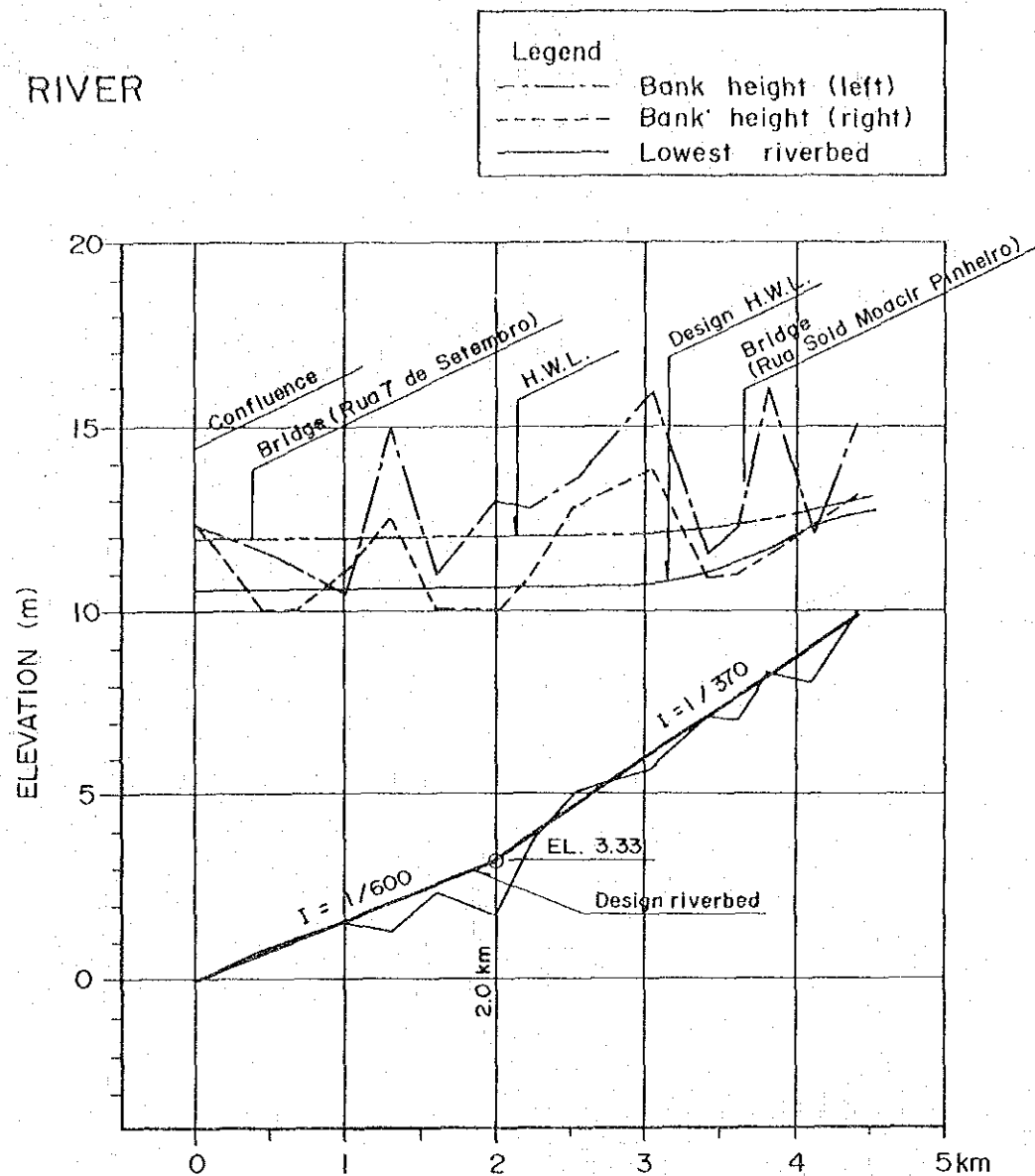


# GARCIA RIVER

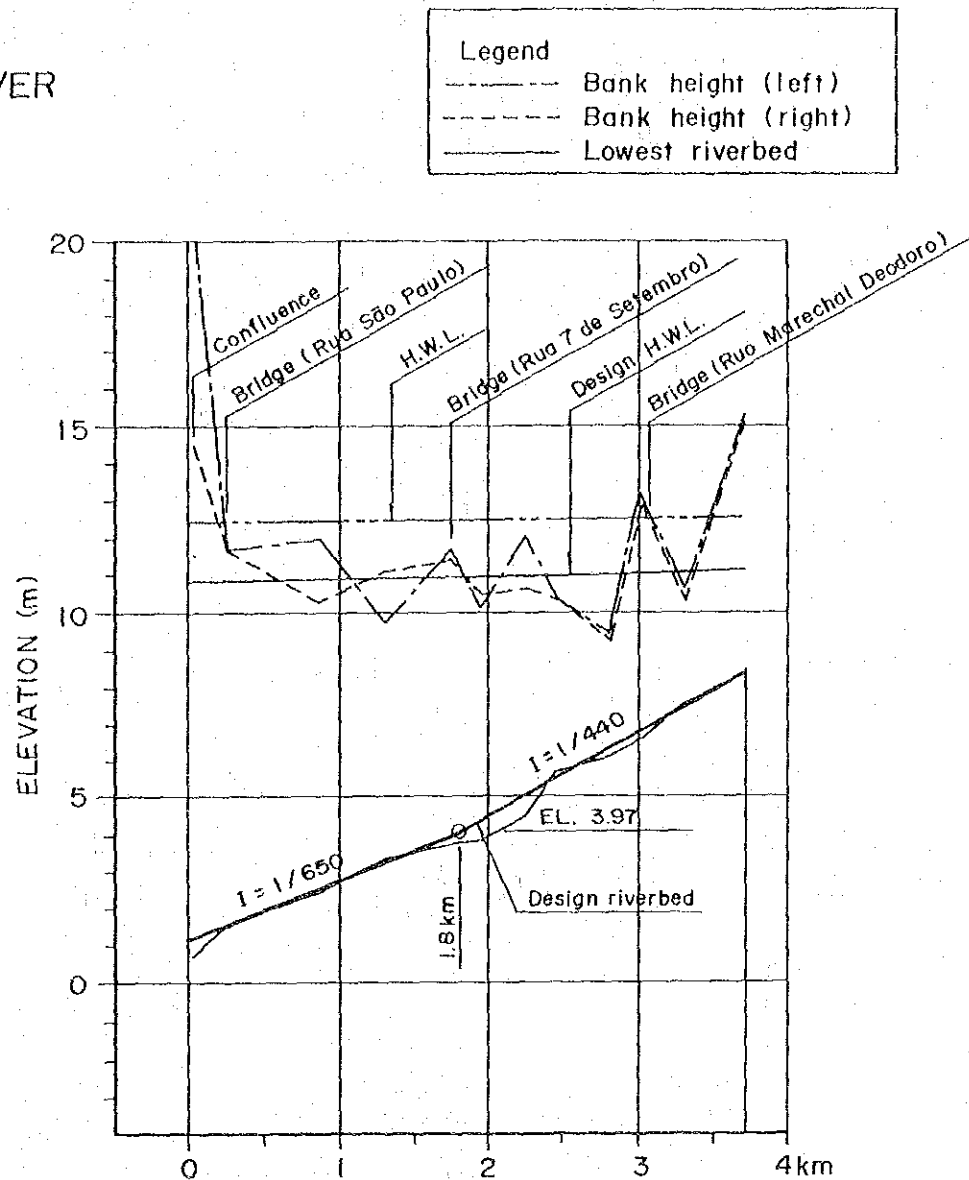


|  |       |       |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|-------|-------|
| DESIGN H.W.L.<br>(10-year probable<br>flood) (m) | 10.62 | 10.63 | 10.64 | 10.69 | 11.07 | 12.06 | 12.64 |
| H.W.L.<br>(50-year probable<br>flood) (m)        | 12.03 | 12.04 | 12.05 | 12.07 | 12.21 | 12.68 | 13.11 |
| DESIGN RIVERBED<br>(m)                           | 0.00  | 1.67  | 3.33  | 6.03  | 7.38  | 8.74  | 9.82  |
| DISTANCE<br>(km)                                 | 0.00  | 1.00  | 2.00  | 3.00  | 3.50  | 4.00  | 4.40  |

Fig.15 DESIGN LONGITUDINAL PROFILE OF MAIN TRIBUTARIES (1/3)



# VELHA RIVER



|  |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|
| DESIGN H.W.L.<br>(10-year probable<br>flood) (m) | 10.89 | 10.90 | 10.90 | 10.95 | 11.06 |
| H.W.L.<br>(50-year probable<br>flood) (m)        | 12.50 | 12.50 | 12.50 | 12.52 | 12.54 |
| DESIGN RIVERBED<br>(m)                           | 1.20  | 2.74  | 4.42  | 6.70  | 8.29  |
| DISTANCE<br>(km)                                 | 0.00  | 1.00  | 2.00  | 3.00  | 3.70  |

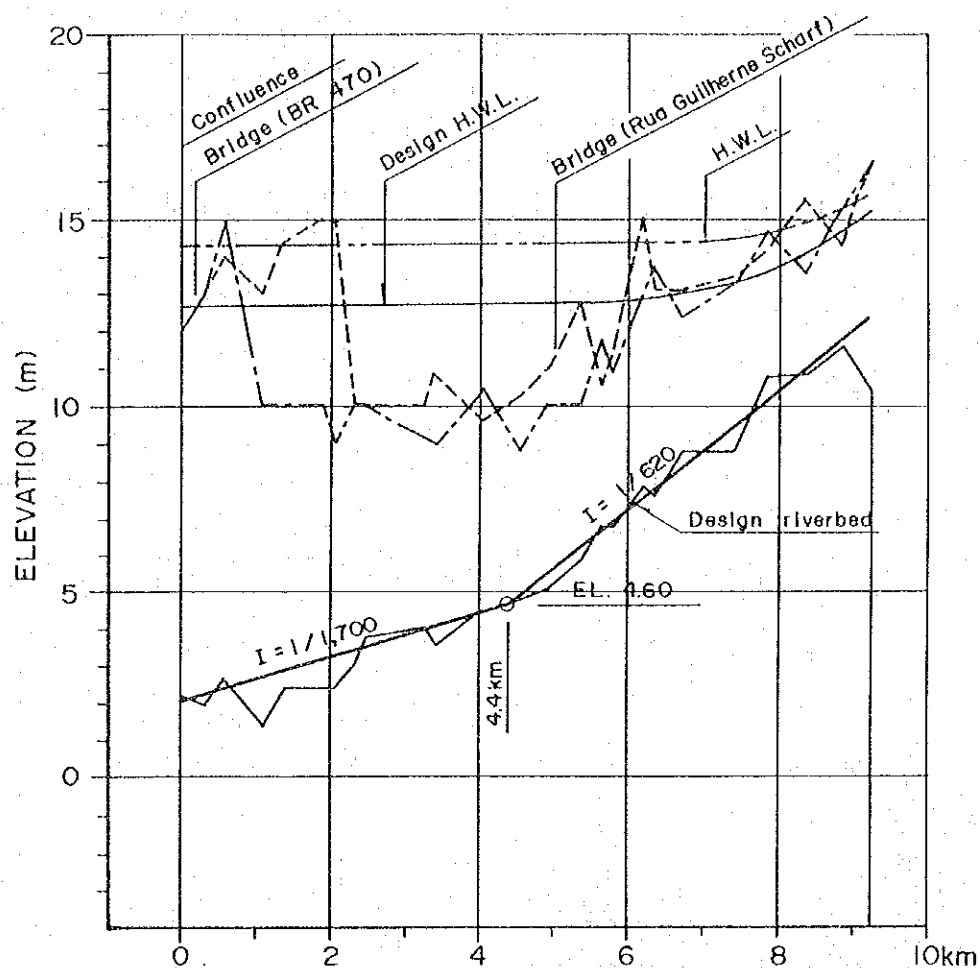
Fig.15 DESIGN LONGITUDINAL PROFILE OF MAIN TRIBUTARIES (2/3)



# ITUUPAVA RIVER

## Legend

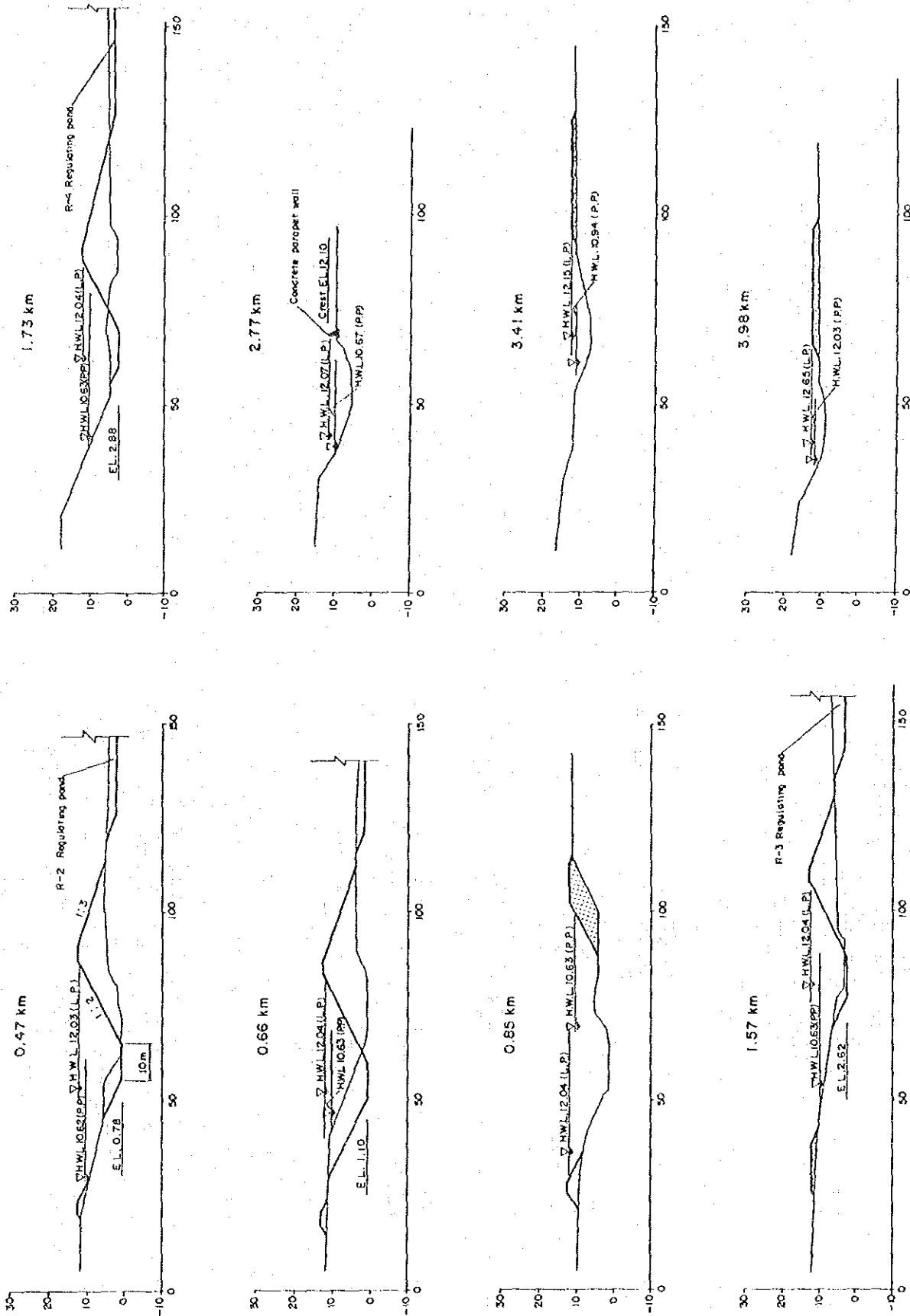
- Bank height (left)
- Bank height (right)
- Lowest riverbed



|  |       |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|-------|
| DESIGN H.W.L.<br>(10-year probable<br>flood) (m) | 12.69 | 12.72 | 12.73 | 12.75 | 13.49 | 15.20 |
| H.W.L.<br>(50-year probable<br>flood) (m)        | 14.30 | 14.31 | 14.31 | 14.32 | 14.57 | 15.56 |
| DESIGN RIVERBED<br>(m)                           | 2.00  | 3.17  | 4.35  | 7.18  | 10.41 | 12.42 |
| DISTANCE<br>(km)                                 | 0.00  | 2.00  | 4.00  | 6.00  | 8.00  | 9.25  |

Fig.15 DESIGN LONGITUDINAL PROFILE OF MAIN TRIBUTARIES (3/3)



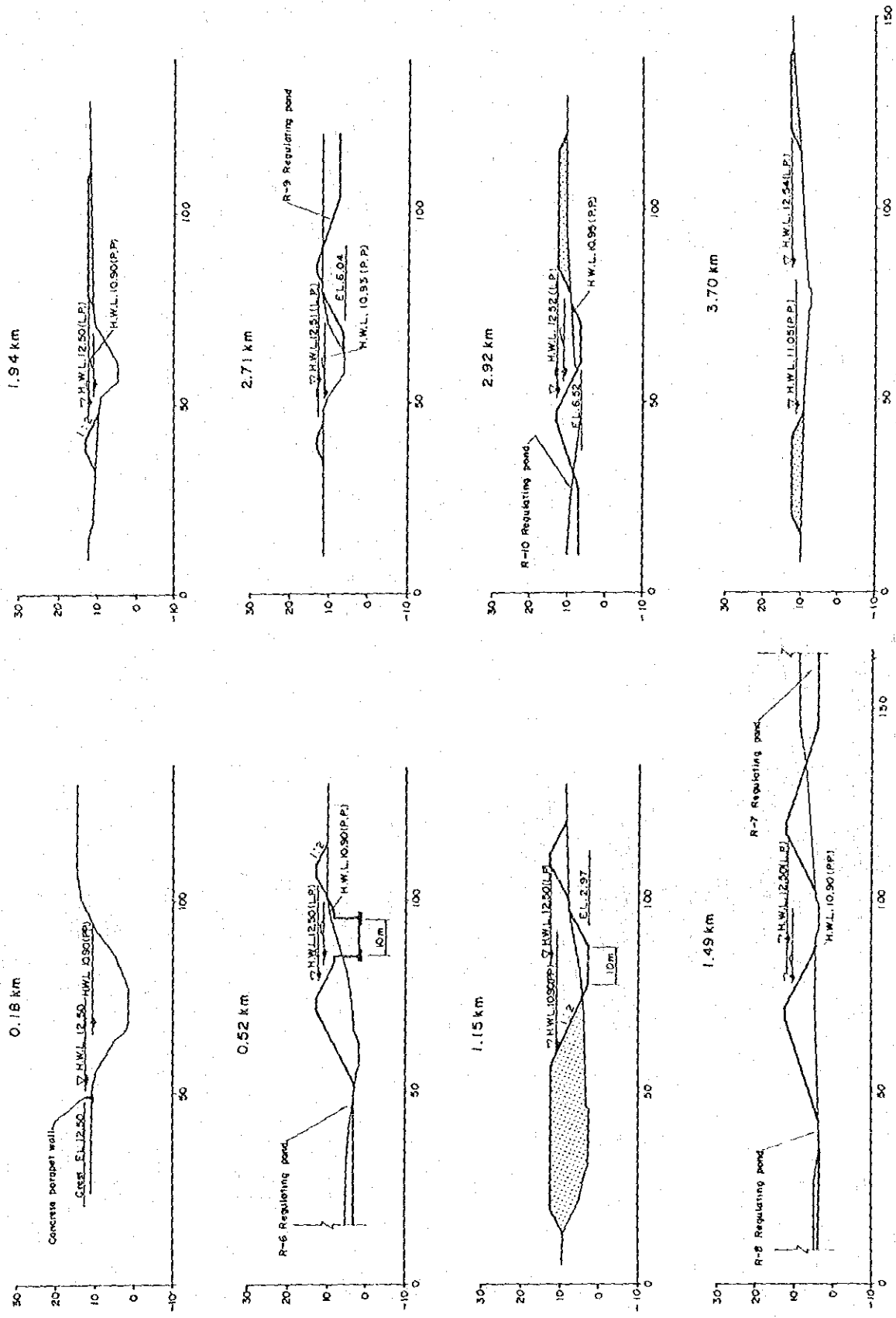


Note : P.P. and L.P. mean Provisional Plan and Long-Term Plan respectively.  
 [Hatched Box] : Filling up by excavated material.

Fig.16 DESIGN RIVER CROSS SECTIONS OF GARCIA RIVER



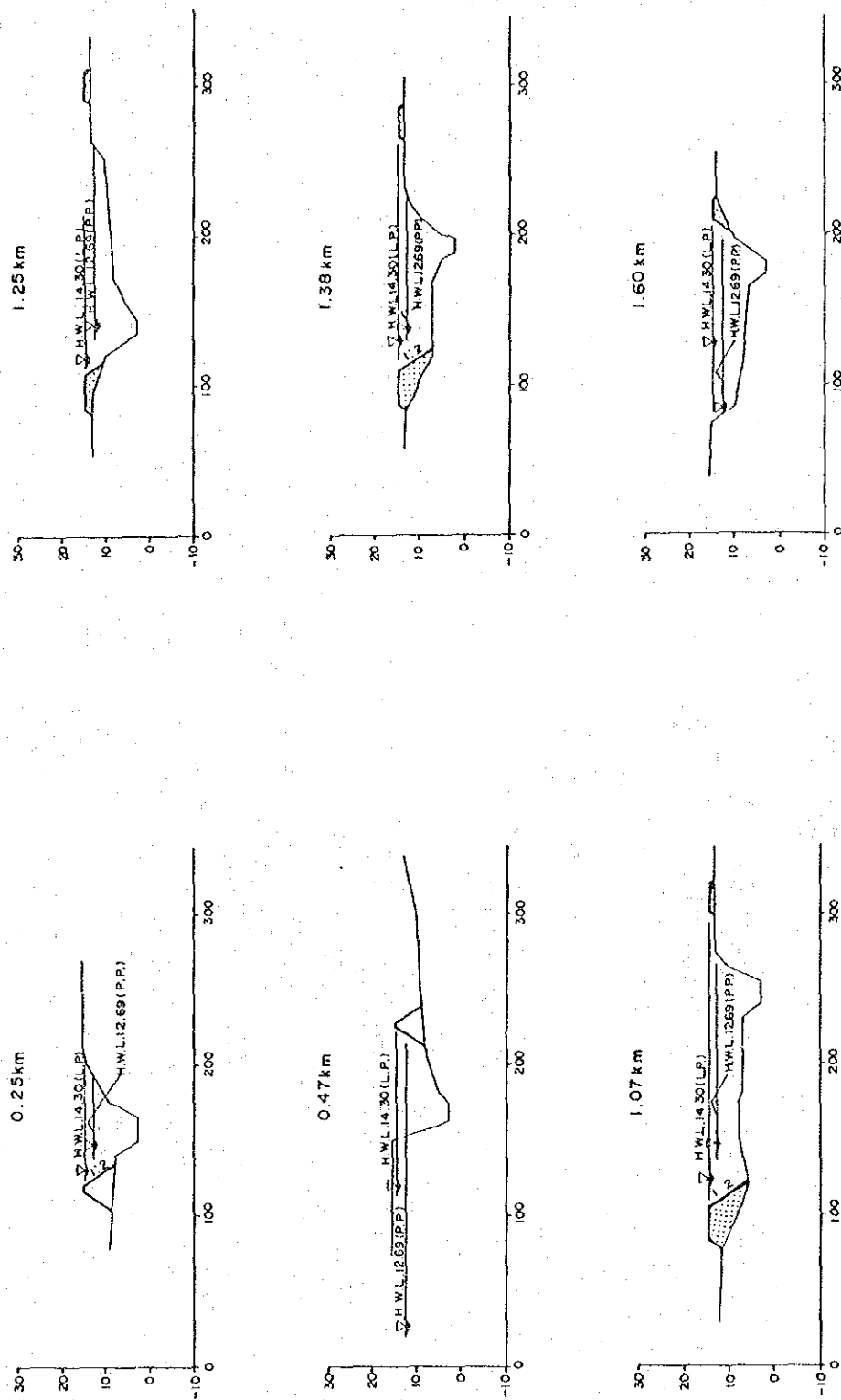




Note : P.P. and L.P. mean Provisional Plan and Long-Term Plan respectively.  
 : Filling up by excavated material.

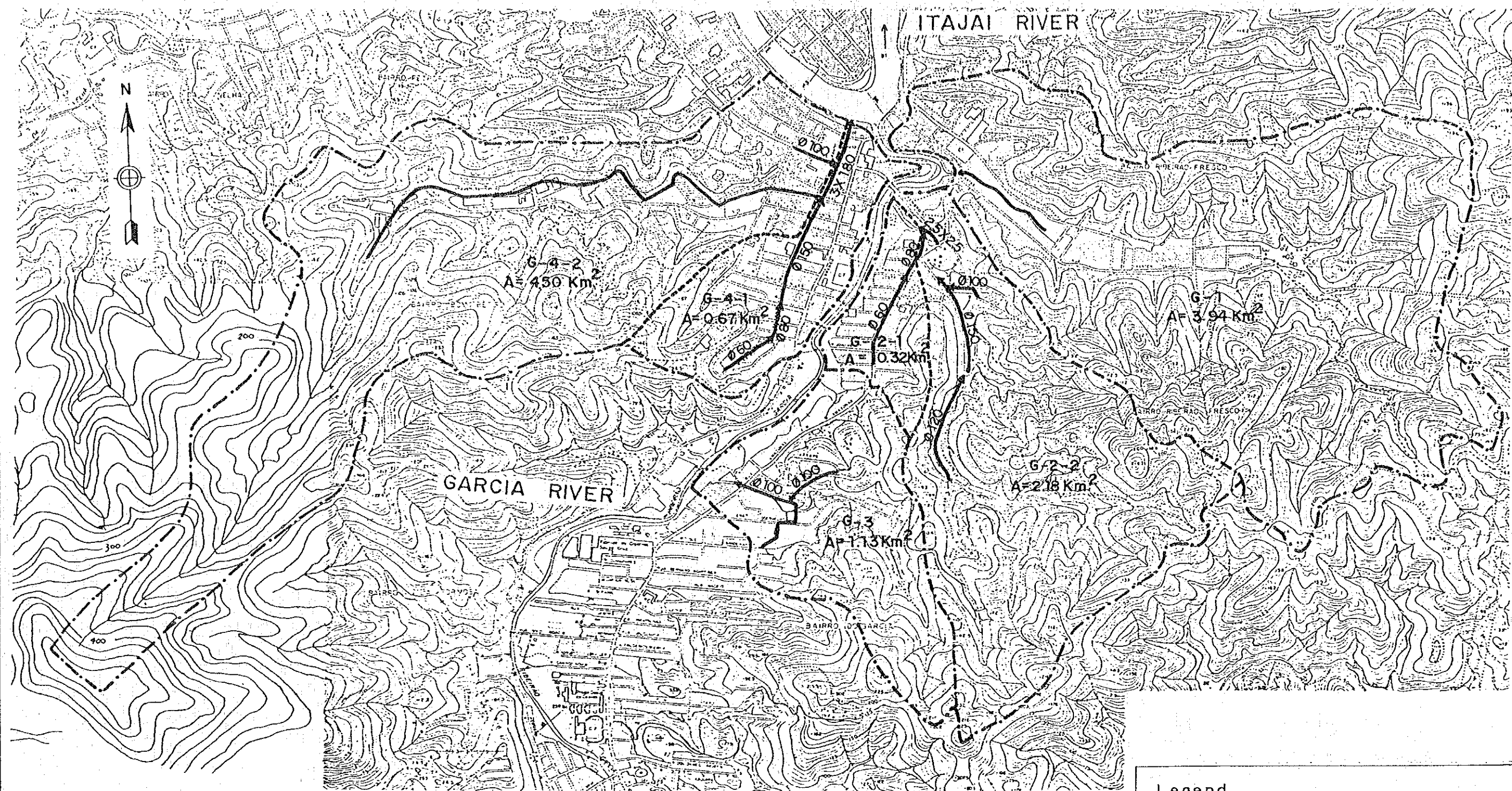
Fig.17 DESIGN RIVER CROSS SECTIONS OF VELHA RIVER





Note : P.P. and L.P. mean Provisional Plan and Long-Term Plan respectively.  
 [Shaded Area] : Filling up by excavated material.

Fig.18 DESIGN RIVER CROSS SECTIONS OF ITOUPAVA RIVER



**Legend**

- Boundary of drainage district
- - - Sub-division in drainage district
- Existing drainage system
- ~ Water course

Note: "Ø" Means diameter of drainage pipe in centimeter.

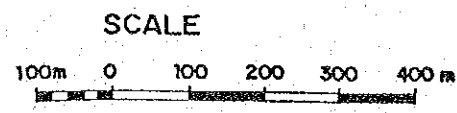
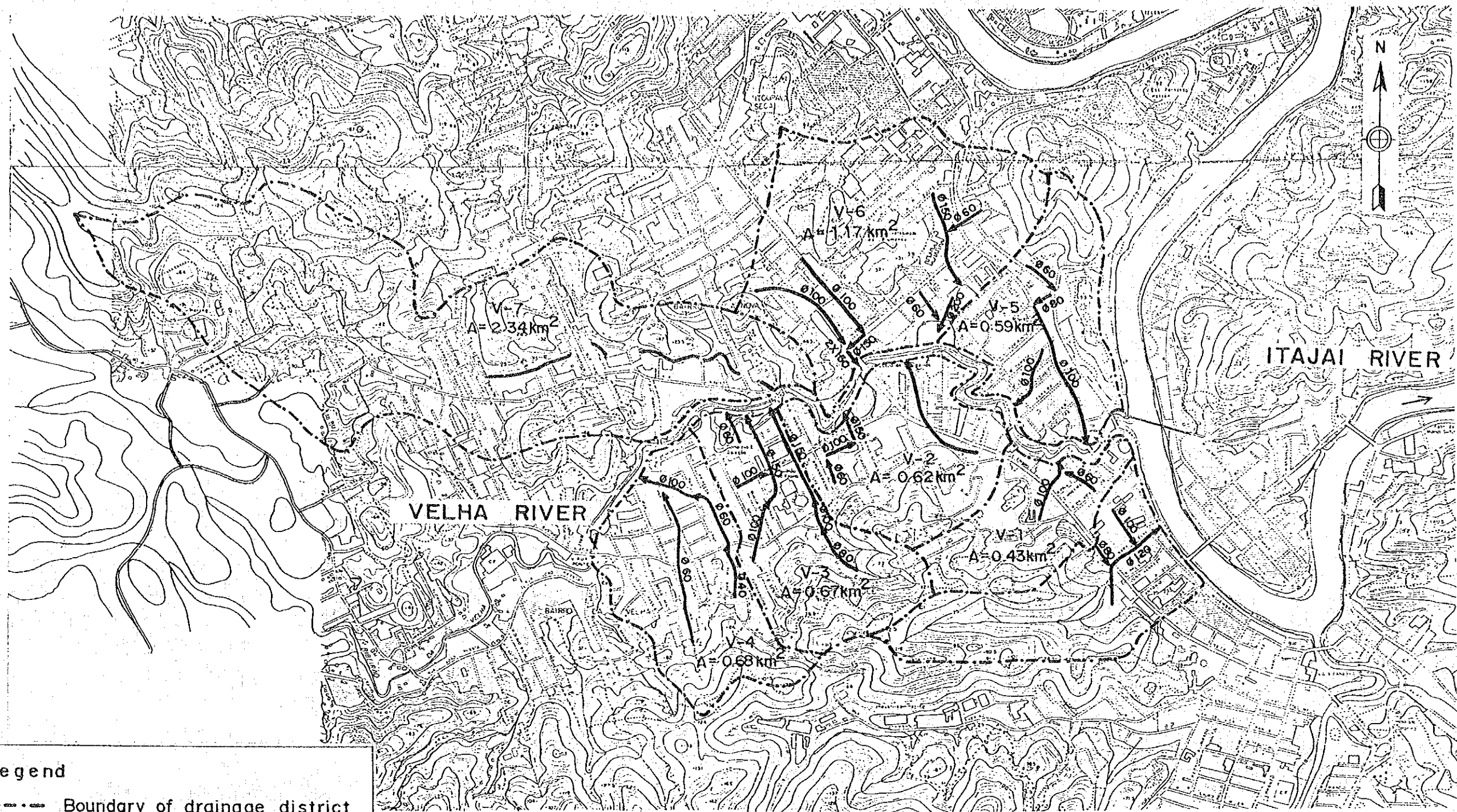


Fig.19

EXISTING DRAINAGE SYSTEM (1/3)  
(GARCIA RIVER BASIN)



#### Legend

- Boundary of drainage district
- Existing drainage system
- ~ Water course

Note: "Ø" Means diameter of drainage pipe in centimeter.

#### SCALE

100m 0 100 200 300 400 m

Fig.19

EXISTING DRAINAGE SYSTEM (2/3)  
(VELHA RIVER BASIN)





Fig.19

EXISTING DRAINAGE SYSTEM (3/3)  
(ITOUPAVA BASIN)





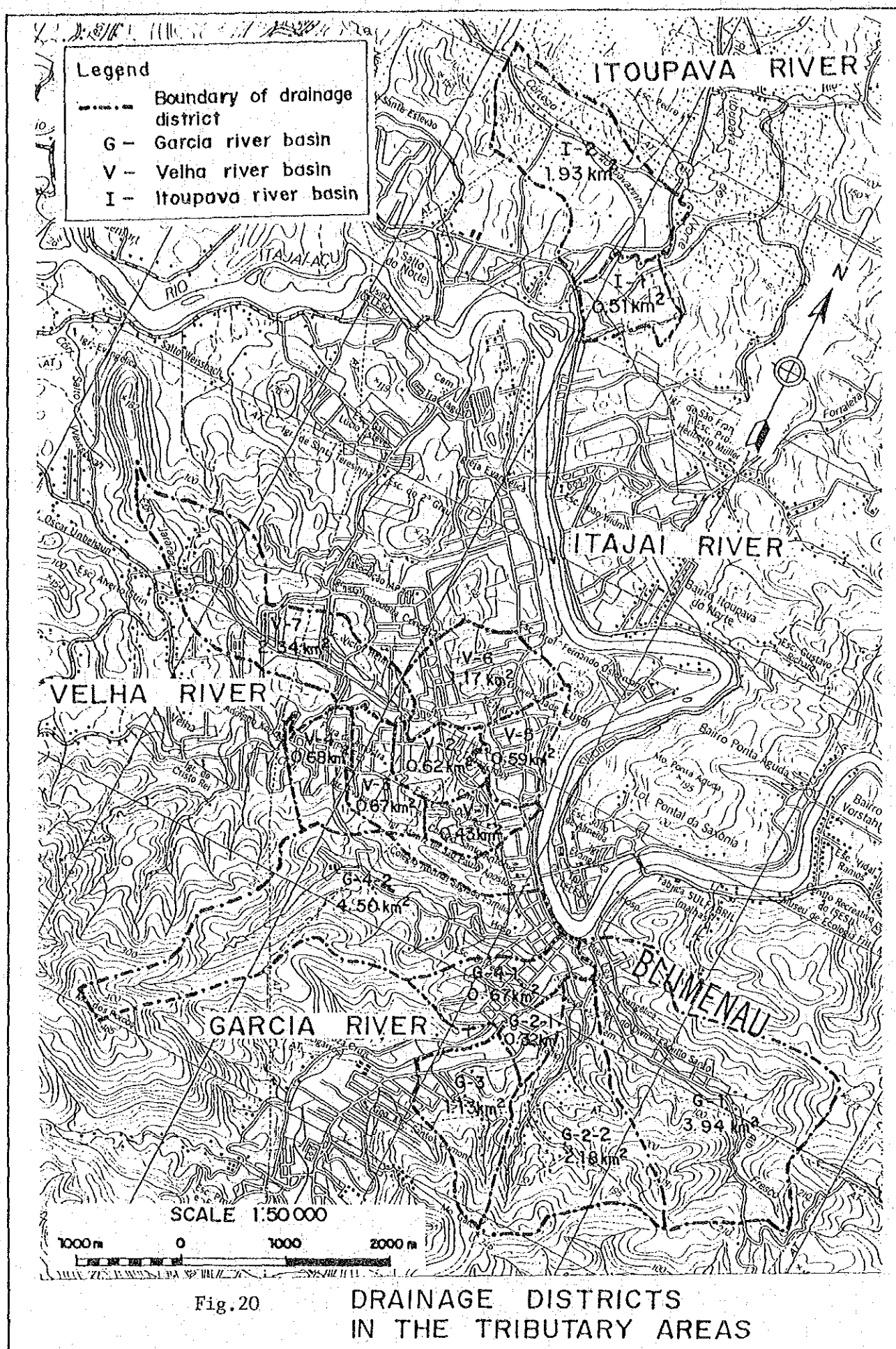
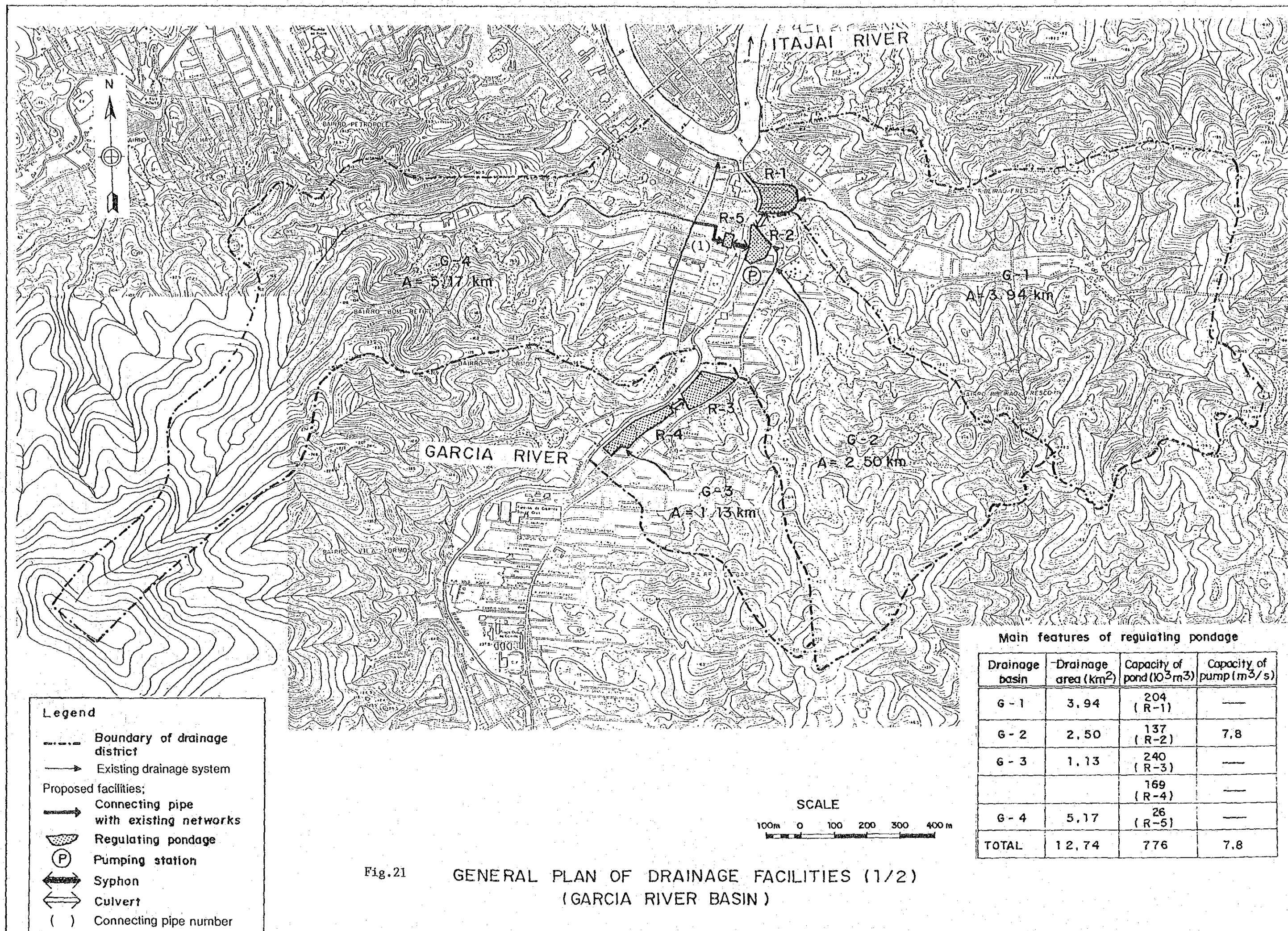
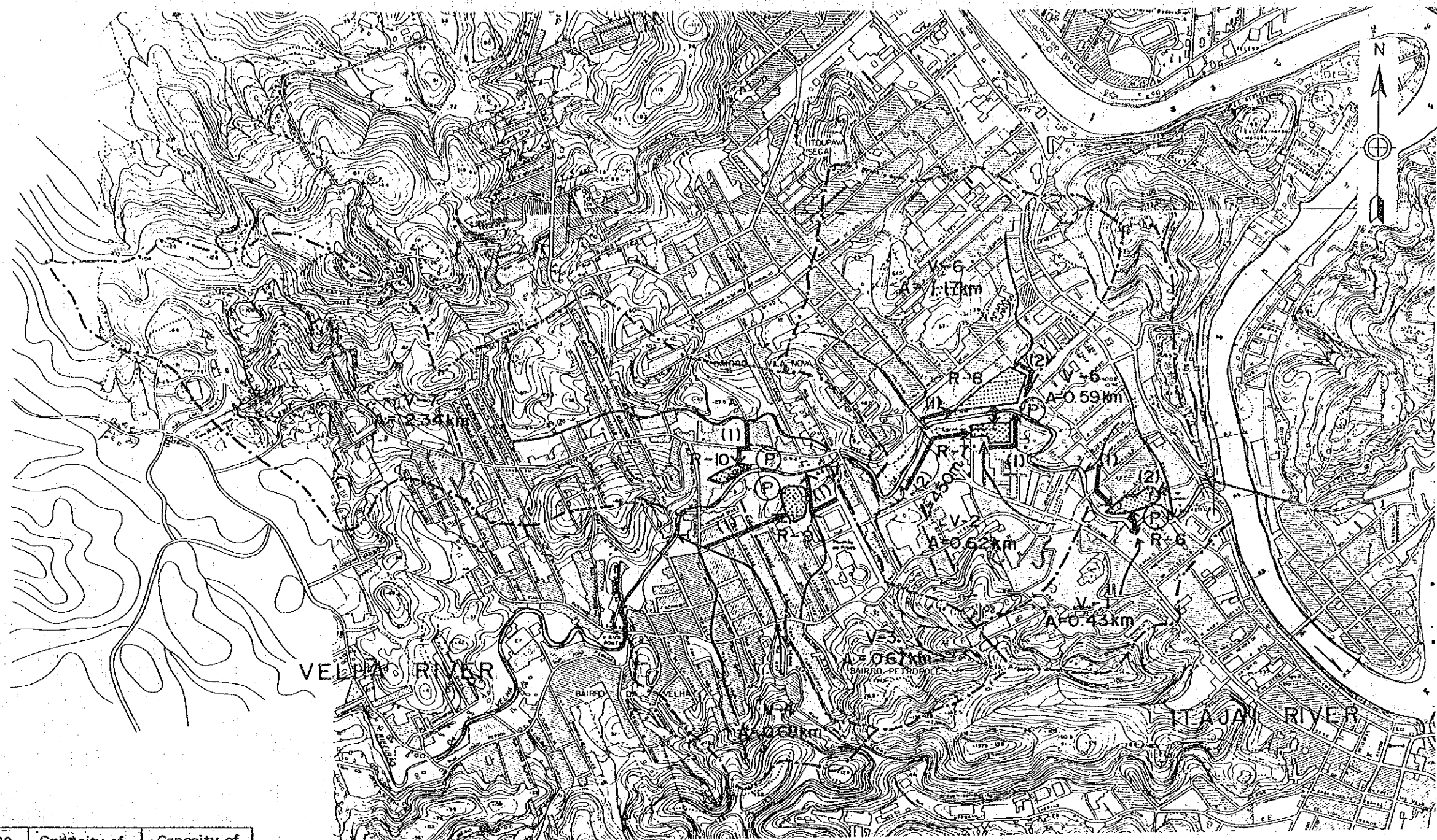


Fig.20

# DRAINAGE DISTRICTS IN THE TRIBUTARY AREAS







| Drainage basin | Drainage area (km <sup>2</sup> ) | Capacity of pond (10 <sup>3</sup> m <sup>3</sup> ) | Capacity of pump (m <sup>3</sup> /s) |
|----------------|----------------------------------|--|--------------------------------------|
| V-1            | 0.43                             | —  | —                                    |
| V-2            | 0.62                             | 101 (R-7)  | —                                    |
| V-3            | 0.67                             | 57 (R-9)   | 1.0                                  |
| V-4            | 0.68                             | —  | —                                    |
| V-5            | 0.59                             | 50 (R-6)   | 0.7                                  |
| V-6            | 1.17                             | 57 (R-8)   | 0.7                                  |
| V-7            | 2.34                             | 15 (R-10)  | 4.0                                  |
| Total          | 6.50                             | 280  | 6.4                                  |

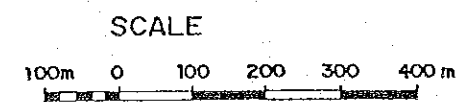


Fig.21 GENERAL PLAN OF DRAINAGE FACILITIES (2/2)  
(VELHA RIVER BASIN)

#### Legend

- Boundary of drainage district
- Existing drainage system
- Proposed facilities;
- Connecting pipe with existing networks
- Regulating pondage
- (P) Pumping station
- ↔ Syphon
- ( ) Connecting pipe number





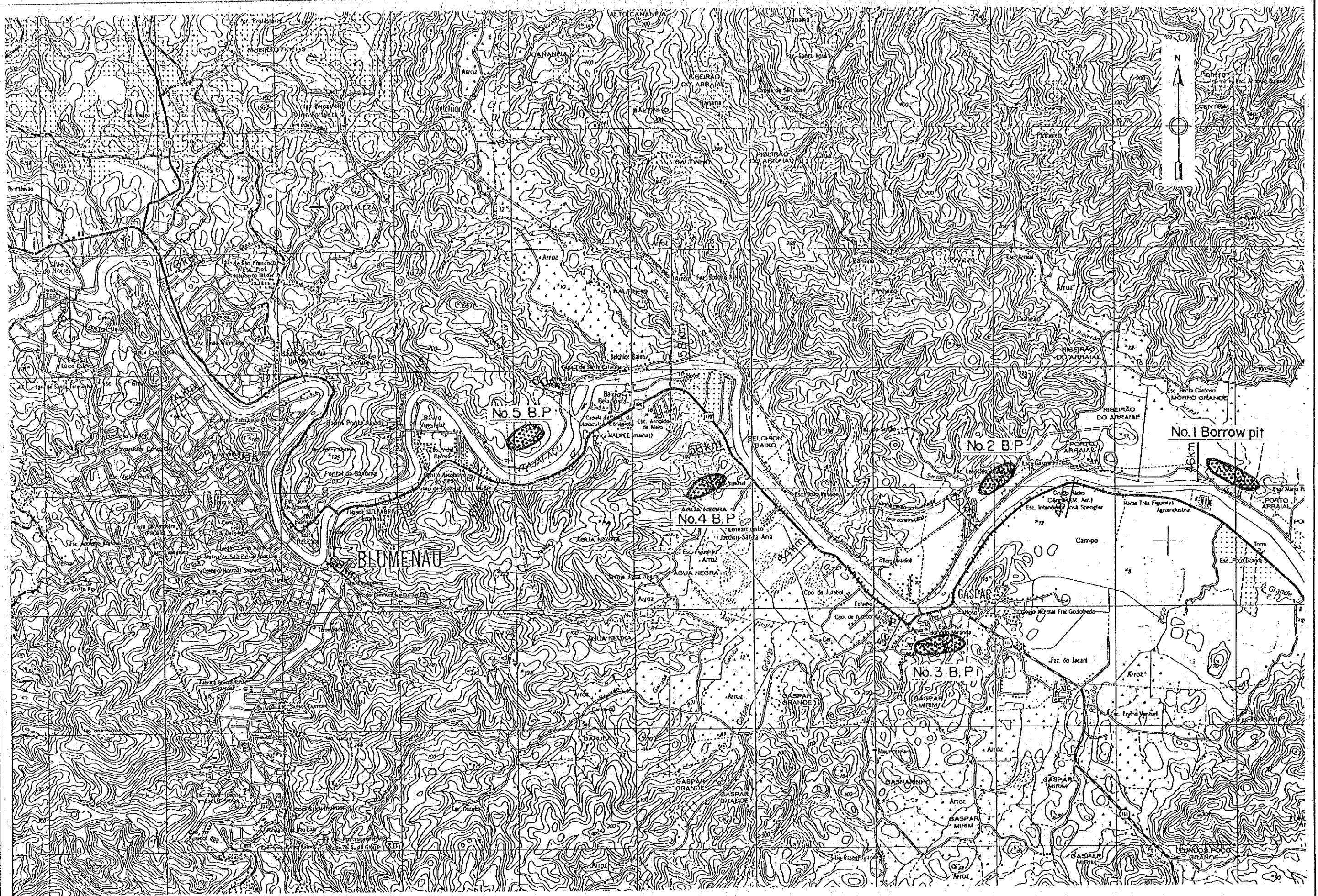
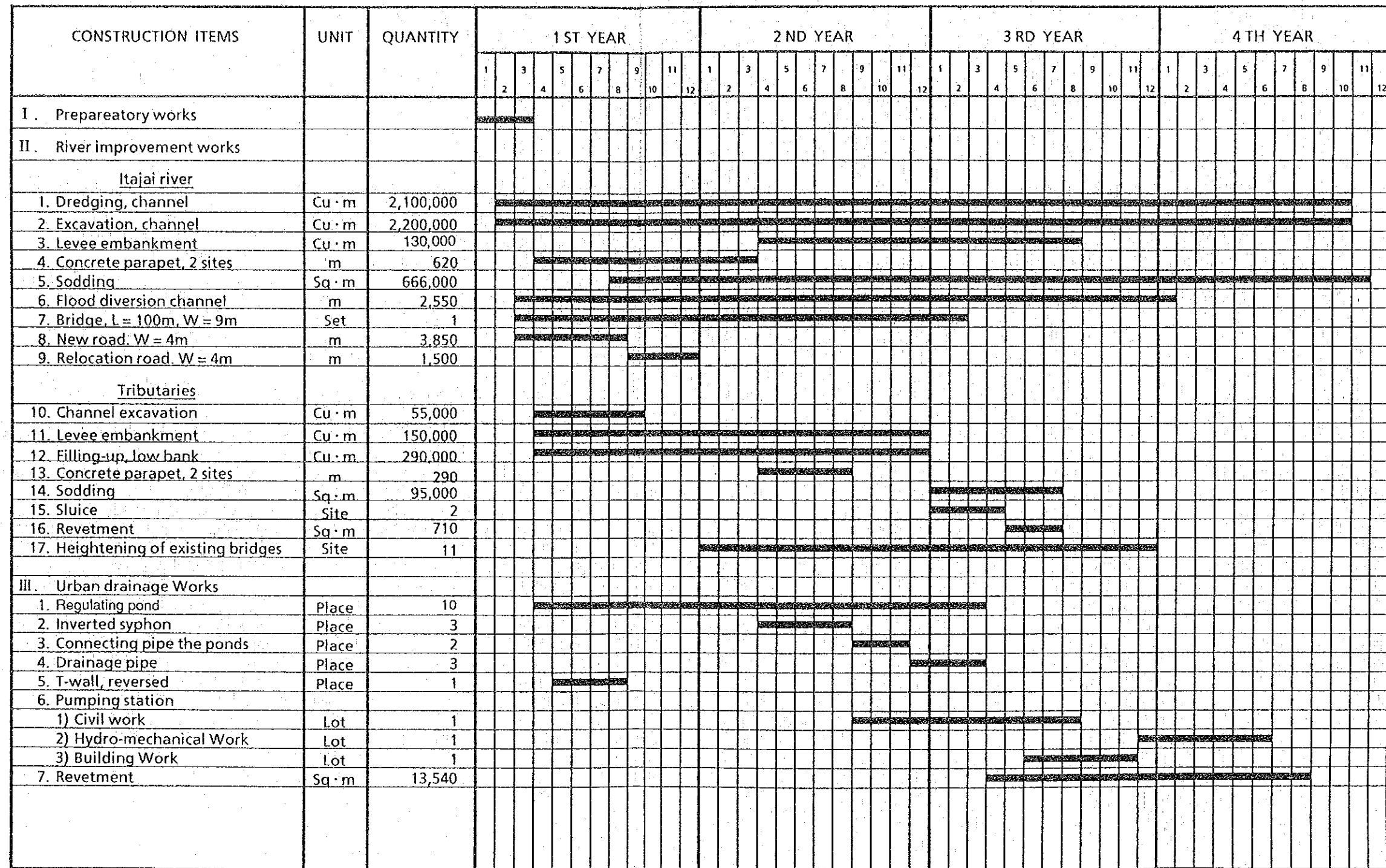


Fig.23 LOCATION MAP OF PROPOSED BORROW AREA

Fig.24 CONSTRUCTION TIME SCHEDULE









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