MINUTES OF MEETING

MUNICIPAL WATER SUPPLY PROJECT STUDY

Manila, December 8,1986

Toru Hayashi

Toru Hayashi
Study Team Leader
Japan International
Cooperation Agency

Porthos P. Alma Jose
Administrator
Local Water Utilities
Administration

MINUTES OF THE MEETING

A series of meeting between JICA survey team and LWUA personnel regarding the Draft Final Report on Municipal Water Supply Project were held during the period December 2 to December 8, 1986 to present the report on the study and confirm its contents.

From Chapter 2 to Chapter 5, i.e., General Background, Description of the Study Area, Existing Water Supply and Sanitation Conditions, and Population and Water Demand Projections, no problem was noted since the contents of these chapters have already been discussed and concurred by both parties at the time the Progress Report and Interim Report were submitted.

The major items to be revised/supplemented are as follows:

Technical Aspect

1. Alternative study of transmission/distribution pipeline system

   - Staged construction of pipeline:

     An economic evaluation of staging construction of transmission and distribution mains will be studied and presented in the report. Two phases of construction should at least be considered taking into consideration the following recommended construction Phases:

     Phase I - (1989-1995)
     Phase II - (1996-2010)

   - Alternative of pipeline routes: If there are available roads, 2 alternatives will be studied for major main routes. Others will be discussed and cancelled.

   - Economic cost comparison

     As per request of LWUA, economic evaluation will be made for the discount rate of 12 percent. The estimation using the rates of 10% and 15% will also be made for reference purpose.

2. Hydraulic calculation for the distribution network. The computation results of alternative and recommended distribution system will be incorporated in the Appendix.

3. Review and revise/supplement the alternative study, Chapter 7 with reference to the presentation.

4. Preparation of implementation schedule using bar-chart. Based on the implementation program shown in the Draft Final Report, bar-chart showing construction period by phase will be prepared for major facilities. That for Phase II is roughly prepared.

5. Preparation of a plan of water supply facilities showing the differences of construction phases. The scale of the plan may be approximately from 1/20,000 to 1/25,000.

6. Cost estimates

   Required cost for the services of leakage detection and for repair/replacement of existing pipes and accessories will be added under the following conditions:

   a) Old laterals: The subject length of the pipeline is 10-30% of the total length of existing laterals. Unit cost is that for new construction.

   b) Service Connections: Required cost is estimated based on the unit cost given below

      {₱850 (material) + labor cost} x No. of existing connections

   c) Cost for leak detection: ₱240/connect x No. of existing connections

7. Study of economical sizing of pump transmission mains.

<u>Financial Aspect</u>

1. Financial scheme should not include government grant since the policy of the LWUA changed two months ago. The soft loan may be utilized to supplement regular loan. LWUA can extend soft loans up to a maximum of 50% of the total project cost.

   A certain percent of Water District equity to the total construction cost may be considered depending on the ability-to-pay of the W.D.

2. Per latest policy Engineering cost is computed as a fixed percentage of estimated construction cost (ECC). ECC is equal to the summation of basic construction cost, physical contingencies and price contingencies. The percentages are:

   ECC $\leq$ ₱20M = Engineering cost is 13% of ECC
   ECC $>$ ₱20M = Engineering cost is 10% of ECC

   Construction supervision is 4% of ECC

3. Debt service table

   a) Standard procedure = Regular loan can finance disbursements for the first four (4) years and soft loan for the next 4 years. However, the combination of the two types may be adopted.

   b) Preparation of separate debt service tables for regular loan and for soft loan.

4. Preparation of a table for unescalated O & M costs

5. Equivalent volume of water sold

   - Water consumption for the first 10 cu.m will be calculated using the total number of domestic connections and 10 cu.m/connection

   - Range of water consumption maybe as follows:

     1) First 10 cu.m,
     2) 11-20
     3) 21-35
     4) over 35

   The present percentages for the ranges from 11 cu.m to over 35 cu.m will be used for the calculation of the total equivalent volume.

6. Financial Internal Rate of Return (FIRR) computation

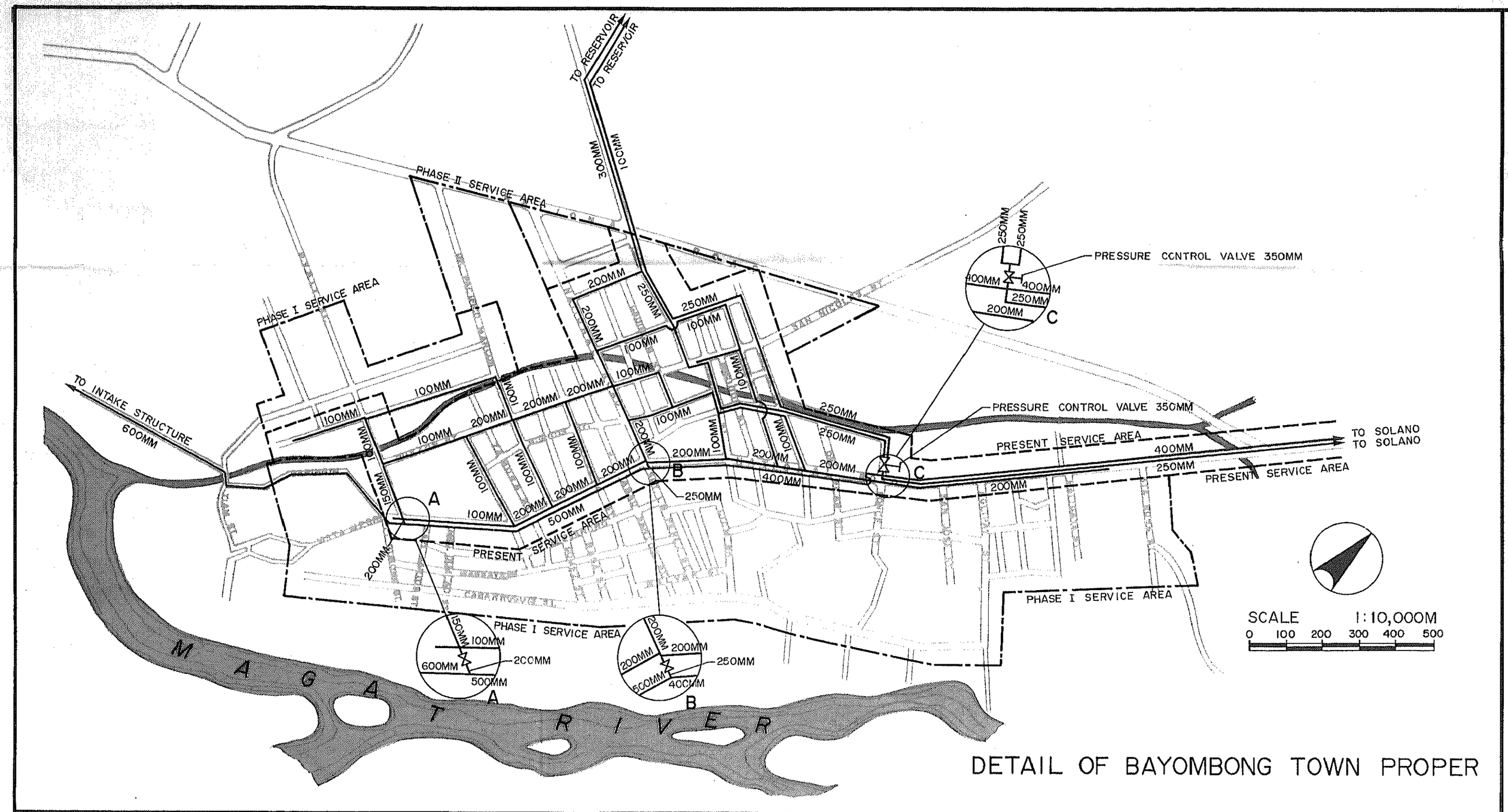
   In conformance with LWUA procedure FIRR will be computed based on the total investment not just the portion funded by WD equity to measure the efficiency of the project as a whole.

   The FIRR may at least be equal to the weighted average of the interest rates of the loans (regular and soft loans). The period for this analysis can be extended (20 to 40 years).

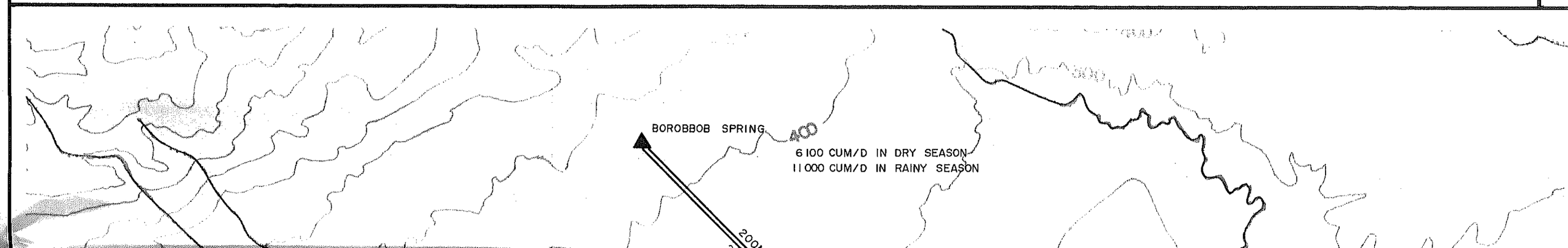
7. As per LWUA standards, fifteen (15%)percent inflation rate is used.

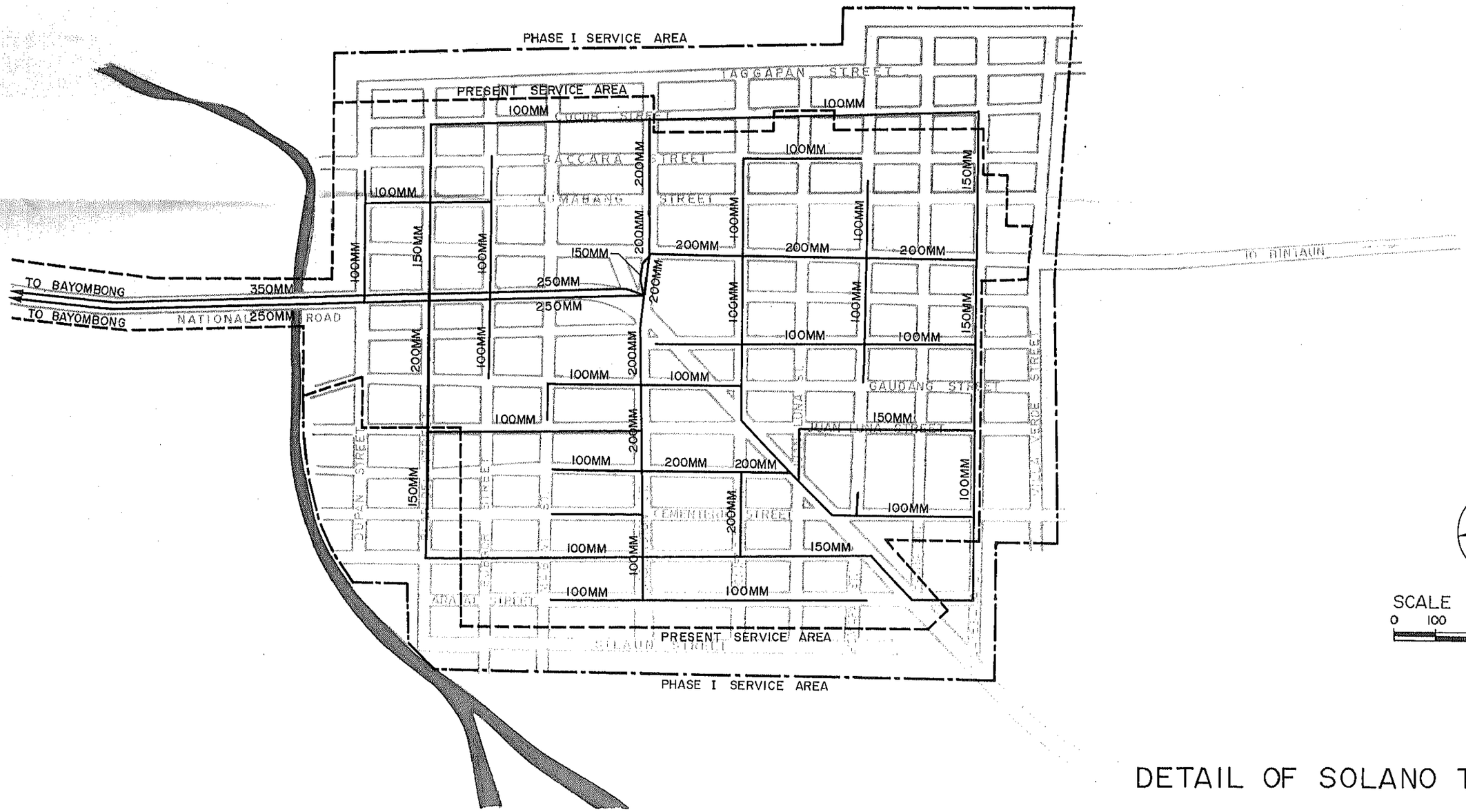
8. Economic Analysis

   In consideration of the characteristics of the project, IERR may be lower than the desired level.



DETAIL OF BAYOMBONG TOWN PROPER





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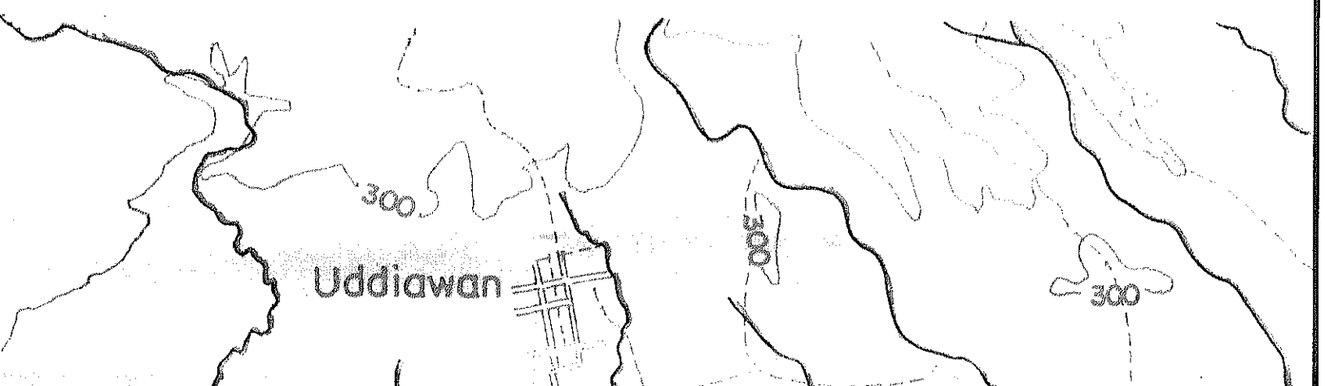
DETAIL OF SOLANO TOWN PROPER



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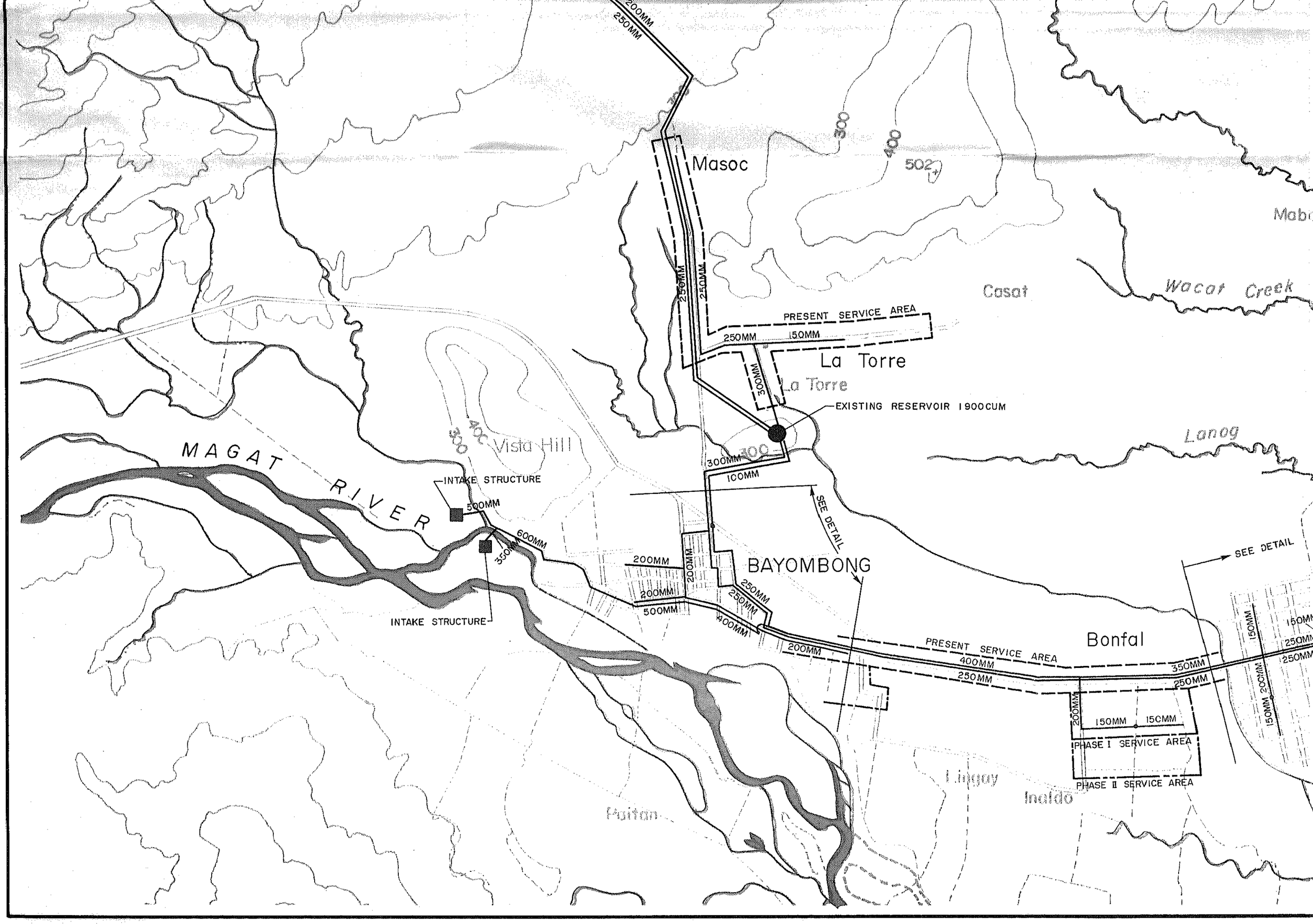
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250MM
Masoc
502
Casat
Wacat Creek
Mabo
250MM
250MM
PRESENT SERVICE AREA
250MM
150MM
La Torre
300MM
La Torre
EXISTING RESERVOIR 1900CUM
Lanog
MAGAT RIVER
Vista Hill
INTAKE STRUCTURE
500MM
600MM
350MM
INTAKE STRUCTURE
300MM
100MM
SEE DETAIL
200MM
200MM
200MM
500MM
BAYOMBONG
250MM
250MM
400MM
200MM
PRESENT SERVICE AREA
400MM
250MM
350MM
250MM
Bonfal
SEE DETAIL
150MM
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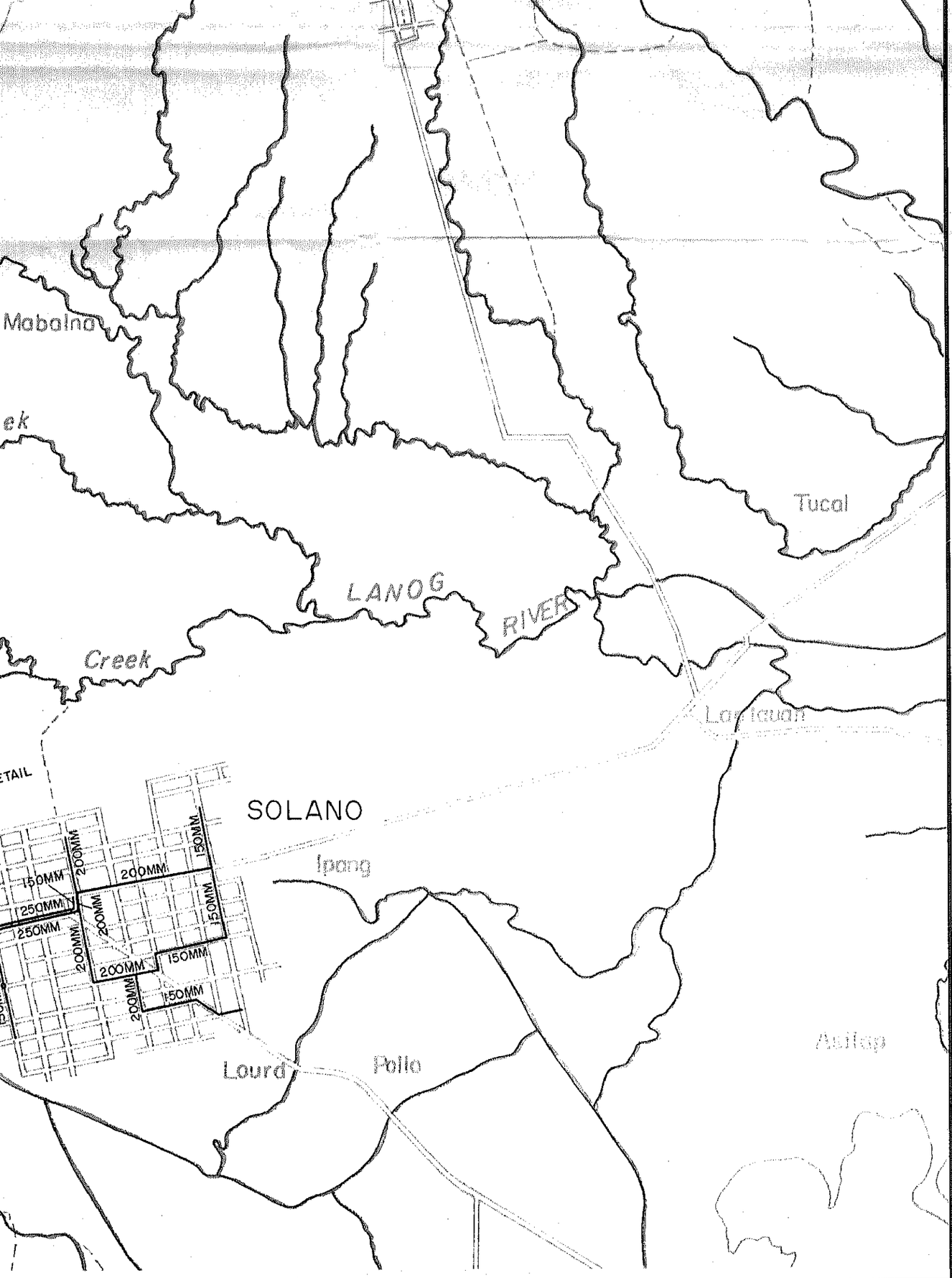
PHASE I SERVICE AREA
PHASE II SERVICE AREA
Lingay
Inaldo
Paitan



SCALE 1:25,000M

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LEGEND:

EXISING SYSTEM

- SPRING
- RESERVOIR
- PIPELINE

PHASE I PROJECT

- INTAKE STRUCTURE
- PIPELINE

PHASE II PROJECT

- INTAKE STRUCTURE
- PIPELINE

SERVICE AREA BOUNDARIES

- PRESENT SERVICE AREA
- PHASE I SERVICE AREA
- PHASE II SERVICE AREA

FIGURE 8.2.1
GENERAL LAYOUT OF THE RECOMMENDED WATER SUPPLY SYSTEM
BAYOMBONG – SOLANO, NUEVA VIZCAYA
MARCH 1987

JICA