICULTURAL DRAINAGE SYSTEMS" (1977) DID
- (6) "WPCF MANUAL OF PRACTICE No.9" (USA) (1970)
- (7) "MANUAL OF SEWERAGE FACILITIES DESIGN" (JAPAN) (1972)
- (8) "THE ROLE OF INFILTRATION IN THE HYDROLOGIC CYCLE TRANS. AGO, Vol. 14" (1933) R.F. HORTON
- (9) "CIVIL ENGINEERING 29, 174" (1959) W.S. KERBY

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