

498-02690049a

JUL 25 1980

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR, BUREAU FOR ASIA

FROM: ASIA/PD, Dennis J. Brennan *DS*

SUBJECT: Congressional Notification: Asia Regional - Rural Water Supply and Sanitation (498-0269)

Problem: A CN is required to provide FY 80 funding for the subject project.

Discussion: This project was included in the 1981 Congressional Presentation. However, because the South Pacific Commission had additional engineering staff during 1980, the project proposal was completed earlier than projected. Because water and sanitation conditions on the islands of Tuvalu, Tokelau, Kiribati, Western Samoa and Tonga are poor, there is an immediate need to begin implementation of the project as soon as possible. The obligation for 1980 would be \$200,000, the same amount as planned for 1981 obligation; the completion date would be 1982, one year earlier than planned. The life-of-project funding remains at \$600,000, and all other parts of the project remain unchanged.

Recommendation: That you sign the attached CN.

Attachment:

Advice of Program Charge

PROGRAM: ASIA REGIONAL

ACTIVITY DATA SHEET

CP 80-05(10-78)

| | | | | | |
|---|--|---|---|--|-------------------------------------|
| TITLE Rural Water Supply and Sanitation | | FUNDS Health | PROPOSED OBLIGATION (In thousands of dollars) | | |
| NUMBER 498-0269 | | NEW <input checked="" type="checkbox"/> | FY 80 200 | LIFE OF PROJECT 600 | |
| GRANT <input checked="" type="checkbox"/> LOAN <input type="checkbox"/> | | CONTINUING <input type="checkbox"/> | PRIOR REFERENCE None | INITIAL OBLIGATION FY 80 | ESTIMATED FINAL OBLIGATION FY 82 |
| | | | | ESTIMATED COMPLETION DATE OF PROJECT FY 83 | |

Purpose: To provide potable drinking water and basic sanitation projects in rural villages of certain South Pacific nations.

Background and Progress to Date: The availability of clean supplies of water in rural villages throughout the South Pacific has become critical due to the deterioration of old systems and inadequate storage facilities for rain water. Since 1978 the South Pacific Commission (SPC) has been striving to respond to individual country requests by providing modest assistance to meet critical shortages and to alleviate health and sanitation problems arising from a lack of potable water. This activity will provide funds to the SPC for the continuation and expansion of rural water and basic sanitation projects, principally in Tuvalu, Tokelau, Kiribati, Western Samoa, Tonga and possibly additional island states. The SPC has identified an immediate need to implement a minimum of ten projects per year over the next three or four years. These projects include renovation of existing windmills and construction of new ones for pumping wellwater; construction and rehabilitation of rain water catchment basins; piping of water gravitationally from streams; extension of existing piped systems where sufficient water is available at the source; and the construction of simple sanitation facilities.

Host Country and Other Donors: The South Pacific Commission's primary role is advisory and consultative, with technical expertise available to implement this activity. The U.S. was the first country to respond to the SPC appeal for increasing outside support for this activity. Other donors such as Japan, Australia, and New Zealand may provide additional assistance as the project progresses.

Beneficiaries: The activity will benefit residents of 30 villages, each with an average population of 525 people. The projects are essentially self-help in nature and individual villages

will supply all unskilled labor, sites for storage tanks and gravel.

FY 80 Program: Construction of new water systems and sanitation facilities will be implemented in villages of five to eight island states. Villagers will receive instruction on repair and maintenance of water and sanitation systems. For this effort, an A.I.D. grant of Dols \$200,000 is requested.

| | | |
|---|----------------|------------|
| | (\$ thousands) | |
| Major Outputs (and A.I.D. Unit Cost): | All Years | |
| | Unit | Cost |
| Water supply systems constructed and/or rehabilitated, storage facilities in place, and sanitation facilities constructed | 30 | 20 |
| A.I.D.-Financed Inputs | <u>FY 80</u> | |
| Grant: | | |
| Technical Assistance | | 20 |
| Equipment and Materials | | 175 |
| Evaluation | | <u>5</u> |
| Total | | 200 |

| | U.S. FINANCING (In thousands of dollars) | | | PRINCIPAL CONTRACTORS OR AGENCIES |
|--------------------------------------|--|-------------------------|----------------------|-----------------------------------|
| | Obligations | Expenditures | Unliquidated | |
| Through September 30, 1979 | - | - | - | South Pacific Commission |
| Estimated Fiscal Year 1979 | - | - | - | |
| Estimated through September 30, 1979 | - | - | - | |
| | | Future Year Obligations | Estimated Total Cost | |
| Proposed Fiscal Year 1980 | 200 | 400 | 600 | |

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

September 24, 1980

ACTION MEMORANDUM FOR THE AA/ASIA

FROM : ASIA/PD, G. R. Van Raalte 

SUBJECT: Authorization of South Pacific Rural Water Project (498-0269)

Problem: Your authorization is required for the subject project.

Discussion: The South Pacific Commission (SPC) has requested AID financing for the expansion of its rural water assistance activities for countries in the South Pacific region. The South Pacific Regional Development Officer (SPRDO) and a Bureau Project Review Committee have recommended approval of this assistance. These reviews were in accordance with Bureau procedures for Regional projects of this magnitude. Life-of-project funding of \$600,000 over a three-year period from the Section 104(c) (health) account is proposed.

The project will enable the SPC to assist member countries by constructing or rehabilitating small water systems in rural areas. Small scale, simple water supply systems are being provided in remote areas which member countries are not able to serve due to their limited financial resources and administrative capabilities. With AID's contribution, two additional member countries can be assisted with two systems each per year.

Project reviews addressed the following issues:

1. Review of sub-project plans. The Project Review Committee recommended that sub-project plans be reviewed for engineering soundness before sub-projects are financed. The Project Authorization requires such review as a condition precedent to financing sub-projects. We have advised SPRDO that this review may be by a local firm approved by AID engineers or by USAID/Manila or AID/W engineers.

2. Sub-projects in other than independent countries. The Committee considered that the SPC might seek to extend its assistance to islands not now fully independent (e.g., the U.N. Trust Territory or French Polynesia). AID would not find it appropriate to finance sub-projects for such islands because in the former, the Department of the Interior currently uses appropriated funds for development activities and future U.S. assistance is the subject of political negotiation; in the latter, the French government considers many of the islands as an integral part of its government for which U.S. development assistance may not be appropriate. None of the islands presently considered for sub-projects falls into this category. However, the project authorization preserves a right to review any sub-projects which do fall into this area by requiring AID approval of any sub-project for other than an independent country as a condition precedent to financing such sub-projects. We have advised SPRDO that approval rights in this area are reserved to AID/W.

3. Maintenance of systems. The SPC proposal implicitly recognizes that many water systems become partly or totally useless due to inadequate maintenance; it provides for rehabilitation of some systems that have become inoperable, and it provides for training of government and community personnel in better maintenance. While these provisions may not be sufficient fully to meet all the maintenance requirements, the Committee considers SPC's provisions as good as can be implemented in view of limitations on AID and SPC staff and other resources. The Committee did provide in instructions to the field that any funding in excess of direct sub-project construction costs be available to fund additional assistance to governments to improve maintenance capabilities.

4. Source/Origin: The SPC proposes to continue utilizing commodities and services available in the independent island countries; these commodities and services are principally of New Zealand and Australian source and origin. One U.S. motor vehicle is proposed in the project, but all other materiel (including one motorcycle) and most services proposed would be from New Zealand/Australia. The project authorization permits procurement from AID Geographic Code 935 source origin.

Waivers: If you authorize this project, you will be approving waivers of project procurement from the United States to Geographic Code 935 as follows:

1. Commodity procurement. Except for one U.S.-source pick-up truck, virtually all of the estimated up to \$480,000 of commodity procurements for this project will be purchased locally and/or from Australia and New Zealand. The proposed project authorization permits procurement from AID Geographic Code 935 (Free World) to facilitate this planned procurement. This blanket waiver from Code 000 is authorized by HB 1, Sup. B 5B4d.(1)(a) for a cumulative value of \$500,000 or less by the Assistant Administrator having program responsibility.

2. Project services and other costs. It is estimated that \$100,000 of project finance will provide costs of services (training, engineering, and construction) other than ocean transportation services and other costs (travel and per diem) of SPC personnel, contractors and volunteers of other than U.S. and cooperating country nationality. Waiver of Code 000 and cooperating country eligibility of services is authorized by HB1, Sup. B 5C4a(2)(e) when procurement of locally available services would best promote the objectives of the foreign assistance program and by HB1, Sup. B 5C4a(2)(f) when other circumstances are determined to be critical to the success of project objectives. As most of the services available in the islands to be benefited are of Australian and New Zealand nationality and their continued use under the SPC program is critical to the success of the project, waiver from Code 000 to Code 935 for project services is proposed. This is reflected in the proposed project authorization.

The existing SPC program is designed and engineered around water supply and sanitation materials which have their source/origin in Australia and New Zealand. In order to rationalize project activities of the SPC under AID financing with those already underway, continued standardization of materials is desirable. This will assure interchangeability of spare parts and ease of installation and maintenance.

By approving the above waivers for commodities and services, you will be certifying that "exclusion of procurement from Free World countries other than the cooperating country and countries included in Code 941 would seriously impede attainment of U.S. foreign policy objectives and objectives of the foreign assistance program."*

3. Motor vehicle. One motorcycle of 150cc or smaller power is proposed to serve project monitors in remote areas. At present no motorcycles under 1100cc are manufactured in the U.S. Motorcycles of Japanese origin predominate in the project area and are therefore easiest to maintain. The project authorization will permit procurement of commodities from Code 935 source and origin. It is expected that one motorcycle worth \$3,000 will be procured. By approving the project authorization you will be waiving the provisions of FAA Sections 604 and 636(i) to permit this procurement.

4. Ocean transportation. Section 7B of Supplement B to Handbook 1 provides that, under circumstances where no Code 000 or 941 or home flag vessels are available, the limitation as to eligibility of transportation costs can be waived and payment of transportation costs on Code 935 flag vessels is approved. The project authorization permits financing ocean

*By authorizing this project you will be permitting up to \$500,000 of Code 935 procurement of goods and services which is your present limit on such waivers. At this point we do not expect such procurement to exceed \$500,000. If it appears that this limit will be exceeded, we will come back for further waiver actions.

transportation on Code 899 flag vessels. By approving a waiver of ocean shipping, you will be certifying that: "The interests of the U.S. are best served by permitting financing of transportation services on an ocean vessel under flag registry of a Free World country other than the cooperating country and countries in Code 941."

A Negative Determination for the IEE on this project has been approved and a Statutory Checklist has been prepared. This project was justified to the Congress by an Advice of Program Change which expired August 12.

Recommendations: That you approve the above waivers for procurement of commodities and services from Geographic Code 935 and authorize the project by signing the attached project authorization (TAB A).

Attachments:

- TAB A: Authorization
- TAB B: Project Proposal
- TAB C: Statutory Checklist
- TAB D: IEE

United States International Development Cooperation Agency

~~DEPARTMENT OF STATE~~

AGENCY FOR INTERNATIONAL DEVELOPMENT

WASHINGTON, D.C. 20523

PROJECT AUTHORIZATION

ASIA REGIONAL

South Pacific Commission
Rural Water Supply Project
Project No. 498-0269

1. Pursuant to Section 104(c) of the Foreign Assistance Act of 1961, as amended, I hereby authorize the South Pacific Commission Rural Water Supply Project (the "Project") undertaken by the South Pacific Commission (the "Grantee") on behalf of member countries involving planned obligations of an amount not to exceed Six Hundred Thousand United States Dollars (\$600,000) in grant funds over a three year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the Project.

2. The Project is designed to increase water supplies in the rural areas of countries in the South Pacific. The Grantee will utilize the grant funds for supplies and equipment and other costs necessary to construct water systems in collaboration with national governments in the region.

3. The Project Agreement which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

4. Source and Origin

Except for ocean shipping and as A.I.D. may otherwise agree in writing, goods and services financed under the Project shall have their source and origin in countries included in A.I.D. Geographic Code 935. Ocean shipping financed under the Project shall be on vessels under flag registry of the United States or cooperating country, except as A.I.D. may otherwise agree in writing. Training financed under the Project will be

provided in accordance with the provisions of A.I.D. Handbook 10. Air transportation and motor vehicles financed under the Project shall have their source and origin in the United States, except as A.I.D. may otherwise agree in writing.

5. Terms and Conditions

a. The Project Agreement will contain a provision requiring the Grantee to obtain the permission of A.I.D. for the use of Project funds for activities benefitting any South Pacific country which is under the administration of another government or which is not fully independent.

b. Prior to any disbursement or to the issuance of any documentation pursuant to which disbursement will be made under the Project Agreement for construction, the Grantee will furnish final construction plans approved by A.I.D.

6. Waivers

The following waivers are hereby authorized:

a. A waiver of the provisions of Section 636(1) of the Act to permit the procurement of a motor-cycle of less than 150 cc from a country in A.I.D. Geographic Code 935 (Japan).

b. A waiver of the ocean shipping requirements to permit the financing of shipping from countries included in A.I.D. Geographic Code 899.

| Clearances: | Date | Initial |
|---------------------|---------|---------|
| GC/Asia:HEMorris | 9/24 | HEM |
| Asia/PD:DBrennan | 9/23 | |
| Asia/DP:RHalligan | 9/24/80 | |
| Asia/ISPA:DRybak | 9/24/80 | |
| DAA/Asia:FWSchieck | 9/24/80 | |
| SER/COM:WSchmeisser | 9/24 | |

Signature

Assistant Administrator
Bureau for Asia

9/25/80

Date

GC/Asia:AdeGraffenried:hp:9/22/80

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AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

September 24, 1980

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~~DEPARTMENT OF STATE~~

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Project No. 498-0269

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Clearances:

| | Date | Initial |
|---------------------|-------------|---------|
| GC/Asia:HEMorris | 9/24 | HEM |
| Asia/PD:DBrennan | [Signature] | 9/23 |
| Asia/DP:RHalligan | [Signature] | 9/24/80 |
| Asia/ISPA:DRybak | [Signature] | 9/24/80 |
| DAA/Asia:FWSchieck | [Signature] | 9/24/80 |
| SER/COM:WSchmeisser | [Signature] | 9/24 |

Signature

[Handwritten Signature]
Assistant Administrator
Bureau for Asia

9/25/80

Date

GC/Asia:AdeGraffenried:hp:9/22/80

UNITED STATES GOVERNMENT

Memorandum

TO : Distribution

DATE: July 30, 1980

FROM : ASIA/PD/EA, Laura Clyburn *lc*

SUBJECT: Project Committee Meeting: South Pacific - Rural Water Supply and Sanitation (498-0269)

The Project Committee will meet on Friday, August 1, 1980 to review the attached cable response in Room 3208 NS at 9:00 a.m.

Attachment:
Cable Suva

Distribution:

ASIA/PD:DJBrennan, GRVanRaalte, JRNussbaum, WHodgin, LClyburn,
SSchwartz, JPinney

ASIA/TR:HRice, TARndt, JStanley

ASIA/DP:RHalligan

ASIA/ISPA:RDakan, DRybak, RKahn

GC/ASIA:AdeGraffenried, CStephenson

SFR/COM/ASIA:BViragh

PPC/PDPR/PDI:LHamilton (2)

PPC/PDPR/HR:ABloom

DS/ENGR:~~FWMontanari~~

DS/H:VWehman

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ACTION COPY

Department of State

INCOMING TELEGRAM

PAGE 01 SUVA 02021 01 OF 02 290714Z 032837 AID2423
ACTION AID-35

SUVA 02021 01 OF 02 290714Z 032837 AID2423

ACTION OFFICE ASPD-01
INFO AA45-01 ASEM-01 ASDP-02 CHC-01 PPCE-01 PDRP-01 PPIB-02
GC-01 PPEA-01 GCAS-01 GCFL-01 FM-02 ASTR-01 ENGR-02
CHG-01 ATPC-04 RELO-01 MAST-01 ASSP-02 /030 A3 2

INFO OCT-01 /036 W -----112833 290714Z /34

P 222136Z JUL 80
FM AMEMBASSY SUVA
TO SECSTATE WASHDC PRIORITY 1973

UNCLAS SECTION 01 OF 02 SUVA 2621

AIDAC

EO 12065: N/A
SUBJ: PROPOSAL, SOUTH PACIFIC COMMISSION (SPC) RURAL
WATER SUPPLY (498-0259)

REF: (A) STATE 177354 (B) STATE 162043

1. IN RESPONSE REF A, SPRDO OFFERS FOLLOWING COMMENTS.

2. PARA 2 REF A: AUTHORITIES ASCRIBED TO SOUTH PACIFIC COMMISSION ARE BASICALLY AS STATED THIS PARA. IN ACTUAL PRACTICE THE SPC GOES MUCH FARTHER. AS THE PROCESS PERTAINS TO THIS PARTICULAR PROJECT SPC DOES NOT ENTERTAIN PROPOSALS FOR SMALL WATER SYSTEMS UNLESS REQUESTED BY HOST COUNTRY. UNDER THIS PROCESS THE AUTHORIZATION TO UNDERTAKE THE PROPOSAL AND COMMIT MEMBER COUNTRIES ONE BY ONE TO THE OBLIGATIONS LAID OUT IN THE PROPOSALS IS AUTOMATICALLY PROVIDED IN THE REQUEST FROM THE HOST COUNTRY TO WHICH THE RESPONSE IS A REQUEST FROM SPC TO SIGN AN AGREEMENT TO THAT EFFECT.

3. PLEASE BEAR IN MIND THAT THIS IS NOT A SINGLE WATER PROJECT BUT A SERIES OF SMALL WATER PROJECTS WHICH ARE BEING REQUESTED AND ACCEPTED OR REJECTED ONE BY ONE. MEMBER COUNTRIES ARE AWARE THAT THIS PROGRAM IS OPERATIVE EVEN THOUGH ON A SMALL SCALE AT PRESENT. THERE ARE PRESENTLY PENDING BEFORE SPC 11 REQUESTS FROM 7 MEMBER COUNTRIES FOR RURAL WATER PROGRAMS WHICH SPC IS NOT ABLE TO CONSIDER FOR LACK OF FUNDING.

4. THE SPC ACCEPTED THE US PROPOSAL TO PROVIDE UP TO DOL 200,000 ANNUALLY FOR THE RURAL WATER PROGRAM BOTH IN SPC'S PLANNING AND EVALUATION CONFERENCE HELD IN MAY 1979 AND DURING 19TH CONFERENCE HELD IN PAPEETE IN OCTOBER 1979. THE PROPOSAL ITSELF IS SUBMITTED BY THE SPC TO THE SOUTH PACIFIC REGIONAL DEVELOPMENT OFFICE. AS TO FORMAL ACCEPTANCE OF INDIVIDUAL PROJECTS, THIS WILL BE DONE ON A COUNTRY BY COUNTRY BASIS AS THE PROJECT PROCEEDS.

5. THE SPC SECRETARIAT HAS BEEN AUTHORIZED BY THE CONFERENCE TO SEEK EXTERIOR FUNDING FOR THIS AND OTHER PROJECTS AND HAS THE AUTHORITY TO NEGOTIATE AND SIGN PROJECT AGREEMENT. REGARDING PARA 4 REFTEL A, ONCE A HOST COUNTRY HAS REQUESTED A SMALL WATER SYSTEM, THE HOST GOVERNMENT IS INVOLVED IN PROJECT FROM THE DESIGN OF THE WATER SYSTEM THRU FINAL COMPLETION AND ACCEPTANCE OF WATER SYSTEM. VILLAGERS BENEFITING FROM SYSTEM ARE ALSO INVOLVED. SPC EXECUTES AN AGREEMENT ON EACH SMALL PROJECT WHICH IS SIGNED BY (1) AN OFFICIAL OF THE LOCAL COMMUNITY, (2) AN OFFICIAL OF THE HOST GOVERNMENT AND (3) SPC.

6. PARA 5 REF A DEALS WITH MAINTENANCE AND REPAIR. THE MEMORANDUM OF UNDERSTANDING SIGNED BY SPC, HOST GOVERNMENT AND COMMUNITY INCLUDES FOLLOWING REQUIREMENT QTE ON COM-

PLETION OF INSTALLATION IT WILL BE HANDLED OVER TO THE GOVERNMENT OF PLANK OR SUCH LOCAL AUTHORITY AS THE GOVERNMENT MAY DIRECT WHICH WILL THEN ASSUME RESPONSIBILITY FOR ITS SUBSEQUENT MAINTENANCE. MAINTENANCE OF WATER SYSTEMS THROUGHOUT SOUTH PACIFIC VARIES FROM COUNTRY TO COUNTRY AND SEEMS NO BETTER NOR NO WORSE THAN THE RECORD OF ANY OTHER DEVELOPING COUNTRY OF OUR KNOWLEDGE. THERE IS NO USAID COMMITMENT TO MAINTAIN THE SYSTEMS.

7. REGARDING PARA 6 REF A, EACH WATER SYSTEM BUILT UNDER THIS PROJECT WILL BE CHECKED BOTH BY SPC TECHNICIAN AND HOST GOVERNMENT OFFICIALS AT COMPLETION AND PRIOR TO HOST GOVERNMENT ACCEPTANCE OF WATER SYSTEM. COMPLETION OF EACH INSPECTION WILL REPRESENT SIGNIFICANT PART OF EVALUATION. SPRDO PLANS TO VISIT AS MANY PROJECTS AS POSSIBLE AFTER COMPLETION FOR POST PROJECT EVALUATION. BUDGET EXPENSES FOR TECHNICIAN ARE COVERED IN PROJECT, SPRDO TRAVEL WILL BE PERFORMED IN CONJUNCTION WITH OTHER INTERNATIONAL TRAVEL IN SOUTH PACIFIC.

8. IT IS NOT POSSIBLE TO PROVIDE INITIAL ENVIRONMENTAL EVALUATION IMMEDIATELY. BOTH PROJECT MANAGER, ERIC DUNN, A HEALTH ENVIRONMENTALIST AND ARTHUR DAHL, AMERICAN ENVIRONMENTALIST EMPLOYED BY SPC, ARE ON FIELD TRIPS WITH DUNN RETURNING TO MOUHEA O/A 25 JULY AND DAHL RETURNING O/A 29 JULY. SPC PROGRAM DIRECTOR WILLIAM BROWN POINTS OUT THAT SPC IS ITSELF A DEVELOPMENTAL ORGANIZATION CHARGED WITH EXECUTION OF UNEP FUNDED SOUTH PACIFIC WIDE REGIONAL ENVIRONMENTAL PROJECT. SPRDO WILL ASK DUNN AND DR DAHL TO ADDRESS ENVIRONMENTAL EVALUATION AS SOON AS THEY RETURN TO MOUHEA. THE PURPOSE OF CARRYING THIS PROJECT AS BOTH RURAL WATER AND SANITATION IS PARTLY FOR THE PURPOSE OF DEALING WITH AVOIDING ENVIRONMENTAL PROBLEMS IN INSTALLATION OF WATER SYSTEMS. FOR EXAMPLE IN WESTERN SOUTH PACIFIC PARTICULARLY IT IS IMPORTANT WHEN NOT GREAT BREEDING GROUND FOR MALARIAL MOSQUITOES.

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9. STATUTORY CHECKLIST. WE ARE ATTEMPTING TO COMPLETE THIS LIST. MAY HAVE TO ASK FOR OUTSIDE LEGAL ASSISTANCE. WILL ADVISE.

10. REGARDING PARA 7 REFTEL A, ERIC DUHH, HEALTH ENVIRONMENTALIST WILL PROVIDE OVERALL SUPERVISORY NEEDS FOR PROJECTS. DUHH IS AN EXPERIENCED ENVIRONMENTAL HEALTH OFFICER WITH 32 YEARS EXPERIENCE INCLUDING 11 YEARS IN SOLOMON ISLANDS AND 8 YEARS WITH SPC. HE DEALS WITH A RANGE OF ENVIRONMENTAL HEALTH PROGRAMS INCLUDING POTABLE WATER AND SANITATION SYSTEMS. OTHER SUPERVISORY INPUTS WILL BE MADE BY HOST COUNTRIES WHERE AVAILABLE INCLUDING SOME PEACE CORPS VOLUNTEERS IN CERTAIN AREAS, FOR EXAMPLE, KIRIBATI.

11. IN ADDITION, PROJECT CONTAINS SPACE FOR ONE ON-THE-JOB SUPERVISOR WHO WOULD SPEND MUCH IF NOT MOST OF HIS TIME IN FIELD ON PROJECT SITES. WE ARE IN CORRESPONDENCE WITH US PEACE CORPS AND SPC ON THE POSSIBILITY OF AN SPC REQUEST TO THE US PEACE CORPS FOR AN EXPERIENCED VOLUNTEER TO DEVOTE FULL TIME TO THIS PROJECT. NO COMMITMENTS HAVE BEEN MADE BY ANY PARTIES AT THIS POINT. SPC IS ALSO EXPLORING VOLUNTEER ASSISTANCE FROM AUSTRALIA AND OTHER COUNTRIES.

12. PARA 8 REF A ADDRESSES BUDGET. IT SHOULD BE BORNE IN MIND THAT SPC HAS NOT DESIGNED SPECIFIC PROJECTS AT THIS POINT TO ACCOMMODATE LIFE OF PROJECT. IT HAS INSTEAD OFFERED IN PROPOSAL ILLUSTRATIVE PLANS AND BUDGETS. EACH SMALL PROJECT WILL BE DESIGNED AND COSTED INDIVIDUALLY. SPC HAS IN FACT BEEN OPERATING THE RURAL WATER PROJECT FOR SEVERAL YEARS BUT ON MUCH SMALLER SCALE INSUFFICIENT TO PROVIDE ANY SIGNIFICANT INPUT INTO RURAL WATER PROBLEMS OF SOUTH PACIFIC. CURRENT YEAR PROGRAM IS FUNDED AT APPROXIMATELY US DOL 13,000. PROJECT MANAGER DUHH IS NOW IN TUVALU COMPLETING RURAL PROJECT UNDER THIS PROGRAM. SPC IN EFFECT IS CONTINUING ON A LARGER SCALE WHAT IT ALREADY HAS EXPERIENCE IN OVER A PERIOD OF TIME.

13. PARA 9 REF A POSES QUESTION ABOUT VOLUNTEER SUPERVISOR. THIS POSITION IS TOUCHED ON IN PARA 11 ABOVE BUT REFERS TO A VOLUNTEER SIMILAR TO US PEACE CORPS BUT POSSIBLY SOME OTHER COUNTRY, I.E., NEW ZEALAND. THE LINE ITEM OF US DOL 15,000 COVERS TRAVEL AND SUBSISTENCE OF VOLUNTEER. ASSUMING SUCCESS IN UTILIZING VOLUNTEER THIS WILL LOWER SUPERVISORY COSTS. IF SUITABLE VOLUNTEER IS NOT AVAILABLE SALARY COSTS FOR THIS LIKE ITEM WILL INCREASE.

14. WE ARE SOMEWHAT DISTURBED BY THE FULL BLOWN TREATMENT WHICH THIS PROPOSAL IS UNDERGOING AND WOULD LIKE TO POINT OUT THAT THE PROJECT UNDER CONSIDERATION, IN ITS ENTIRETY, IS SMALLER THAN MOST OPERATIONAL PROGRAM GRANTS AND SMALLER THAN THE ACCELERATED IMPACT PROGRAM TO DATE. THE RURAL WATER PROJECT, LIKE THE ACCELERATED IMPACT PROGRAM PROJECT, ADDRESSES A NUMBER OF SMALL ACTIVITIES WIDELY SCATTERED

THROUGHOUT THE PACIFIC. THEREFORE, SUCH REQUIREMENTS AS A STATUTORY CHECKLIST SEEM TO US SOMEWHAT EXCESSIVE IN THAT WE DO NOT ATTEMPT SUCH CHECKLIST ON OPERATIONAL PROGRAM GRANTS NOR TO OUR KNOWLEDGE HAS ONE EVER BEEN DONE ON THE ACCELERATED IMPACT PROGRAM. WE HOPE SOME CONSIDERATION WILL BE GIVEN TO THIS POINT OF VIEW.
15. BASED ON QUESTIONS RAISED IN REF A THERE DOES NOT SEEM TO BE A FULL UNDERSTANDING BY THE COMMITTEE ON THE DEGREE OF EXPERTISE POSSESSED BY THE SOUTH PACIFIC COMMISSION. SPC IS A HIGHLY RESPECTED ORGANIZATION DEALING WITH RURAL DEVELOPMENT IN THE SOUTH PACIFIC ON A REGIONAL BASIS. SINCE ITS FOUNDING IN 1947 IT HAS HAD MANY YEARS EXPERIENCE IN THE CREATION AND IMPLEMENTATION OF RURAL DEVELOPMENT PROJECTS IN ALL MEMBER COUNTRIES. THE ADVICE OF ITS TECHNICIANS AND THE IMPLEMENTATION OF ITS PROJECTS IS EAGERLY SOUGHT AFTER BY MEMBER COUNTRIES.

16. AS TO REF B, UNDERSTAND THE RATIONALE FOR NOT EXTENDING THE PROGRAM INTO US TRUST TERRITORIES AND ARE ADDRESSING POSSIBLE FUNDING THROUGH OTHER CHANNELS FOR THESE PROJECTS. AS TO COUNTRIES IN THE SOUTH PACIFIC, WE DO NOT DEEM IT WISE TO LIMIT THE SPC AS SUGGESTED IN REF B. THE VERY NATURE OF THE ORGANIZATION IS TO PROVIDE ITS FACILITIES TO ALL MEMBERS AND STRICTURES, OTHER THAN THOSE REGARDING US TRUST TERRITORIES, COULD CREATE SEVERE POLITICAL PROBLEMS IN PREVENTING EQUAL ACCESS TO PROGRAMS OFFERED BY SPC. STILLMAN

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 AID/ASIA/PD: JRNUSSEBAUM (DRAFT)
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TAGS:

SUBJECT: RURAL WATER SUPPLY AND SANITATION

REF: STATE 177354

1. AID/W SUGGESTS POSSIBLE SUB-PROJECT SITES BE LIMITED TO FOLLOWING COUNTRIES AND OTHERS THAT AID MIGHT AGREE TO IN WRITING AT LATER DATE: KIRIBATI, TUVALU, TOKELAU ISLANDS, WESTERN SAMOA, NIUE, AND FIJI. PROJECTS FOR COOK ISLANDS, TONGA, NEW HEBRIDES, AND SOLOMON ISLANDS WILL BE CONSIDERED AFTER SPECIFIC PROPOSALS ARE RECEIVED FROM SPC FOR SAME.

2. IT INAPPROPRIATE TO CONSIDER U. S. TRUST TERRITORY FOR INCLUSION IN PROPOSED PROGRAM AT THIS TIME. CHRISTOPHER

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STATE 177354

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AID/GC/ASIA:GRAFFENRIED (DRAFT)
AID/ASIA/PD:WHODGIN (DRAFT)
AID/ASIA/TR:JSTANLEY (DRAFT)
AID/DS/ENGR:FMONTANARI (DRAFT)
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E.O. 12065: 1/A

TAGS:

SUBJECT: PROPOSAL, SOUTH PACIFIC COMMISSION (SPC)
RURAL WATER SUPPLY (498-0269)

REF: (A) SUVA 02137 (B) MANILA 12165

1. PROJECT COMMITTEE (PC), JUNE 25, REVIEWED DRAFT PROPOSAL FOR SPC RURAL WATER SUPPLY. THE PROJECT WILL BE PROCESSED ACCORDING TO ASIA BUREAU'S RECENTLY CLARIFIED PROCEDURES FOR REGIONAL PROJECTS AFTER ADDITIONAL INFORMATION RECEIVED. FOLLOWING ARE QUESTIONS PC RAISED; PARA 6 LISTS CERTAIN ADDITIONAL DOCUMENTATION NEEDED.

2. SPC AUTHORITIES. AID/W AND STATE/L REVIEW OF SPC ORGANIZATIONAL DOCUMENTS INDICATES THAT SPC IS NOT REPEAT NOT AUTHORIZED TO UNDERTAKE RECIPROCAL OBLIGATIONS OR A COMMITMENT ON BEHALF OF MEMBER COUNTRIES WITHOUT SPECIFIC AUTHORIZATION BY SUCH COUNTRIES. SPC, UNDER THOSE DOCUMENTS AVAILABLE IN AID/W AND STATE, IS AUTHORIZED ONLY TO RECOMMEND REPEAT RECOMMEND, ECONOMIC DEVELOPMENT PROPOSALS TO ITS MEMBER COUNTRIES. CONSEQUENTLY, THOSE MEMBER COUNTRIES WHICH ARE TO RECEIVE BENEFITS UNDER THE SUBJECT PROPOSAL SHOULD SPECIFICALLY AUTHORIZE SPC, IN WRITING, TO:

- 1) UNDERTAKE PROPOSAL WITH AID, AND
- 2) COMMIT MEMBER COUNTRIES TO THOSE OBLIGATIONS SUCH AS NOT IMPOSING CUSTOMS DUTIES, GRANTING AUDIT RIGHTS TO AID, IMPOSING OBLIGATION FOR REIMBURSEMENT FOR OR RETURN OF GOODS NOT USED FOR PROJECT, ETC., WHICH ARE PART OF AID'S PROJECT AGREEMENT. FOR PURPOSES OF REVIEWING AND APPROVING THIS PROPOSAL, AID/W NEEDS TO KNOW THAT DRAFT PROPOSAL HAS BEEN: (1) FORMALLY ACCEPTED BY SPC. SUCH ACCEPTANCE MUST BE IN WRITING

TO AID REQUESTING AID FUNDING FOR SUBJECT PROPOSAL, INDICATING SPECIFIC MEMBER COUNTRY SUPPORT; (2) FORMALLY ACCEPTED BY MEMBER COUNTRIES WHICH WILL RECEIVE THE BENEFITS OF THE PROPOSAL. SUCH ACCEPTANCE MUST BE IN WRITING TO SPC SPECIFYING THAT ABOVE PROVISIONS ARE UNDERSTOOD AND AGREED UPON, AND AUTHORIZING SPC TO NEGOTIATE AND SIGN PROJECT AGREEMENT.

3. SEPTEL WILL ADDRESS WHERE SUB-PROJECTS MIGHT BE LOCATED. *State 182043*

4. RELATIONSHIP BETWEEN SPC AND HOST COUNTRIES IN DESIGN STAGE. TO WHAT EXTENT HAVE HOST COUNTRIES BEEN INVOLVED IN PROJECT FORMULATION? IF NO SUCH INVOLVEMENT, DOES SPC PLAN TO INVOLVE THEM ONLY AT THE IMPLEMENTATION STAGE? CONCERN RAISED NOT ONLY BECAUSE LOCAL PARTICIPATION IS ESSENTIAL (AS PROPOSAL STATES) BUT ALSO BECAUSE PROPOSAL COMMITS LOCAL INPUTS (VOLUNTARY LABOR, MATERIALS, LAND) AS HOST COUNTRY CONTRIBUTIONS WITHOUT EXPRESS STATEMENT THAT THE NATIONAL GOVERNMENTS HAVE YET APPROVED IN THESE CONTRIBUTIONS. IF HOST COUNTRIES HAVE NOT YET CONCURRED, PLEASE EXPLAIN HOW INPUTS WOULD BE SOLICITED AND, ON THE PRACTICAL SIDE, HOW SPC PLANS TO INVOLVE LOCAL VILLAGERS.

5. LOCAL GOVERNMENT AND VILLAGE ROLE CONSIDERED ESPECIALLY IMPORTANT TO ASSURE MAINTENANCE AND REPAIR OF WATER SYSTEMS. WHILE 611 (E), FOREIGN ASSISTANCE ACT (FAA), DOES NOT REPEAT NOT APPLY TO PROPOSED PROJECTS, WE BELIEVE IT ESSENTIAL THAT THERE BE ADEQUATE PROVISION FOR LOCAL MAINTENANCE WITHOUT FURTHER AID INPUTS. IF POSSIBLE, THIS PROVISION SHOULD BE BASED ON EXPERIENCE WITH SIMILAR PROJECTS IN RECIPIENT COUNTRIES.

6. PER USAID HB 3, THE FOLLOWING SHOULD BE INCLUDED IN FINAL PAPER. REQUEST TRANSMIT FOLLOWING DATA BY CABLE OR TELEPHONE ASAP: A) EVALUATION PLAN, INCLUDING BUDGET EXPENSES AS NECESSARY; B) AN INITIAL ENVIRONMENTAL EVALUATION; AND C) STATUTORY CHECKLIST.

7. SPC STAFF CAPABILITY FOR WATER PROJECT. REFTEL A MENTIONS DUHN, BUT DOES NOT STATE WHO THIS IS, HIS TENURE WITH SPC, AND IF HE WILL PROVIDE SUPERVISORY NEEDS FOR PROJECT. WHAT ARE SPC PLANS FOR ENGINEERING/SUPERVISORY STAFF?

8. BUDGET. THE CONSTRUCTION/EQUIPMENT ELEMENTS OF BUDGET WERE TOO GENERAL, COSTS OF SUPERVISION ARE TOO UNCLEAR, AND CONTINGENCY PROVISION TOO LIMITED TO ASSESS ADEQUACY OF PLANNING AND COST ESTIMATES UNDER SEC. 611 (A), FAA. PLEASE EXPLAIN MANNER USED TO ARRIVE AT CONSTRUCTION COST ESTIMATES (FOR EXAMPLE, DESIGN, FEASIBILITY STUDY, EXPERIENCE WITH SIMILAR CONSTRUCTION ACTIVITIES, ETC.) AND PROVIDE AS MUCH DETAIL AS POSSIBLE ON SPECIFICS OF CALCULATING CAPITAL AND TA BUDGET COMPONENTS.

9. STAFFING FOR PROJECT. PROPOSAL REFERS TO QTE VOLUNTEER SUPERVISOR UNQTE WITH SALARY OF DOLS 15,000. WE ASSUME THAT THIS MEANS A SUPERVISOR OF LOCAL LEVEL VOLUNTARY LABOR GROUPS. IS THIS CORRECT?

10. FYI. PHILIPPINES BARANGAY WATER I; PP JUST COMPLETED, AND SPECIALIST LOWRY IS IN MANILA ON PERSONAL SERVICES CONTRACT. LOWRY HAS DESIGNED AND DEVELOPED A SPECIAL LOW COST WATER SYSTEM SUITABLE FOR SMALL COMMUNITIES. POUCHING BARANGAY WATER PP AND OTHER PAPERS FOR MISSION USE. SUGGEST, IN ADDITION, THAT MISSION SEND APPROPRIATE STAFF TO WORK WITH LOWRY IN MANILA AT LATER DESIGN PHASE.

11. APPRECIATE MISSION RESPONSE. PC WILL MEET SECOND

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WEEK JULY TO CONSIDER ALL INFORMATION. CHRISTOPHER

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DATE:

15 AUG 1980

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR, BUREAU FOR ASIA

FROM: ASIA/TR/STEP, *Jane E. Stanley*
Jane E. Stanley

THRU" ASIA/TR, *Tom Arndt*
Thomas M. Arndt

SUBJECT: Initial Environmental Examination for South Pacific Rural Water
and Sanitation Project (498-0269), South Pacific Regional, FY80

Problem: Need for a Threshold Decision on this project

Discussion: Attached for your review is the Initial Environmental
Examination for subject project with a recommendation for a Threshold
Decision of Negative Determination. I concur with the recommendation
made by the Mission.

Recommendation: That you approve the recommended Threshold Decision for
this project.

Attachment: IEE

INITIAL ENVIRONMENTAL EXAMINATION

Project Location:

South Pacific

Project Title:

South Pacific Rural
Water and Sanitation

Funding:

\$ 600,000 Grant

Life of Project:

3 Years

IEF Prepared by:

Eric Dunn
Environmental Health Advisor
South Pacific Commission

Environmental Action Recommended:

Negative Determination

Regional Development Officer's Concurrence: Suva 2840

Date: 8/14/80

Assistant Administrator's Decision:

Approve: 

Disapprove: _____

Date: 8/20/80

RURAL WATER SUPPLY AND SANITATION PROGRAM
INITIAL ENVIRONMENTAL EXAMINATION

1. DESCRIPTION AND OBJECTIVES OF PROJECT

The project aims at providing an adequate and accessible supply of wholesome water to the rural village people of the Pacific Islands for drinking, cooking, and domestic purposes and, where possible, for agriculture and small rural industries. This is to be achieved by providing a number of water outlets for communal use in a ratio of about one outlet for three or four families or 20-25 people, with additional outlets for agricultural use depending upon the type of source and quantity of fresh water available. Associated with each water supply project there will also be a project aimed at the sanitary disposal of human excrement.

The ultimate objectives of the project are:-

- (i) to improve the physical health, sanitary environment, and quality of life of the rural people;
- (ii) to reduce the burden, mainly on women, of fetching water in small quantities over long distances;
- (iii) to improve village economies by providing water for small village agricultural projects, and cottage industries;
- (iv) to provide support for development of rural production and technology.

2. IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL IMPACTS

A. LAND USE

1. CHANGING THE CHARACTER OF THE LAND THROUGH -

(a) INCREASING POPULATION

Improvements in amenities and sanitation of the village environment will tend to discourage migration to the urban areas, thereby causing a slow expansion in village populations. This is generally considered to be desirable.

(b) EXTRACTING NATURAL RESOURCES

Water will be extracted either from surface water sources such as rivers, streams and lakes, or from springs or groundwater. For the small extraction rates envisaged, the effects will be negligible, except in the case of very fragile basal groundwater reserves on some small atolls where care must be taken to prevent sea-water intrusion by overpumping.

(c) LAND CLEARING

Some small amount of land clearing will be necessary initially to clear ground for pipeline trenches and for the erection of windmill pumps and water storage tanks. Such vegetation will be mostly weeds, scrub, vines and other plant life of no ecological or economic value, and will rapidly regenerate.

(d) CHANGING THE CHARACTER OF THE SOIL

There will be no physical changing of the soil except the removal of hard rocks and stones along the pipeline trenches.

2. ALTERING NATURAL DEFENCE OF THE AREA

There will be no alteration to the natural defences of any area.

3. FORECLOSING IMPORTANT USES

In some cases it will be necessary to protect a small catchment or recharge area against pollution from humans, pigs, cattle, agricultural pesticides and other sources of contamination, but this is unlikely to create major restrictions of important uses.

4. JEOPARDIZING MAN AND HIS WORKS

There will be no interference with normal village activities except that pipelines must be kept clear of building and agricultural activities to prevent damage.

5. HEAVY VEHICLE TRAFFIC

The projects will not give rise to or encourage vehicle traffic.

B. WATER QUALITY

1. CHANGING THE PHYSICAL STATE OF THE WATER

There will be no change in the physical state of the water sources.

2. CHANGING THE CHEMICAL AND BIOLOGICAL STATE OF THE WATER

The only changes should be those of improvement, as efforts will be directed towards prevention of pollution and contamination. There is always some danger of salt water intrusion of the fresh groundwater lens on some small atolls if overpumping takes place, but precautions will be taken to prevent this.

3. CHANGING THE ECOLOGICAL BALANCE OF A WATER BODY

Extraction rates will be too small to affect the ecological balance of water sources.

C. ATMOSPHERIC

1. AIR ADDITIVES

None

2. AIR POLLUTION

None

3. NOISE POLLUTION

In projects where it is necessary to use small motor powered pumps some intermittent engine noise will occur, but this will be minimal.

D. NATURAL RESOURCES

1. DIVERSION, ALTERED USE OF WATER

There will be no physical diversion of water courses, but upland springs may be protected by boxing, and small streams may be partially dammed. Spillways and overflows will be provided to ensure minimal impairment of downstream flow.

2. IRREVERSIBLE, INEFFICIENT COMMITMENTS

None

E. CULTURAL

1. ALTERING PHYSICAL SYMBOLS

The only physical symbols will be the provision of village stand pipes, elevated storage tanks, and in some cases windmill pumps.

F. SOCIO-ECONOMIC

1. CHANGES IN ECONOMIC/EMPLOYMENT PATTERNS

Community health and economic development are closely related because a healthy community free from chronic debilitating diseases is more likely to be enterprising and productive. The village women, who spend much time carrying water from distant sources, will have more time and energy to devote to more productive work in the village and home. An adequate piped water supply will also encourage improved agriculture, animal husbandry and cottage industries.

2. CHANGES IN POPULATION

By improving the quality of life and sanitation of the villages it should encourage the people to remain at home and improve village life instead of moving to the towns. In the long term this will be highly beneficial in most of the Pacific Island countries.

3. CHANGES IN CULTURAL PATTERNS

The projects are expected to improve cultural patterns relating to sanitary practices.

G. HEALTH

1. CHANGING A NATURAL ENVIRONMENT

The projects should materially assist in reducing the incidence of insect vectors of disease, especially flies and mosquitoes, since improved excreta disposal will reduce fly breeding and drums and containers used for storing water can be abolished, thereby reducing mosquito breeding foci.

2. ELIMINATING AN EGOSYSTEM ELEMENT

No elements of health related egosystems are involved in these projects.

3. SAFETY PROVISIONS

All structures will be constructed in accordance with good engineering practice and in accordance with manufacturers' directions.

H. GENERAL

1. INTERNATIONAL IMPACTS

The projects provide for improved standards of rural sanitation and hygiene, health education and sanitary practices which will assist rural people to adapt more easily when visiting towns and other countries in the region. It is also in harmony with the declared international water supply and sanitation decade of the World Health Organization.

2. CONTROVERSIAL IMPACTS

None

3. LARGER PROGRAMME IMPACTS

Rural water supply and waste disposal are very much related to rural production, and may be considered the true basis of rural development. They may be a prerequisite to, or an essential support factor of larger economic and health programmes.

3. CONCLUSIONS AND RECOMMENDATIONS

Since this evaluation does not identify any significant adverse environmental impacts, a Negative Determination is recommended.

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FOR ASIA/ISPA RYBAK

ED 12855: N/A
SUBJ: SOUTH PACIFIC RURAL WATER SUPPLY AND SANITATION

REF: (A) ENCLOSURE TO LETTER TO ASIA/ISPA 8/6/80,
(B) STATE 213292

1. SPROD HAS HAD AN OPPORTUNITY TO STUDY IEE IN DETAIL FOR THE ASIA REGIONAL SUBJECT PROJECT WHICH WAS PREPARED BY E.G. DUHN, SOUTH PACIFIC COMMISSION ADVISOR IN ENVIRONMENTAL HEALTH AND FOOD HYGIENE.

2. WE WOULD LIKE TO ADD AN ITEM ROMAN THREE: RECOMMENDATION FOR ENVIRONMENTAL ACTION TO IEE AS FOLLOWS: ON THE BASIS OF THE INFORMATION SUPPLIED HEREIN, IT IS INDICATED THAT ALL PROJECT ACTIVITIES, (EXCEPT POSSIBLY THE SLIGHT DANGER OF SALTWATER INTRUSION OF FRESH GROUNDWATER LENS ON SOME SMALL ATOLLS IF OVERPUMPING TAKES PLACE), WILL NOT HAVE A SIGNIFICANT ADVERSE EFFECT ON THE ENVIRONMENT. IN THE CASE OF VERY FRAGILE BASAL GROUNDWATER RESERVES ON SOME SMALL ATOLLS CARE WILL BE TAKEN TO PREVENT SEAWATER INTRUSION BY OVERPUMPING. IT IS FULLY EXPECTED THAT EXTRACTION RATES WILL BE TOO SMALL TO HAVE SUCH AN EFFECT. THEREFORE A NEGATIVE DETERMINATION IS RECOMMENDED.

3. PLEASE PROCESS IEE FOR APPROVAL AFTER ADDING IMPACT IDENTIFICATION AND EVALUATION FORM. SUGGESTED SYMBOLS ARE AS FOLLOWS:

-. (1) CHANGING THE CHARACTER OF THE LAND

- (A) LITTLE
- (B) LITTLE TO NEGLIGIBLE
- (C) LITTLE
- (D) NONE

(2) ALTERING NATURAL DEFENSES - NONE

(3) FORECLOSING IMPORTANT USES - LITTLE

(4) JEOPARDIZING MAN OR HIS WORKS - NONE

(5) OTHER - HEAVY VEHICLE TRAFFICE - NONE AND NO OTHER TO BE LISTED.

7. WATER QUALITY

- (1) NONE
- (2) LITTLE TO NEGLIGIBLE
- (3) NONE

C. ATMOSPHERE

- (1) NONE
- (2) NONE
- (3) NONE

D. NATURAL RESOURCES

- (1) NONE
- (2) NONE

E. CULTURAL

- (1) LITTLE
- (2) NONE

. SOCIO ECONOMIC

- 1) MODERATE
- 2) MODERATE
- 3) HIGH - BY IMPROVED SANITARY PRACTICES

J. HEALTH

- (1) HIGH
- (2) NONE
- (3) HIGH - CONSTRUCTION WILL BE IN ACCORD WITH SOUND ENGINEERING PRACTICES

H. GENERAL

- (1) HIGH
- (2) NONE
- (3) HIGH - AS RELATED TO RURAL PRODUCTION, BOBDE

UNCLASSIFIED

South Pacific Regional Development Office
U.S. Agency for International Development

American Embassy
POST Office Box 218,
Suva, Fiji.

Phil *JW*
South Pacific
Rural Water Supply
April 24, 1980
9/1/86

Mr. Robert Halligan
Office of Development Planning
Bureau for Asia
Agency for International Development
Washington, D. C. 20523
USA

Dear Bob:

I am enclosing a copy of the South Pacific Commission's Rural Water Supply and Sanitation program. I have not yet read this proposal and am slipping a copy in the mail to you so that we can converse by telephone or cable as needed.

You will recall we discussed this particular project in Singapore in January, and you suggested that the simpler more efficient way to handle it was not through the PID-Project Paper route but through an action memorandum to the Assistant Administrator as earlier grants to the South Pacific have been handled.

I sent a copy of this to Rod Johnson the Legal Officer in Manila who will actually draw up the grant and will also be staying in touch with him by cable and telephone. As soon as we have had a chance to study it over I expect, probably by cable, that an action memorandum be initiated.

Regards,

Enclosure:
a/s

Robert V. Craig, Sr.
South Pacific Regional
Development Officer

cc: D. Rybak, ASIA/ISPA
South Pacific Commission Proposal
South Pacific Commission Memorandum of Understanding

South Pacific Regional Development Office
U.S. Agency for International Development

American Embassy
POST Office Box 218.
Suva, Fiji.

April 24, 1980

Mr. Rod Johnson
Regional Legal Officer
American Embassy (AID)
APO San Francisco 96528
USA

Dear Rod:

At last the South Pacific Commission's Rural Water proposal has arrived. Without taking the time to analysis it, I am forwarding you a copy so you will have it on hand.

I am also sending a copy to Bob Halligan so that he will have a copy on hand. Then I will follow up by cable with you both asking Bob to precipitate an action memorandum to the Assistant Administrator for approval of the project, and a cable to you asking that a draft grant be prepared.

Perhaps in this fashion we will be able to wrap the whole thing up before you leave Manila early in July. I do not know if you want to come to Suva for the final details or not. If you do, we have the travel funds.

In addition Ambassador Condon and I will be attending a meeting of the South Pacific Commission's Planning and Evaluation Committee beginning May 19 in Noumea. We hope to be able to say something rather cogent about the status of this proposal at that time. Any comments you have positive or negative prior to that date would be greatly appreciated.

Regards,

Robert V. Craig, Sr.
South Pacific Regional
Development Officer

cc: D. Rybak, ASIA/ISPA
South Pacific Commission Proposal
South Pacific Commission Memorandum of Understanding

SOUTH PACIFIC COMMISSION

RURAL WATER SUPPLY AND SANITATION PROGRAMME

MEMORANDUM OF UNDERSTANDING
IN RESPECT OF
TECHNICAL AND/OR FINANCIAL ASSISTANCE
FROM THE SOUTH PACIFIC COMMISSION

OBJECTIVES AND PRINCIPLES

1. The principal objectives of the project will be to provide the village people of with an adequate and accessible supply of wholesome water for drinking and domestic use and at least one sanitary water-seal latrine for each family with a view to improving environmental sanitation of the village and the health of the village people.
2. The scheme shall be based upon the provision of communal water points in such numbers and positions as to provide water conveniently accessible to the villagers for domestic use and the manual flushing of water-seal latrines.
3. The total daily quantity of water supplied will be the maximum which can be conveniently and economically provided having regard to the capacity of the water source and the costs of installation, maintenance and daily running.
4. { The South Pacific Commission cannot undertake to connect the water supply to individual houses, and village water supply schemes are not normally expected or designed to provide for such demand. However, in the event that requests are received for such connections after completion of the installation, in the interests of health and amenity it is suggested that they be sympathetically considered. Permission however should only be given if, in the opinion of the Government's Director of Works, the supply is found to be adequate to meet such additional demand without detriment to the supply provided to other members of the village community, and on such terms as the Government may determine.
5. The installation shall be constructed in accordance with the plans and specifications provided or approved by the South Pacific Commission and the advice of the SPC Programme Officer assigned to the project.

- 6. On completion of the installation it will be handed over to the Government of or such local authority as the Government may direct which will then assume responsibility for its subsequent maintenance.

COMMITMENTS

- 7. It is hereby agreed that the project shall be a joint venture between the following three parties -
 - (a) The South Pacific Commission
 - (b) The Government of
 - (c) The people of the village ofand that the commitments of each party shall be as follows -

- (i) COMMITMENT OF SOUTH PACIFIC COMMISSION

The South Pacific Commission will -

- (a) provide or meet the cost of all materials (duty free) used in connection with the project up to a maximum of \$A
- (b) provide technical advice and assistance in implementing the project.

- (ii) COMMITMENT OF GOVERNMENT

The Government of will -

- (a) waive import duty on all materials purchased overseas or locally by SPC for the project.
- b) name at least one official counterpart as Government executive officer for the project -
 - (i)
 - (ii)
- (c) provide such number of skilled technicians as may be necessary to assist in expediting completion of the project within a reasonable time.
- (d) provide on free loan for such time as may be necessary to complete the project such tools and equipment as the SPC officer and Government counterpart may require. The tools and equipment required will include such items as plumber and fitters' handtools, spades, picks; knives, portable pumps, ladders, pipevices, etc.
- (e) provide internal road and/or sea transportation of all materials and equipment for the project and for official duty travel of SPC personnel working on the project.

(III) COMMITMENT OF VILLAGE COMMUNITY

The people of the village of will -

- (a) provide, free of charge, such land as may be necessary for the installation of water storage tanks, reservoirs, pumping stations, wells, etc., and way-leave for the laying of pipelines across private and village land.
- (b) provide, free of charge, local materials such as gravel, sand, bush-timber, etc., as may be required.
- (c) provide such number of voluntary workers each day as may be required to carry out excavations, lay pipes, mix concrete and similar work.
- (d) provide accommodation in the village, at a reasonable charge, for one or more SPC officers.

Signed Designation
 this day of 19.....

for and on behalf of the South Pacific Commission

Signed Designation
 this day of 19.....

for and on behalf of
 Government or Administration

and the people of the village of 5

SOUTH PACIFIC COMMISSION

RURAL WATER SUPPLY AND SANITATION PROGRAMME
FOR THE ISLANDS OF THE SOUTH PACIFIC COUNTRIES

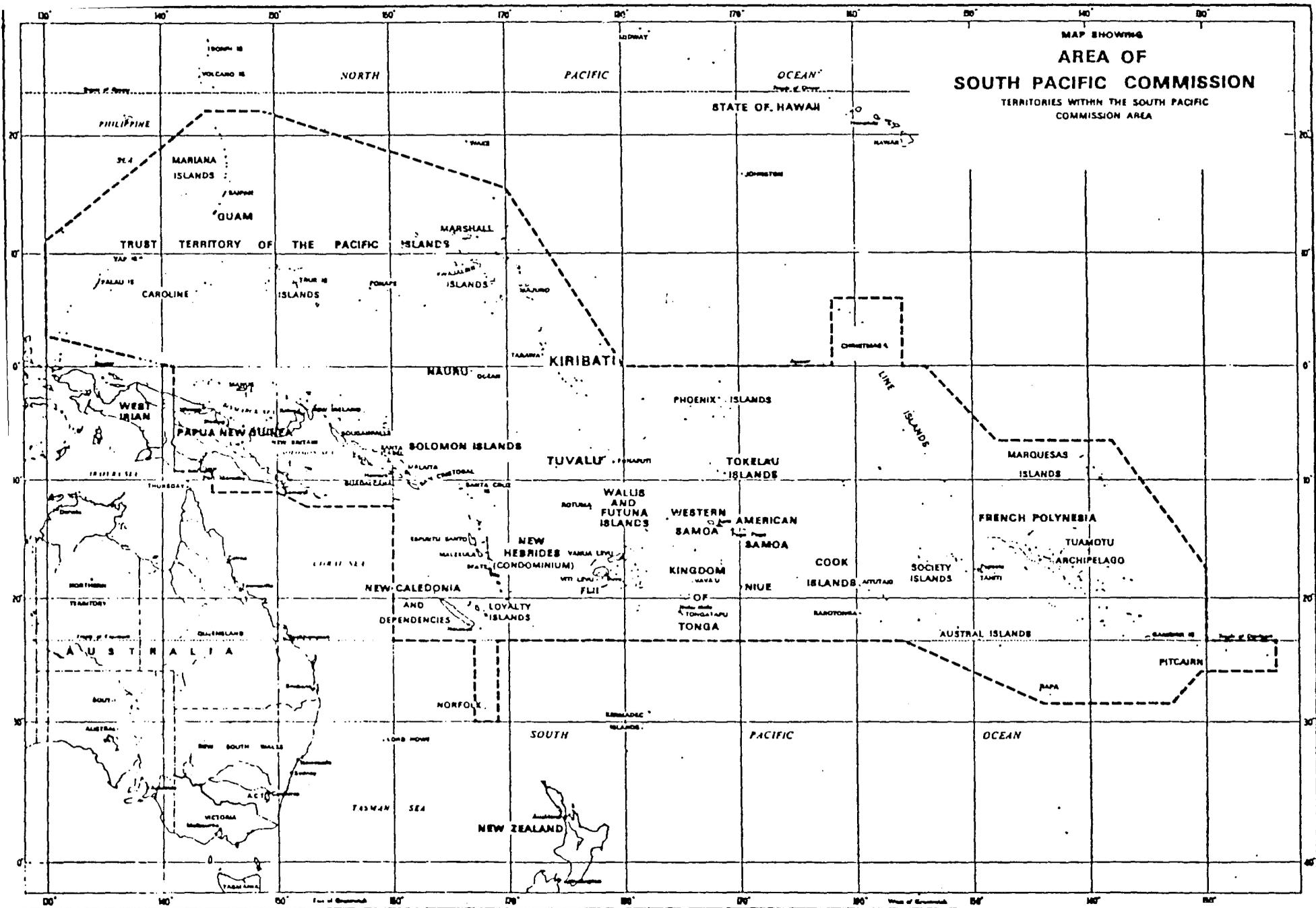
THREE YEAR PROJECT PROPOSAL
FOR U.S. AID FUNDING

6

Noumea, New Caledonia
14 April, 1980

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SOUTH PACIFIC COMMISSION

RURAL WATER SUPPLY AND SANITATION PROGRAMME
FOR THE ISLANDS OF THE SOUTH PACIFIC COUNTRIES

THREE YEAR PROJECT PROPOSAL
FOR U.S. AID FUNDING

by
E.G. Dunn
Adviser in Environmental Health

1. INTRODUCTION

- 1.1 Since 1976, in accordance with the directive of the Sixteenth South Pacific Conference, one of the principal components of the Commission's work programme has been concerned with Rural Management and Technology, which includes projects relating to improvement of water supplies and sanitation in the rural areas.
- 1.2 In the Pacific Islands the majority of the population lives in the rural areas; therefore community water supply and sanitation are very much part of and are closely related to rural life and development, and play an essential role in overall rural development programmes.
- 1.3 Rural development policies in the past have tended to emphasise agricultural production in isolation, neglecting improvements in basic amenities and technology, education and training, which would improve the quality of life and social progress of the rural people. Based on the assumption that rural productivity and social progress are interdependent and mutually reinforcing, the Commission has adopted a programme of "integrated rural development" which accepts community water supply and sanitation as a basic factor in rural development.

2. HEALTH BENEFITS

- 2.1 In the rural areas of the Pacific Islands there exist many serious environmental health problems. These give rise to diseases which sap the strength and vitality of the rural people, and seriously hinder development in physical and economic terms.
- 2.2 Although the Pacific Islands are fortunately free of most of the more serious tropical diseases found in Africa and Asia, they still have many endemic diseases to be overcome, a number of which are related to inadequate and/or contaminated water supply and poor sanitation.

2.3 The mosquito-borne diseases of malaria, filariasis and dengue fever seriously affect many islands; gastroenteritis, bacillary dysentery and food-borne illnesses are widespread; helminthic and protozoal diseases such as hookworm, ascariasis, giardiasis, balantidiasis and other abdominal parasitic infections are common, especially in children; infectious hepatitis has become increasingly prevalent in recent years; typhoid fever hovers in the background, and cholera, hitherto unknown in the Pacific Islands, has made its appearance in the last few years.

2.4 There can be no doubt that the key to the improvement in conditions of sanitation generally in the rural villages is the provision of an adequate and wholesome piped water supply. Apart from the undoubted benefit to health of having a wholesome water supply available for drinking and cooking, it is a necessary prerequisite if significant improvements are to be achieved in methods of disposal of human excrement, and personal and community hygiene. As emphasised by Wagner and Lanoix¹

"(i) in most small towns and villages in rural areas, more health benefits can be gained from money spent on a water supply programme than in any other way;

(ii) there will be little public health benefit from a water supply which does not provide water in adequate quantity and quality and in a way convenient to the population".

2.5 Since the provision of a piped water supply (even though it is only in the form of restricted community outlets or wells) generates a greater volume of waste water, adequate facilities must be provided in the form of soakage pits, soakaway trenches, or conduits to rivers, etc, to safely remove this waste water. If this is not done, then health hazards can arise due to the breeding of disease vectors such as mosquitoes and flies, and the spread of helminthic diseases such as ancylostomiasis and strongyloidiasis through accumulations of stagnant water and swampy soil.

2.6 Associated with each rural water supply project there will also be a project aimed at the sanitary disposal of human excrement. In the rural areas and villages of the Pacific Islands, disposal of excrement is usually by one of four methods -

(i) defecation on the ground in bush areas set aside for this purpose around the perimeter of the village.

(ii) defecation on the beach (not always below high water mark).

(iii) the use of "overwater" or "overhang" latrines on the banks of rivers, lagoons, or the seashore.

(iv) the use of poorly constructed simple pit latrines.

All of these methods give rise to health hazards, especially the spread of intestinal parasites and other helminthic diseases, arthropod-borne diseases, and virus infections such as infectious hepatitis and viral gastroenteritis.

¹ E.G. Wagner and J.N. Lanoix - Water Supply for Rural Areas and Small Communities. WHO Monograph Series No.42.

- 2.7 For villages and small communities in rural areas of the Pacific Islands the most acceptable form of family toilet is the simple pit latrine, due mainly to its low cost and ease of construction. These vary considerably in their effectiveness, depending upon a number of factors, but can never be considered completely satisfactory.
- 2.8 However, the pit latrine can be made very much more effective by the use of a concrete cover incorporating a water-seal bowl. The pit latrine is thereby converted to a "hand flush" or "pour flush" pit privy requiring only a minimum quantity of water for flushing and sealing (about 2 litres).
- 2.9 This type of "pour-flush" water-seal pit privy was introduced into the Pacific region around 1965 and is now used extensively in most of the Pacific islands. Originally made of cement plaster, which has many disadvantages in construction and use, the water-seal bowl is now being made by a firm of plastic specialists in New Zealand, of a high density white polythene. Both "squatting" type and "pedestal" type bowls are produced which can be set in a concrete slab or riser. These plastic bowls are available for shipment from New Zealand to the Pacific Islands at a very reasonable cost.
- 2.10 An essential part of this sanitation programme would be the provision of one water-seal hand flushed pit privy to each family unit.

3. ECONOMIC BENEFITS

- 3.1 There can be no doubt that economic development and community and environmental health are closely related, because in the long term, a healthy community free from chronic debilitating diseases is more likely to be enterprising and productive. Moreover much of the technology which contributes to improvements in environmental sanitation is also essential to economic development.
- 3.2 In the case of water supply, it is not uncommon that the women in rural villages have to spend several hours a day fetching water. With remote water sources, the inclination is to fetch just the minimum quantity required for drinking and cooking. The tendency also is to use the closest source, which is often contaminated. The provision of nearby water outlets results in a saving of time and energy which the women can put to more productive work in the village and home. A better and safer quality water supply results in less sickness, especially among young children, and enables people to work more effectively and to be more productive.
- 3.3 In those islands where there is an adequate source available, such as a river, lake or upland spring from which water can be gravity fed to the community, the provision of a piped water supply also has direct economic implications in that water may be used for irrigating crops, watering cattle, pigs and chickens, operating small abattoirs and animal by-products plants, biogas waste digesters, etc., and the establishment of small cottage industries such as non-alcoholic beverages, soap and starch manufacture, etc.

- 3.4 In some instances, the provision of a piped water supply has encouraged rural people in the larger islands to cultivate previously undeveloped but productive land, and to move their villages and build roads into the area. Even in the atolls and low islands where fresh water resources are scarce, and reliance has to be placed on the extraction of groundwater and the collection of rainwater, schemes to develop groundwater resources and improve rainwater catchment and storage often have significant economic benefits. For example, in the atolls where people experience difficulties in obtaining fresh drinking water, a very large number of young green coconuts are consumed for drinking which lowers the surplus of mature nuts for copra production.

4. RELATION TO RURAL PRODUCTION AND TECHNOLOGY

- 4.1 Rural water supply and waste disposal are very much related to rural production, and may truly be considered the basis of rural development. They may be a prerequisite to, or an essential support factor of this sector, and may even result in the spin-off of valuable assets.
- 4.2 An essential component of any rural water supply programme is the training of village mechanics in the use of hand tools, basic plumbing techniques, repair of simple hand pumps, the construction of various types of water tanks, the erection of tankstands, etc., and also the maintenance of small petrol and diesel engine pumps and windmill pumps. Since such work is not a full-time occupation, these mechanics should be trained so as to be capable of other general repair work in the village such as outboard motors, motorcycles, vehicles, agricultural machinery and basic building. By integrating their skill with the other needs of the community, they will be more likely to remain in the village after they finish their training.
- 4.3 Human and animal excrement and agricultural wastes can be used advantageously to produce additional protein and sources of energy, but water is an essential ingredient. For many years the Commission has been pursuing a project termed the "Integrated Farming System" which involves the production of animal feed (algae and fish), fuel (methane gas) and fertiliser (stabilised organic effluent) through the biological treatment of animal wastes by means of a biogas waste digester. Essential prerequisites are an adequate and reliable source of fresh water and someone with technical interest and knowledge on site to maintain the system. Many of these projects have failed due to lack or breakdown of these two components.
- 4.4 The production of biogas by the anaerobic digestion of organic wastes is now well known and well documented, and can provide an important alternate energy source to kerosene for cooking and lighting in the rural villages of the Pacific Islands. The recycling of animal, human and agricultural wastes through biogas digesters not only helps to prevent pollution of the environment, but also provides clean fuel and fertiliser. An adequate water supply however is essential.

- 4.5 Sewage can also be treated in waste stabilisation or oxidation ponds in which algae can grow; when harvested the algae can become an important food supplement for animals, containing 40% protein. The algae can also be used for fish rearing in maturation ponds.
- 4.6 Small scale aquaculture systems ranging from subsistence farming by individual family units, as practised in Taiwan, to small co-operative production units, could well be integrated into the rural economies of some of the Pacific Islands, providing adequate water and related technology is available.

5. PRESENT SITUATION AND PROBLEMS

- 5.1 The South Pacific Commission region encompasses an area of the tropical Pacific between approximately 20°N and 30°S of the Equator and 138°E and 130°W of Greenwich. It includes 20 countries and dependent territories containing nearly 5 million people of three main ethnic groups - Melanesian, Polynesian and Micronesian, scattered over some 30 million square kilometres of the Pacific of which less than two per cent is land.
- 5.2 The islands in the region vary greatly in their size, geological and topographical characteristics, from the rugged mountainous regions of Papua New Guinea to the small sandy coralline islets of the low atolls. There is also a wide variation in annual rainfall and intensity of rainfall.
- 5.3 Of the total population it is estimated that about 4.5 million live on the larger high islands (mainly in Melanesia, the largest being Papua New Guinea with a population of approximately 3 million), and about 400,000 on atolls and isolated low islands. Of the first group about 800,000 live in the larger urban centres which are provided with reasonably adequate piped water supplies and sanitary facilities. Of the second group about 120,000 are located in small townships on a few of the atolls and small islands which have very limited and unreliable water supplies and poor sanitary facilities.
- 5.4 The sectors of the population to which this programme is directed comprise those people living in rural villages, often on remote isolated islands or in remote areas of the larger islands, which have no proper water supply or sanitary facilities.
- 5.5 With the gradual post-war development of small urban areas, mainly as a result of the establishment of government centres, seaports and airports, governments in the region have tended to concentrate on providing piped water supply and sanitary facilities only to the higher density urban areas. The rural villages have on the whole been left to carry on in their old traditional ways, although some countries with established local government councils have made some progress in catering for the village people through their own locally promoted schemes.

5.6 In practice the main problems are threefold:-

- (i) difficulty in raising the necessary capital funds, especially in present times of rapidly escalating costs of imported materials;
- (ii) lack of local technical expertise on site to design, plan, cost, and supervise suitable schemes and subsequently maintain them;
- (iii) difficulty in procuring the necessary tools, materials, and equipment, much of which may have to be imported directly from overseas.
Very few countries possess central government stores or commercial retailers who can supply all items from stock.

6. PROPOSED PROGRAMME (TECHNICAL CONTENT)

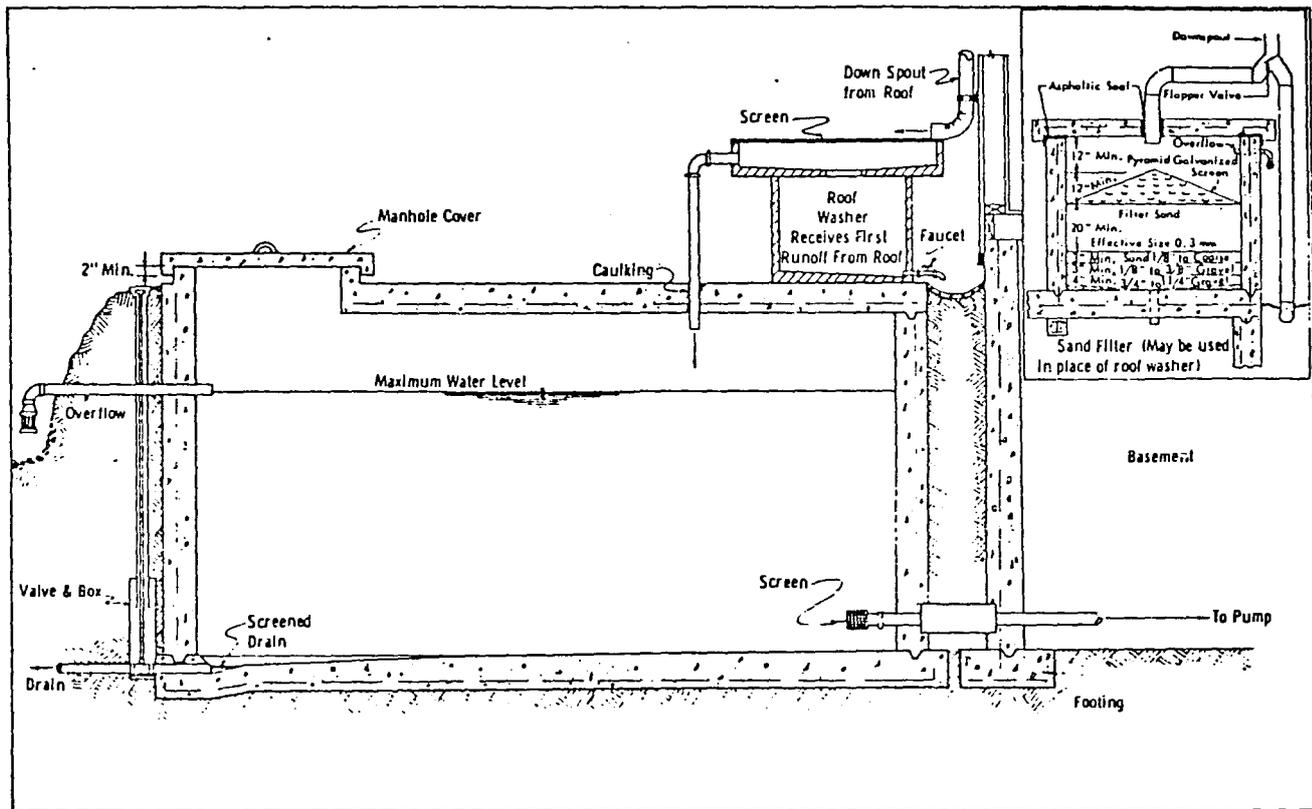
6.1

It is proposed that the South Pacific Commission should undertake a three year programme (1980-82) of rural water supply and sanitation projects involving -

- (i) the investigation and development of groundwater resources through the construction of bore holes, infiltration galleries, and simple, properly protected hand dug and driven wells, and the extraction of water using simple, easily maintained hand pumps, or where appropriate windmill driven pumps or small engine driven pumps; and
- (ii) the development and protection of upland springs for gravity reticulation; and
- (iii) the utilisation of suitable surface water sources such as rivers, streams, lakes, using hydraulic rams, windmill pumps, small dams and reservoirs, etc; and
- (iv) the appropriate methods of rainwater storage and collection where other sources are not available or require to be supplemented; and
- (v) the assessment of the most appropriate type of water storage tank under varying island conditions; and
- (vi) the development of simple methods of water treatment under rural conditions and to meet emergencies; and
- (vii) the training of local national staff in basic rural water supply technology, plumbing, and the maintenance of pipelines, pumps, windmills and other equipment.

6.2

Each water supply project would also include an associated project aimed at the sanitary disposal of excrement and waste water, achieved by -



CISTERN.

ANNEX I
 DIAG No 1.

PROJECTS PLANNED OR REQUESTED

Requests have been received from the following countries for assistance in planning and implementing rural water supply projects. Some of these are already in the planning stage with procurement of materials under way

1. KIRIBATI (formerly GILBERT ISLANDS)

These Micronesian islands comprise mainly atolls and small reef islands situated between latitude 5°N and 5°S of the Equator and spread over a vast expanse of the central Pacific Ocean. There are 18 atolls and reef islands in the main group plus a number of scattered small atolls in the Phoenix and Line Islands groups. The total population is approximately 60,000. Requests have been received for assistance with water supplies on four islands in the main group.

One project on Nikunau - a remote southerly reef island - has already been planned and the materials ordered. The island has six villages each having a population of 300-400. The only sources of fresh water on the island are a shallow groundwater lens and rainwater catchment. About 1966, the government, with WHO assistance, provided each village with an independent water supply comprising a shallow well with windmill pump, elevated storage tank and community stand pipes. These schemes have worked well over the years but are now either broken down completely or reduced to a very low state of efficiency due to lack of maintenance and spare parts. All of these schemes will be repaired and rehabilitated at a cost of approximately \$US20,000.

2. TUVALU (formerly ELLICE ISLANDS)

These Polynesian islands are a southerly extension of the Kiribati group and also comprise mainly atolls and small reef islands. There are nine scattered islands having a total population of approximately 7,500 situated between latitude 5°-10°S of the Equator.

Requests have been received for assistance with water supplies on two islands - Nukufetau and Vaitupu. Nukufetau is a typical atoll (see Map No.1) and Vaitupu is a reef island with central lagoon (see Map No.2).

The main village on Nukufetau atoll is situated on the islet of Savave, but the groundwater here is not potable. The opposite islet of Fale however has a good freshwater lens and two wells from which the villagers extract water and carry it in tins and buckets across the reef.

A project has been planned to improve and protect these wells and to pump the water across the reef by means of a windmill pump to a storage tank in the village. Improvements to the rainwater catchment and storage facilities in the main village are also required.

Total cost will be \$US17,000-20,000.

Vaitupu is a relatively large reef island with a central lagoon. It has a total population of approximately 1,500, which is the second largest population to the principal government centre on Funafuti atoll. The main government secondary boarding school - Motufoua School, which has about 350 residential pupils, is also situated on this island. The village people and the school rely principally on rainwater catchment for fresh water supplies, and during times of drought carry water from three shallow wells situated at the north of the island. There are no wells on the island south of the lagoon. It would appear that the main fresh water aquifer is situated at the north of the island, although the topography of the island indicates that a similar aquifer may be available at the southern end of the island more convenient to the school and village. This would be worth investigating.

In any case, the water resources at the north of the island should be developed to provide a reticulated supply to as many people as possible. Improvements in rainwater collection and storage are also urgently required at the Motufoua School. Cost could be in the region of \$US25,000-30,000.

TOKELAU ISLANDS

The Tokelaus comprise a group of about one hundred small islets arranged in three low coral atolls. They lie about 320 miles north of Samoa between latitude 8°-10°S of the Equator. The total population of the Tokelaus is approximately 1,700.

A request has been received from the Tokelau Government for assistance in improving water supplies and sanitation on these atolls.

From earlier reports it seems that the groundwater potential is very limited and reliance is placed mainly on rainwater catchment.

These problems are to be investigated.

WESTERN SAMOA

One rural water supply-sanitation project has recently been completed for the village of Ti'avea at the far eastern tip of the main island of Upolu. This small coastal village is completely isolated and surrounded by high cliffs, making road access difficult. The population of about 400 people relied entirely on small coastal seepages and rainwater collection for supplies of fresh water.

Water was piped down from a protected spring at the top of the cliff-face to a storage tank above the village, and then distributed to community stand pipes in the village. This is a typical gravity-fed scheme using a high-level protected spring. Many other rural villages on the two main islands of Upolu and Savai'i require similar schemes. Projects of this nature cost between \$US15,000-30,000, depending upon nature of the terrain and length of piping, etc. required.

5. NIUE ISLAND

Niue is a small, flat, high reef island situated south of Samoa between Tonga and the Cook Islands on a latitude approximately 18°S of the Equator. It has a population of approximately 4,000 people. The only fresh water sources are groundwater and rainwater collection. Deep wells and bores have been constructed from which water is pumped to community stand pipes in most of the main villages, and this is supplemented by individual domestic rainwater collection tanks at most of the houses. At the main bores, pumping is carried out mainly by windmills and small auxiliary motorised pumps for use during calm periods.

Over a period of time the windmills wear out and have to be replaced or substantially renovated. Boreholes also have to be re-sited due to contamination or impaired yield.

SPC has requests for assistance to rehabilitate two village water supply systems where the windmill and pump require replacement and where the existing bore requires to be re-sited.

The total cost is estimated to be about \$US16,000-20,000.

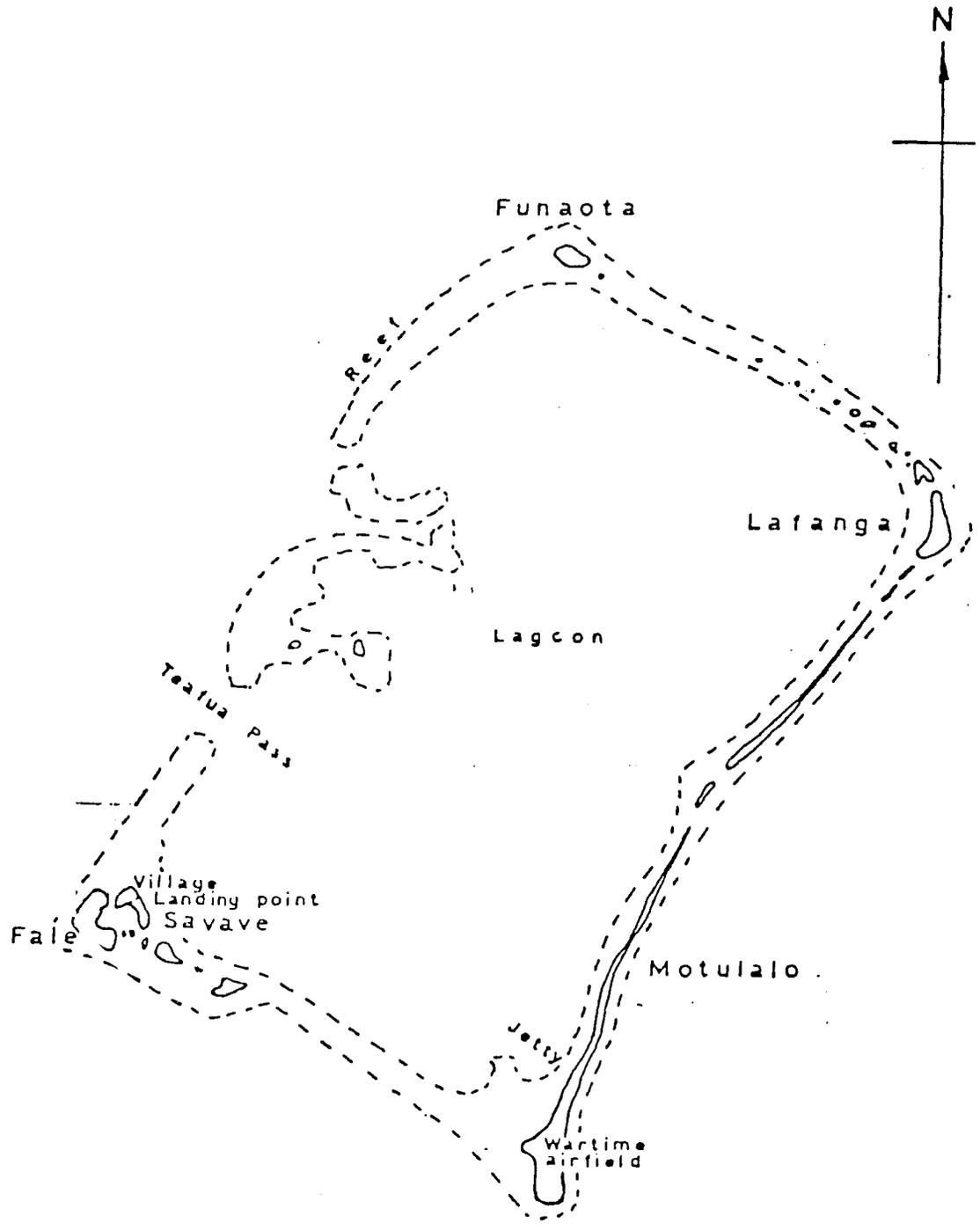
6. FIJI

Requests have been received from Fiji for assistance with rural water supply and sanitation projects, with special emphasis on appropriate methods of sanitation for rural schools. No details of these projects are yet available.

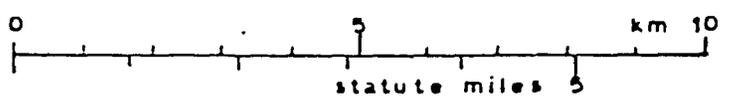
7. OTHER COUNTRIES

In addition to the above, similar needs have been identified in the Cook Islands, Tonga, New Hebrides, Solomon Islands and the U.S. Trust Territories.

NUKUFETOU

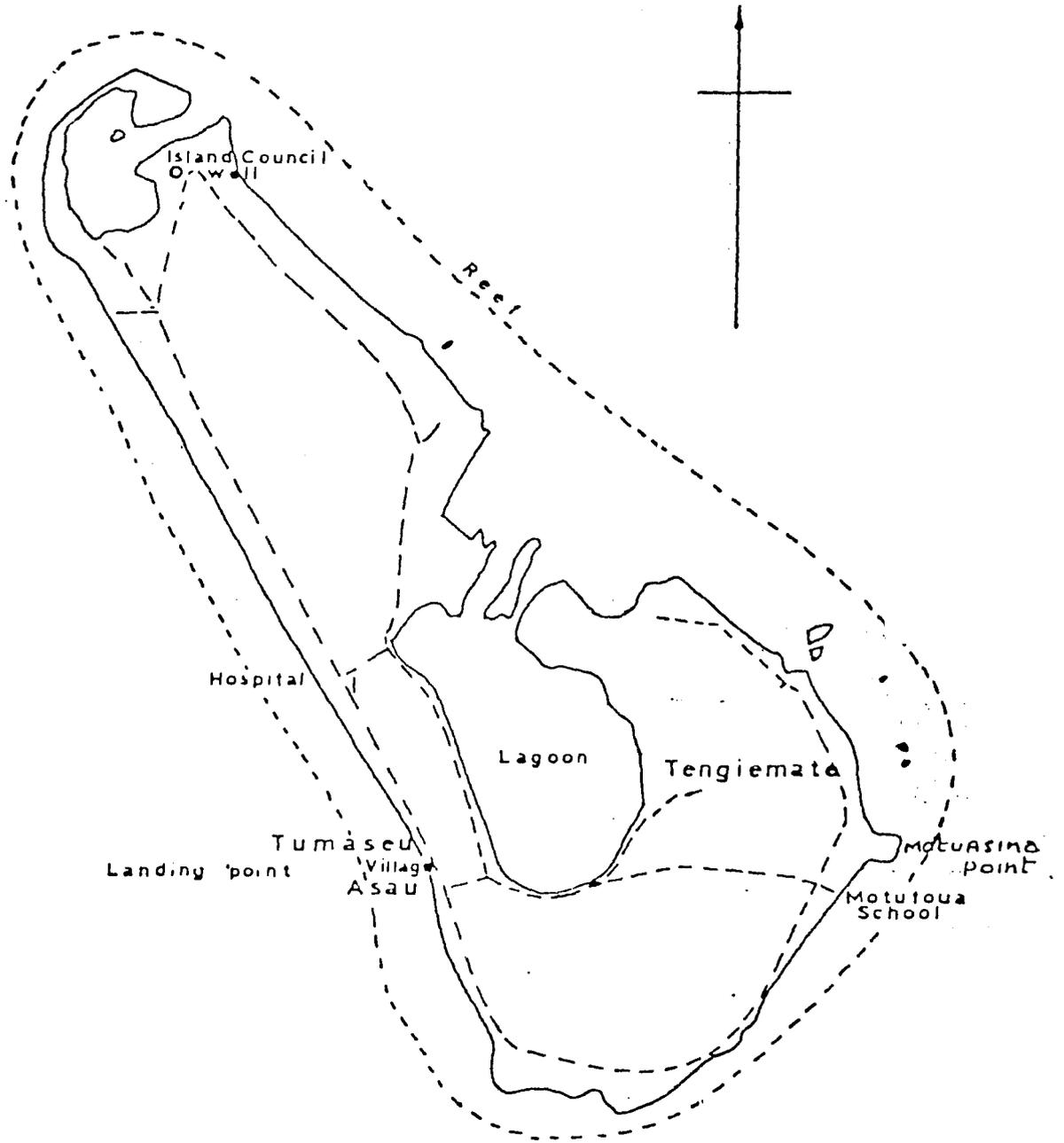


Scale (approx)



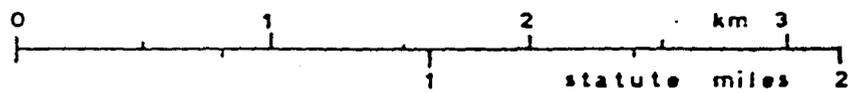
VAITUPU

MAP No.2



road or track

Scale (approx)



- (i) the provision of an appropriate hand-flushed latrine to each family unit. This may take the form of an improved water-seal pit privy, aqua-privy, or small biogas digester;
- (ii) the construction of suitable soakaways or irrigation trenches for the disposal of waste water and effluents.

In villages where the water supply was adequate, and it was feasible and appropriate to do so, some assistance could be given with the construction of communal showers and laundries.

7. BENEFICIARIES

7.1 The immediate beneficiaries of these projects would be -

- (i) village people in rural areas, especially those living on atolls, small isolated islands, and villages in rural areas unlikely to be serviced by government utilities in the foreseeable future;
- (ii) school children of rural primary schools run by local councils or churches;
- (iii) government and mission rural health clinics and aid posts;
- (iv) some rural mission stations.

7.2 The people would comprise isolated rural communities at the lower end of the socio-economic spectrum engaged mainly in subsistence farming, copra production, fishing, manufacture of local artifacts, and employees of local island councils.

7.3 The projects envisaged would serve communities of between 200-1500 people per project depending upon country and geographical locations. For example, many of the remote atolls have small village communities of 200-400 people on atoll islets, while in the larger islands a group of villages may contain a community of 500-1500 people. Projects would be designed to ensure maximum benefit at minimum per capita cost.

7.4 Experience of similar projects indicates a per capita cost of between \$US25-35 for materials, depending upon a variety of circumstances such as the type of source to be developed, the area covered, the nature of the terrain, population density, availability of materials, etc.

8. RECIPIENT COUNTRIES

8.1 All the countries of the SPC region would be eligible to receive assistance, but in the first instance priority would be given to the smaller and poorer countries in greatest need, especially where the provision of a water supply/sanitation project can be demonstrated as likely to improve the community health and economic independence. 21

8.2 Requests for projects have already been received from the following countries - Kiribati (formerly Gilbert Islands), Tuvalu (formerly Ellice Islands), Tokelau Islands, Niue Island, Fiji, and Western Samoa. As a matter of urgency, projects have already been planned for Kiribati and Tuvalu. Other countries with identified needs and likely to participate are Cook Islands, Tonga, New Hebrides, Solomon Islands, and the American Trust Territories.

9. IMPLEMENTATION OF PROGRAMME

9.1 ESSENTIAL INPUTS. The ultimate success of any rural water supply and sanitation programme depends upon -

- (i) Government participation and commitment.
- (ii) Full community acceptance and participation.
- (iii) On-the-job training for the development of local technical manpower.
- (iv) An adequate national logistical and supply infrastructure.
- (v) On completion of the project, acceptance by the government or some official body of responsibility for subsequent maintenance.

9.2 INPUTS BY SPC will comprise:-

- (i) assistance with the technical design, planning and costing of each project;
- (ii) the provision of all imported materials and equipment and essential tools, and arrangements for their procurement and importation;
- (iii) supervision and technical assistance in implementing the project;
- (iv) on-the-job training of national staff and village workers to ensure subsequent maintenance;
- (v) a continuing programme of health education for the rural people through village health committees, women's committees, etc.

9.3 With regard to training, it cannot be too strongly emphasised that although in designing rural water supplies for developing countries it is highly desirable to avoid if possible the use of mechanical motorised pumps, some technical maintenance is required by even the simplest systems. An essential element of these projects therefore, will be to ensure the training of national staff at the rural level in basic water supply technology.

9.4 Since slow and careful pumping is required for the extraction of groundwater on the small atolls, it is proposed to make the maximum use of wind power for this purpose wherever conditions permit, and to provide training in windmill pump technology and maintenance.

9.5 INPUTS BY GOVERNMENT AND VILLAGE COMMUNITY. Participation by the government and village community is essential, but the cost to them in terms of cash would be minimal. Governments would be required to assign some of their own staff to the projects, both skilled or semi-skilled technicians and trainees, and provide some supportive services such as internal transport, storage, clerical services, etc.

9.6 The village people would be required to provide voluntary labour on a self-help basis together with locally available building materials. They would also be required to provide land for the erection of storage tanks, windmills and similar equipment and wayleave for the laying of pipelines.

10. COMMITMENTS OF THE PARTIES

10.1 The projects will be implemented jointly by the following parties working in a spirit of close and friendly co-operation -

- (i) The South Pacific Commission.
- (ii) The Government of the participating country.
- (iii) The village community of the project area.

10.2 The South Pacific Commission will -

- (i) undertake to make available the services of its technical officers to assist the appropriate government departments in designing, planning and co-ordinating the projects, and to pay regular visits to the participating countries to provide assistance in implementing and supervising the field work; TA
- (ii) ~~for the first two years provide one full-time volunteer field supervisor to work with the people on the project sites;~~ 2 8/4
- (iii) with funds provided by U.S. AID arrange the procurement of all materials, tools and other equipment necessary ~~for the construction of the project, the purchase of one pick-up truck, and payment of the emoluments and expenses of a second volunteer field supervisor;~~ 2 P/1
- (iv) assist the Health Departments of the participating countries in planning and providing suitable sanitary facilities for villages, schools and clinics in the project areas;
- (v) upon the completion of each project, provide the services of its Health Education Officer to assist Health Departments in developing follow-up programmes of health education in villages and schools in the project areas. 2 P/1

10.3 The Participating Government will -

- (i) waive import duty on all materials and equipment purchased by SPC;
- (ii) provide safe storage for all equipment and materials supplied for the projects;
- (iii) provide base workshop facilities for fabrication, repair and maintenance of equipment;
- (iv) provide internal transportation of all materials and equipment for the projects, and for official duty travel of SPC personnel working on the projects;
- (v) { except as provided by SPC, supply such locally available tools, materials and equipment as may be necessary for the successful execution of the project;
- (vi) { provide such number of government technicians and trainees as may be necessary to ensure completion of the projects within the target time-schedule;
- (vii) name at least one senior government officer to act as official liaison officer for the projects;
- (viii) provide such office space, stationery and secretarial assistance as may reasonably be required by SPC personnel associated with the projects;
- (ix) meet the cost of all telephone, telegraph and postal communications, and other incidental expenses necessary for the successful execution of the project;
- (x) accept the project on its completion and the responsibility for its subsequent maintenance.

10.4 The Village Community

The village people and owners of land in the project areas will

- (i) provide free of charge and free of all restrictions, such land as may be necessary for the installation of water storage tanks, reservoirs, windmills, pumping stations, etc., and wayleave for the laying of pipelines across private and village land;
- (ii) provide, free of charge, local materials such as gravel, sand, bush timber, etc., as may be required for the projects;
- (iii) provide such number of voluntary workers each day as may be required to dig trenches, lay pipes, mix concrete, carry materials, and similar work;
- (iv) if required, provide accommodation in the village, at a reasonable charge, for one or more SPC officers.

11. ANTICIPATED ACCOMPLISHMENT

- 11.1 With current technical manpower resources the SPC would not be able to plan and manage more than 4 reasonable sized rural water projects each year. Ideally two projects in each of two countries each year would be most convenient, but much will depend upon the size, nature and location of the projects, and to what extent local expertise is available on site.
- 11.2 Once the programme gains momentum in individual countries, a number of projects may be able to be implemented simultaneously with a minimum of supervision.
- 11.3 However, it must be appreciated that in the circumstances prevailing in the Pacific Islands, where most of the materials and equipment must be imported and then shipped locally to the site, the time lag between initial planning and design of a project and its final completion will be considerable. It may not always be possible to complete the project in the same year that it was planned.

12. TRAINING

- 12.1 Since training is an important long-term component of a programme such as this, provision will be made to hold one two-week training course in each of two countries each year in which projects are in progress. The courses will include training on windmill technology and maintenance, and the maintenance of various types of hand pumps and motorised pumps.
- 12.2 It is proposed that U.S. AID funds be used to run these courses including the procurement of consultants. The courses will complement the SPC on-the-job training of village people who are engaged in the construction of the projects.

*6 m/m
Cmnd*

13. FINANCIAL CONSIDERATIONS

13.1 EXPENDITURE OF U.S. AID FUNDS

The amount of materials and equipment used for each project would largely determine the cost of each project, and would depend upon a number of factors including population served, total area covered, type of source, topography of the area, nature of the ground, etc. There would, however, be a limit to the size and cost of each project, and it is not intended to provide water points to individual private houses. Water outlets would be provided on a community basis on an average of one outlet per two or three families, or approximately 20 people.

- 13.2 Past experience has shown that the type of water supply project this programme is designed to cover would cost in the region of \$US20,000-30,000 for the purchase of essential materials and equipment, covering communities of between 400-1500 people.

- 13.3 In addition to the purchase of expendable materials and equipment such as pipes, tanks, pumps, windmills, cement, etc., which comprise the materials necessary for the installation of each project, certain non-expendable tools and equipment would need to be purchased for common use on all projects and shipped from one project to another. Since it is likely that at least four projects will be going on simultaneously, sets of basic tools must be provided for each project. Complete water-supply hand-tool kits will cost approximately \$US2,000 each. Digging tools etc. will cost approximately another \$1,000 per project. Small portable centrifugal pump units will be required for de-watering wells under construction, at an approximate cost of \$600 each. Hand augers and a portable deep rotary manual drill will also be required. One or two small motorised cement mixers are also desirable.
- 13.4 The associated sanitation projects would necessitate the purchase of cement, timber, steel rod and mesh, and imported plastic hand-flush latrine bowls. Estimated total cost would be between \$US25-60 per family. Additional funds would be required for community showers and laundries where these are provided.
- 13.5 Because of great difficulty in obtaining transport in some of the islands, a small pick-up truck would be required for the use of the Field Supervisor to transport himself and materials to the project sites. A motor cycle would also be essential to facilitate the work of the Field Supervisor in remote atolls. These vehicles would be shipped as required from island to island.
- 13.6 U.S. AID funds would be used to employ one full-time volunteer field supervisor, and to provide for a number of short-term consultancies to run short training courses on windmill and pump technology and maintenance.
- 13.7 PROCUREMENT OF SUPPLIES. It has been found that the most expedient and convenient source of supplies for the Pacific Islands is Australia and New Zealand. The SPC is in contact with a number of companies in both countries who can supply the requirements of these projects.
- 13.8 Where the country has an effective government stores system, or a suitable retail outlet in the commercial sector, the materials will, as far as possible, be purchased locally.
- 13.9 ACCOUNTING OF SUPPLIES. All items purchased by the SPC from U.S.AID funds, whether imported from overseas or purchased directly from suppliers in the project country, will be accounted for through the SPC Finance Office and accounts of expenditure submitted annually or as required.

13.10 Each participating government will be responsible for the receipt, storage, and accounting of all materials and equipment supplied for the projects. Upon completion of the projects in each country, all serviceable equipment and any unused materials supplied will be disposed of in such manner as the Secretary-General of the SPC may direct.

13.11 PROPOSED 3 YEAR BUDGET FOR U.S. AID FUNDS

PROPOSED 3 YEAR EXPENDITURE (IN \$US)

U.S. AID FUNDS

| Items | 1980 | 1981 | 1982 |
|---|-------------------------------------|---|---|
| 1. Water Supply Projects. Expendable materials and equipment for four projects each year. | 80,000 (Av. 20,000 each project) | 100,000 (Av. 25,000 each project) | 120,000 (Av. 30,000 each project) |
| 2. Sanitation Projects. Expendable materials and equipment for four associated projects each year. | 20,000 (Av. 5,000 each project) | 24,000 (Av. 6,000 each project) | 32,000 (Av. 8,000 each project) |
| 3. Non-expendable tools and equipment including freight. | 35,000 (Initial purchase) | 3,000 (Additions, repairs, replacements) | 4,000 (Additions, repairs, replacements) |
| 4. Assistance towards subsistence and travel for national trainees. | 2,000 (Part year) | 4,000 (Full year) | 5,000 (Full year) |
| 5.) Field Supervisor (Volunteer) salary plus travel expenses <i>2nd person? basic?</i> | 15,000 (Part year) | 22,000 | 23,000 |
| 6. Purchase of one pick-up truck and one motorcycle, insurance & maintenance. | 15,000 | 1,000 | 2,000 |
| 7.) Consultants (short-term) for training courses | 3,000 (1 course) | 6,000 (2 courses) | 7,000 (2 courses) |
| 8. Incidentals and contingencies. | 2,000 | 2,000 | 2,000 |
| <u>ANNUAL TOTALS</u> | <u>172,000</u> | <u>162,000</u> | <u>195,000</u> |

EXAMPLES OF TYPICAL SYSTEMS
FOR RURAL WATER SUPPLY PROJECTS

The system adopted will depend mainly upon the following factors:-

- (i) The type of source most satisfactory and conveniently available.
- (ii) The location and topography of the project site and its distance from the source.
- (iii) The population to be provided for and the area of distribution.

In the Pacific Islands the systems employed fall under one of four basic types:-

- (i) Gravity fed reticulation systems using an upland surface water source such as a small river, stream, lake, or protected spring.
- (ii) Pumped supplies using similar sources as in (i) but where the source is at a low level and the water has to be pumped to an elevated storage tank or reservoir.
- (iii) Pumped supplies using a groundwater source such as a shallow well, deep well, or infiltration gallery.
- (iv) Rainwater catchment, when other sources of fresh water are either limited, unreliable, or not available.

Examples of these systems are shown in the following sketches:-

1. GRAVITY FED SYSTEM FROM AN UPLAND PROTECTED SPRING
ANNEX 1A (Diagram Nos. 1, 2, 3, 3A, 4 and Design Data)

These are details of a project constructed to provide a piped water supply to a very remote village on the main island of Upolu, Western Samoa. The water source was a protected spring. It is typical of similar gravity fed systems in the Pacific Islands. The total cost was nearly \$US20,000.

2. EARTHFILL DAM BUILT ACROSS VALLEY TO FORM IMPOUNDING RESERVOIR
ANNEX 1B (Diagram No. 1 and Diagram No.2)

In some islands it is possible to put a small earthfill dam across a valley in which a small stream flows to form an impounding reservoir from which the water can be pumped, or if at a high level can be gravity fed to a village. Cost around \$US10,000.

3. PROTECTED SPRINGS
ANNEX 1C (Diagram No.1)

Freshwater springs and outcroppings are a useful source of water in many of the Pacific Islands, especially when they occur on elevated ground. Provided spring water has been filtered through at least twelve feet of soil it has usually been freed of harmful bacteria. Risk of contamination arises if the spring water is allowed to flow over the ground before collection. To prevent this, there are various ways of protecting the "eye" of the spring by digging back into the hillside to form a collecting chamber and then piping the water out to a storage reservoir.
Cost approximately \$US3,000-5,000.

4. PUMPED SUPPLIES USING A GROUNDWATER SOURCE
ANNEX 1D (Diagram Nos. 1, 2, 3, 4 and Design Data)

These diagrams provide details of a project which has been planned for one of the Tuvaluan atolls. Groundwater, which is plentiful on one atoll islet, will be piped across a shallow reef to another islet on which the main village is situated and where the groundwater is brackish. Hand pumps will be used in the first instance on the village side, but these will later be replaced by a windmill pump installed over the well to lift the water to an elevated storage tank for gravity reticulation.
Cost approximately \$US20,000.

5. PROTECTED SHALLOW AND DEEP WELLS WITH HAND PUMPS
ANNEX 1E (Diagram Nos. 1, 2, 3, 4, 5)

Shallow and deep wells provided with hand pumps are commonly used to exploit groundwater resources in the Pacific Islands. The systems range from shallow dug wells and driven wells equipped with simple "pitcher spout" displacement pumps having the pump cylinder incorporated in the body of the pump, to deeper dug wells or bore holes equipped with a deep well pump assembly where the pump cylinder is suspended in the body of the well. On atolls and low islands where the fresh water lens is shallow and fragile, it may be necessary to incorporate a skimming basin at the bottom of the well to prevent overpumping and consequent salt water intrusion. Where continuous gentle pumping is required to deliver water to storage cisterns, a windmill pump may be used.
Costs vary from \$US5,000 to 20,000 depending on size of project, depth of groundwater and type of pump.

6. RAINWATER CATCHMENT AND STORAGE
ANNEX 1F (Diagram No.1)

Rainwater collection is an important means of obtaining fresh water in the Pacific Islands - quite often the only available source on small atolls. It is often the preferred source for domestic purposes by the village people. Although most island communities possess a few large buildings with iron roofs such as churches, schools, clinics, meeting houses, etc., the possible catchment areas are rarely used to full capacity. Finances are not available to purchase the necessary materials to construct a proper rainwater catchment and storage system, and often the technical expertise is not available locally to design and construct an efficient system.

Systems which have been constructed, even under government or local council supervision, often have many defects, and the water is exposed to gross contamination, not to mention mosquito breeding. Roof washers, sand filters, or separators to protect the tank against entry of the first dirty roof washings are rarely installed. Tanks are often not properly protected and not watertight, which permits leakages or infiltration to occur.

Most of the large community storage tanks are constructed of concrete or cement block partially underground, but are not provided with suitable means for drawing off water. The water is often drawn by bucket, and this leads to contamination. The galvanised iron tanks commonly used on smaller installations have a very short life due to corrosion resulting from improper assembly or lack of suitable internal and external protective coating. In the rural areas there is an urgent need for instruction on tank building, catchment design and routine maintenance.

Costs vary depending on population served and storage capacity required. Rural projects usually from \$US5,000 to 25,000.

DIAG. N°1.
MAIN PIPELINES.

SOURCE. (EST. ELEV. 180 m.)
A

A - B. 1400 m (EST)
B - C. 400 m (EST)
D - E. 1200 m (EST)

2" G.I. PIPE.
ALONG ROAD

TANK

B (ELEV. 40 m)

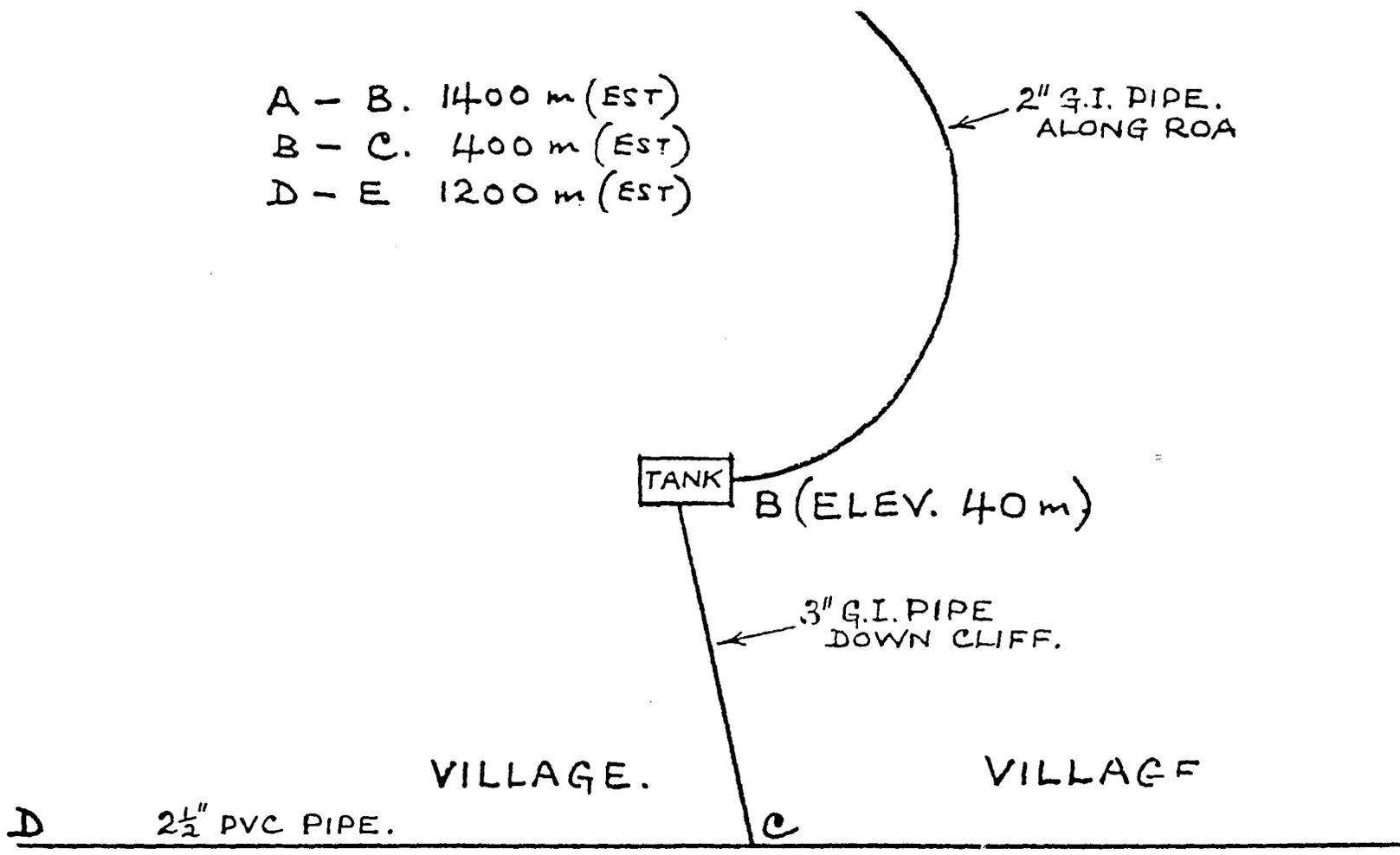
3" G.I. PIPE
DOWN CLIFF.

VILLAGE.

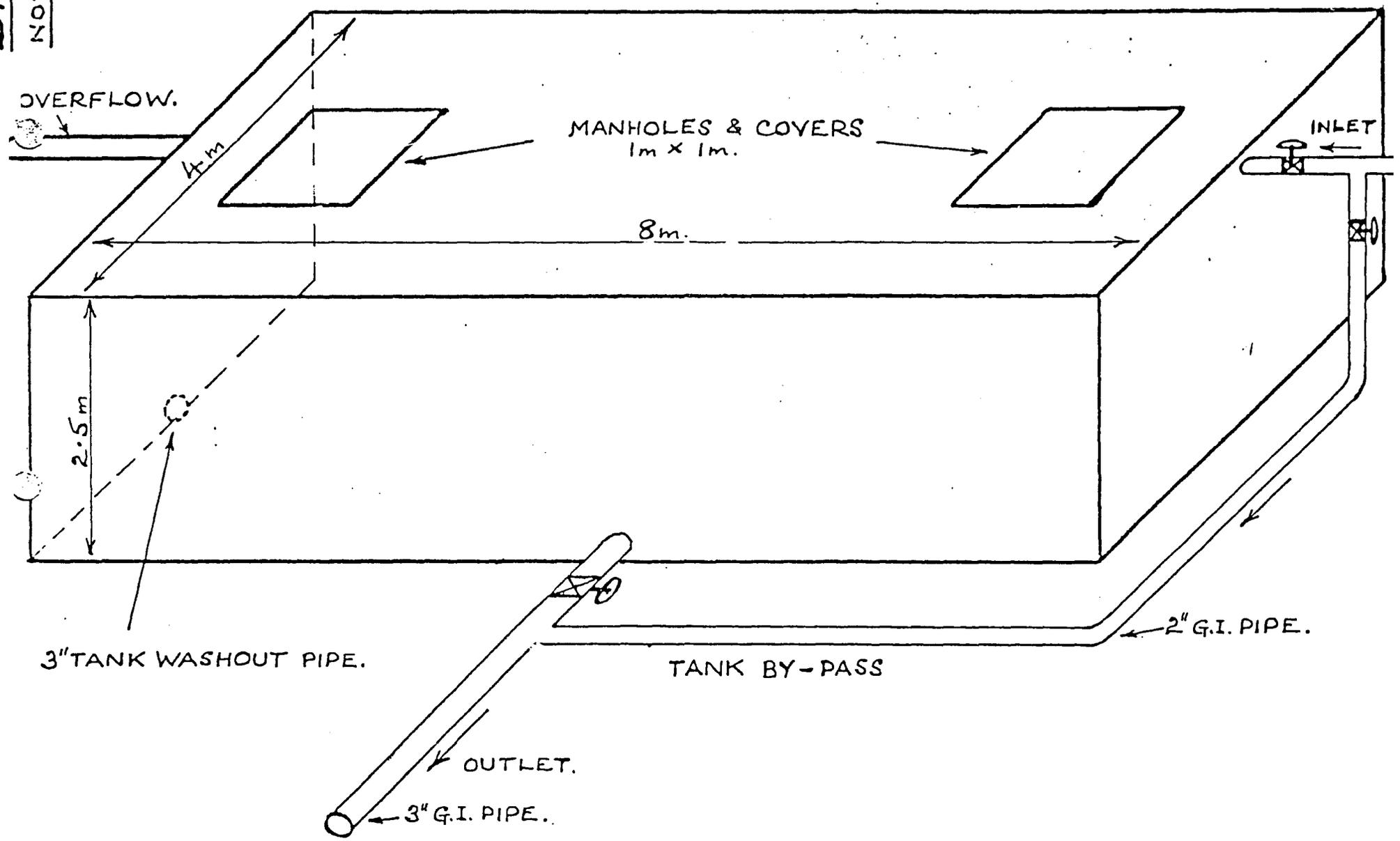
VILLAGE F

D 2 1/2" PVC PIPE.

SEASHORE.



DIAG. N^o 2
NOT TO SCALE



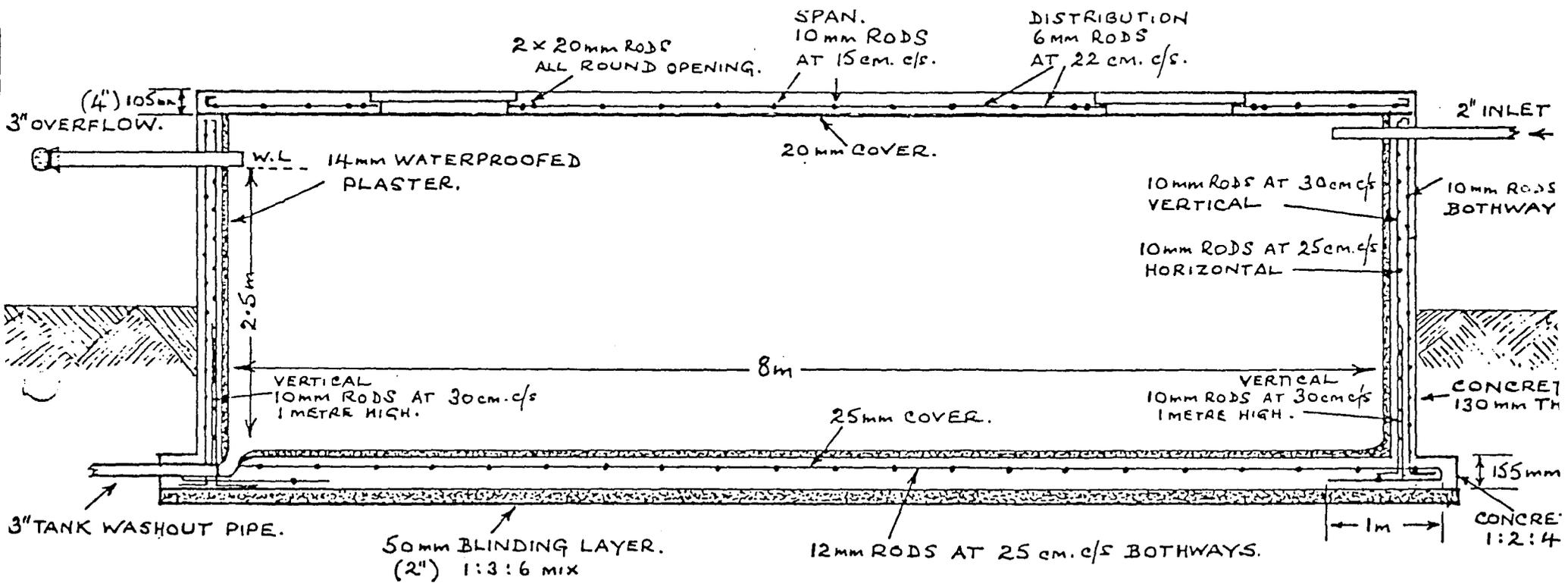
DIAG. N^o3.
NOT TO SCALE

TANK DETAILS.

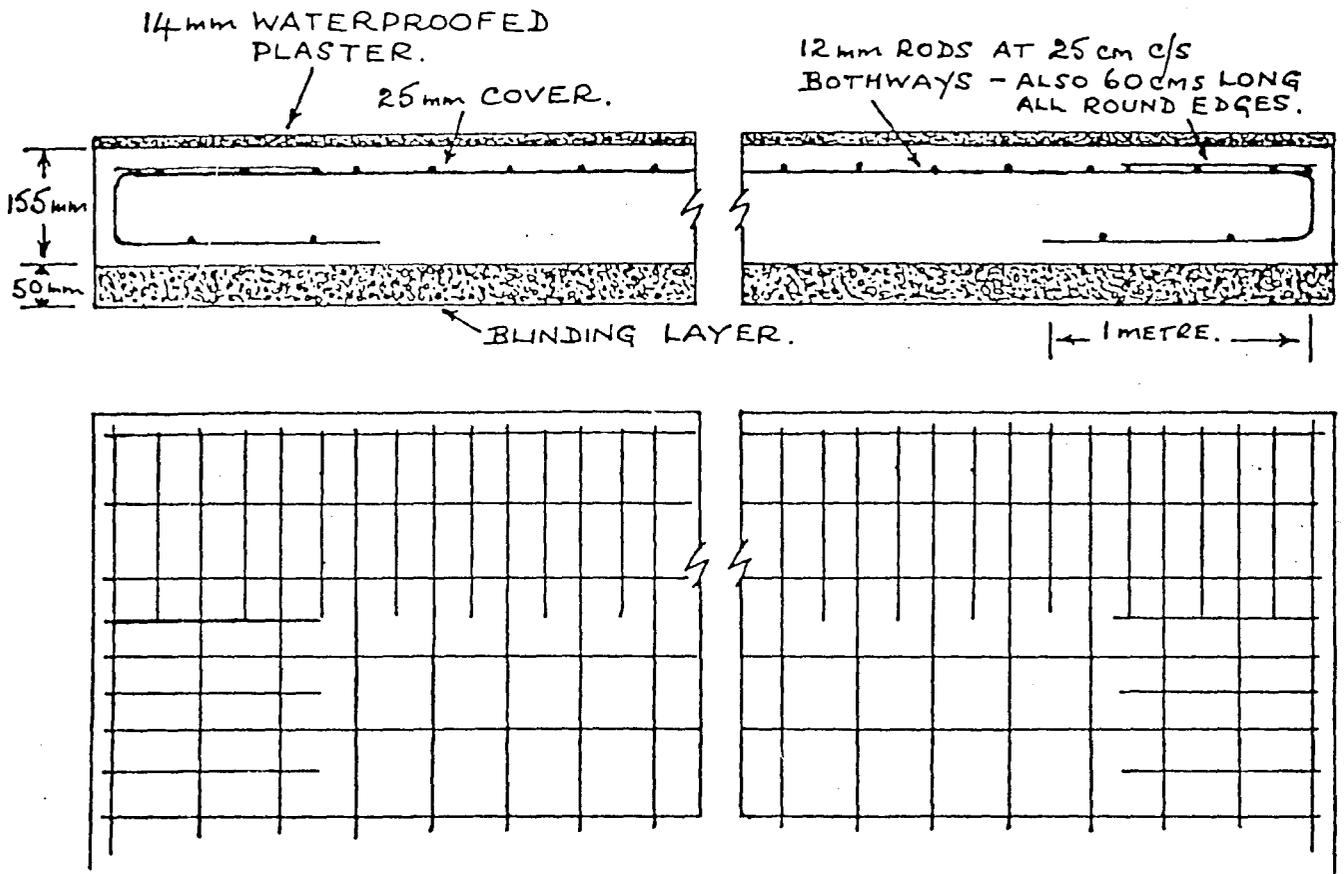
LONGITUDINAL SECTION.

INTERNAL MEASUREMENTS.

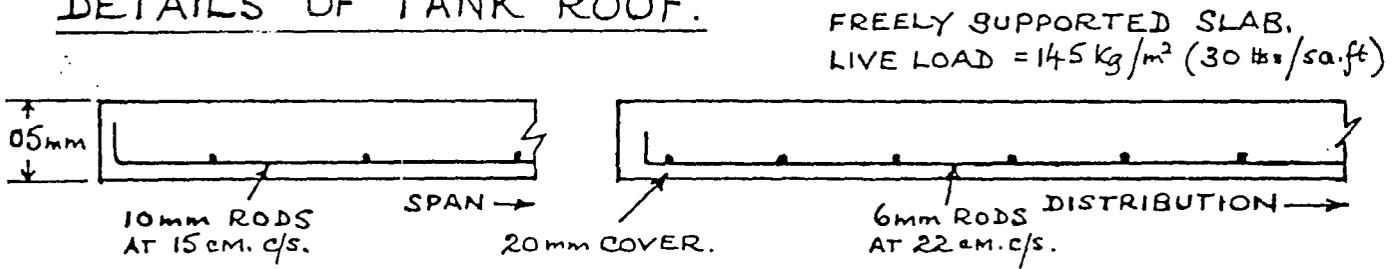
LENGTH. - 8 METRES.
WIDTH. - 4 METRES.
DEPTH. - 2.5 METRES (FROM W.L.)



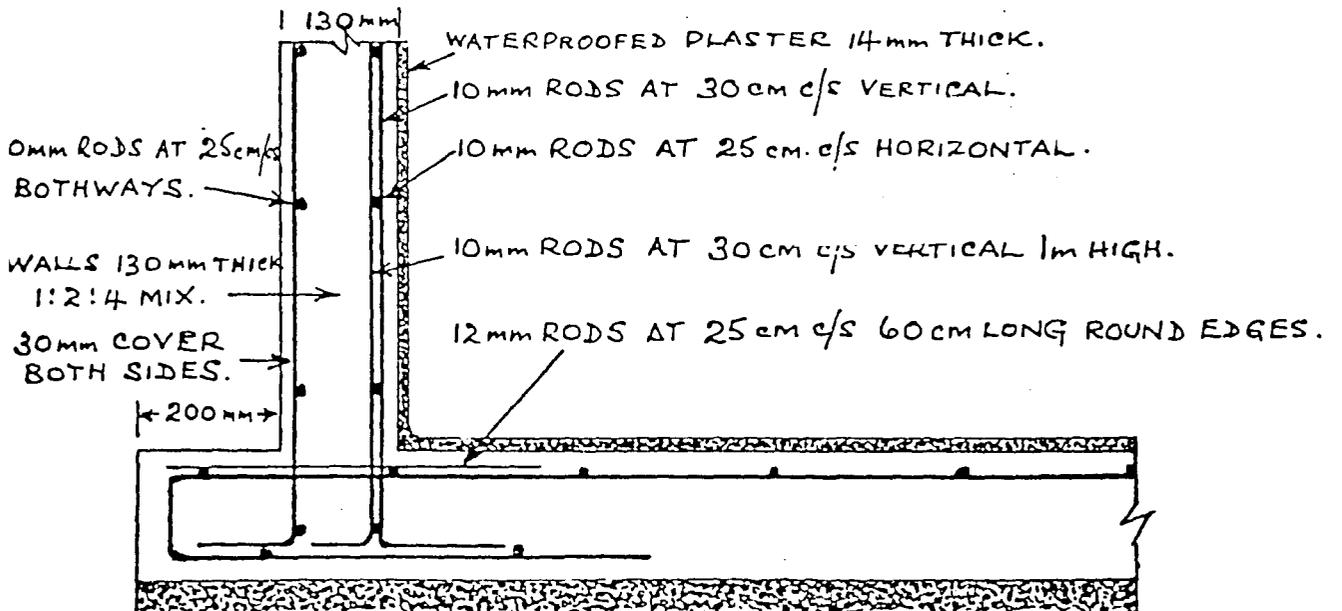
DETAILS OF TANK FLOOR SLAB.



DETAILS OF TANK ROOF.

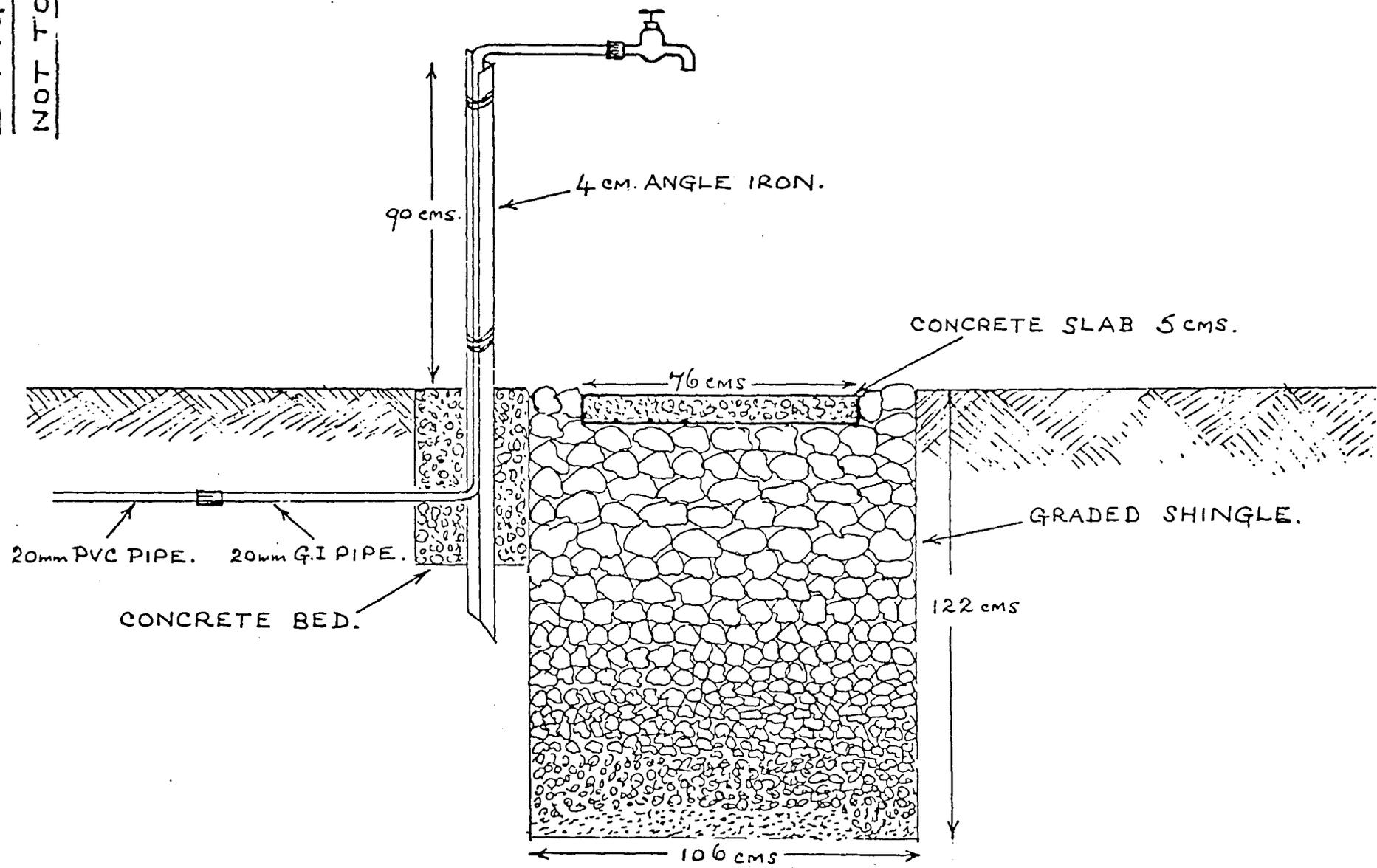


DETAILS OF WALLS.



DETAILS OF STANDPIPE AND SOAKAWAY.

ANNEX 1A.
DIAG. N° 4
NOT TO SCALE



DESIGN DATA

| | |
|--|--------------------------------------|
| POPULATION | 400 |
| CONSUMPTION PER CAPITA | 200 litres/day |
| TOTAL DEMAND | 80,000 litres/day |
| TOTAL NUMBER OF TAPS AND OUTLETS | 40 |
| MAXIMUM NUMBER OPEN SIMULTANEOUSLY | 18 |
| PEAK DEMAND (at 10 litres/minute/tap) | 180 litres/minute 3 litres/second |
| ELEVATION OF WATER SOURCE | 180 metres (est) |
| ELEVATION OF WATER TANK | 40 metres (est) |
| HEAD AVAILABLE | 140 metres |

DISTRIBUTION

| | |
|---|------------------------------------|
| 1. LENGTH OF PIPE FROM SOURCE TO TANK (A-B) | 1,400 metres (est) |
| HEAD LOSS (2" G.I. PIPE) | 10m/100m |
| FLOW TO TANK (FROM CHART) | 3.4 l/sec. 12,240 l/hr. |
| SIZE OF TANK | 80 m ³ 80,000 litres |
| TIME TO FILL TANK | 6 $\frac{1}{2}$ hours |
| 2. LENGTH OF PIPE FROM TANK TO VILLAGE (B-C) | 400 metres (est) |
| HEAD AVAILABLE | 40 metres |
| HEAD LOSS (6 l/sec) (3" G.I. PIPE) | 3m/100m |
| RESIDUAL HEAD | 28 metres |
| 3. LENGTH OF VILLAGE MAIN (D-E) (2 x 600m) | 1,200 metres |
| HEAD LOSS (3 l/sec) (2 $\frac{1}{2}$ " PVC C.I.B PIPE) | 1m/100m 6m BRANCH |
| RESIDUAL HEAD AT 3/4" SERVICE BRANCHES | 22 metres |

ALTERNATIVELY USING 2" PVC CL.B PIPE

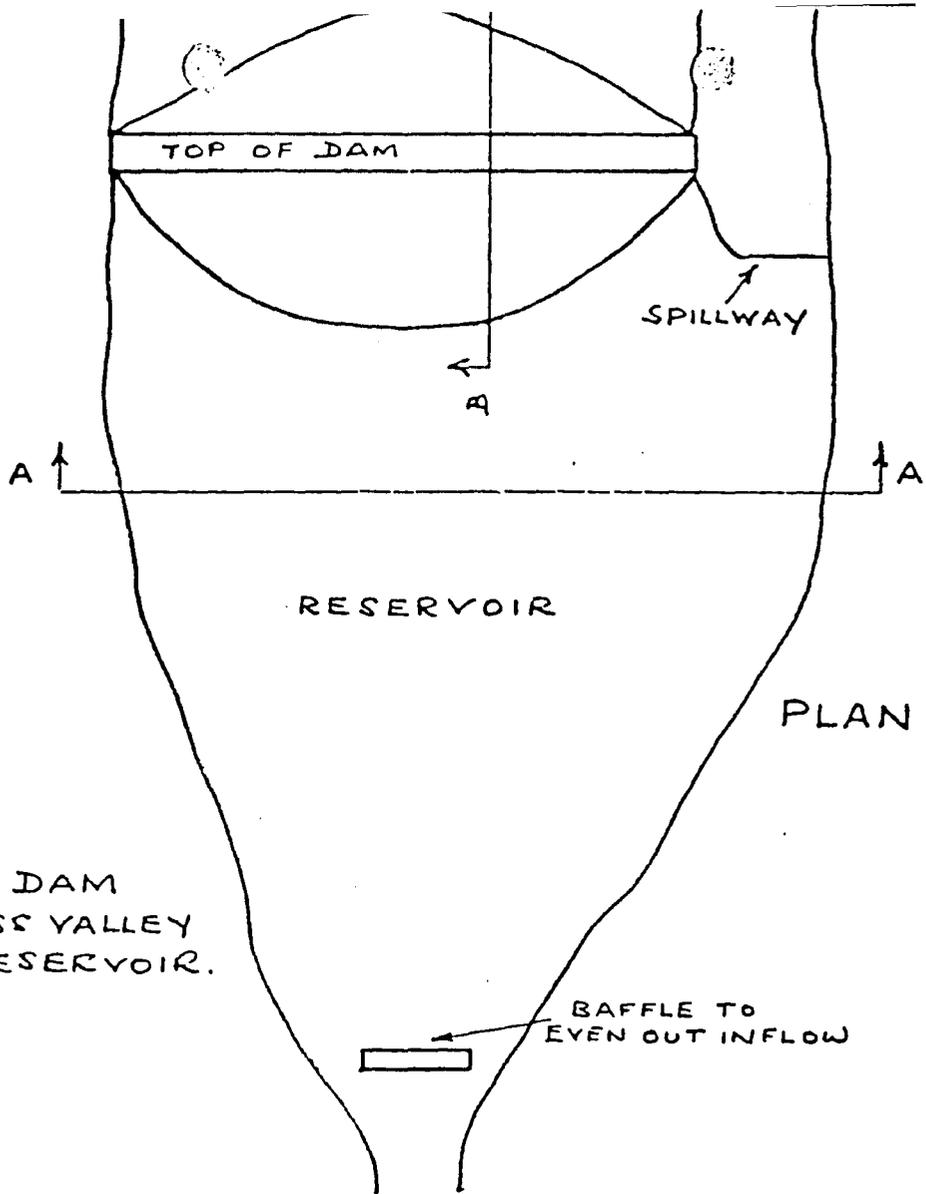
HEAD LOSS (3 l/sec)

3.5m/100m

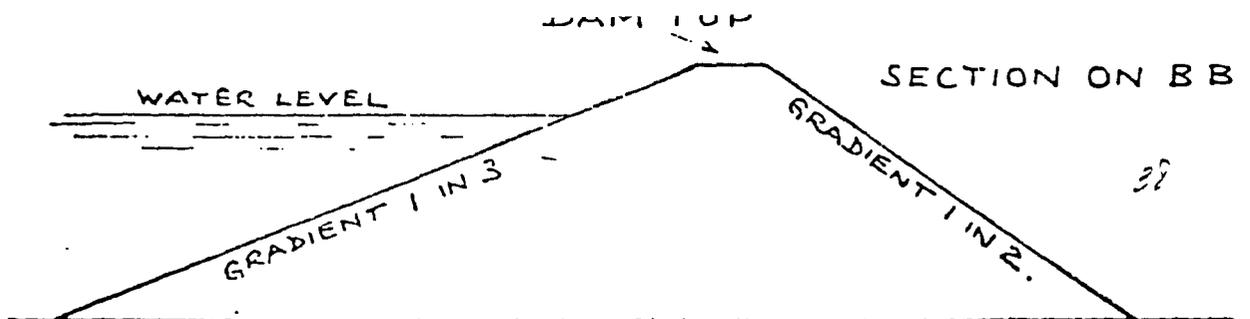
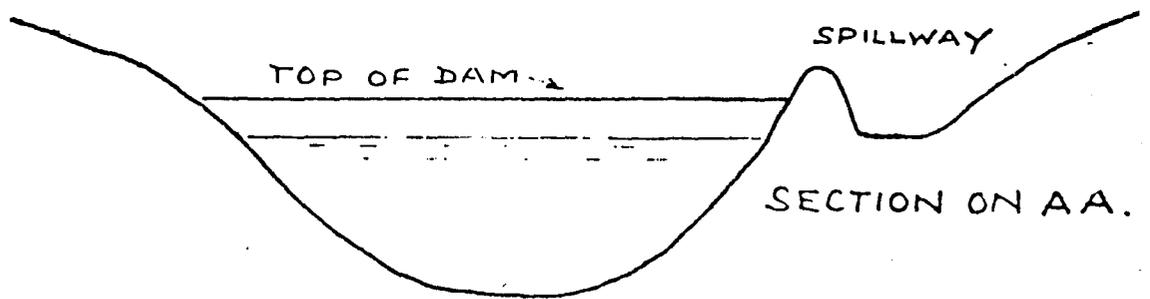
RESIDUAL HEAD AT 3/4" SERVICE BRANCHES

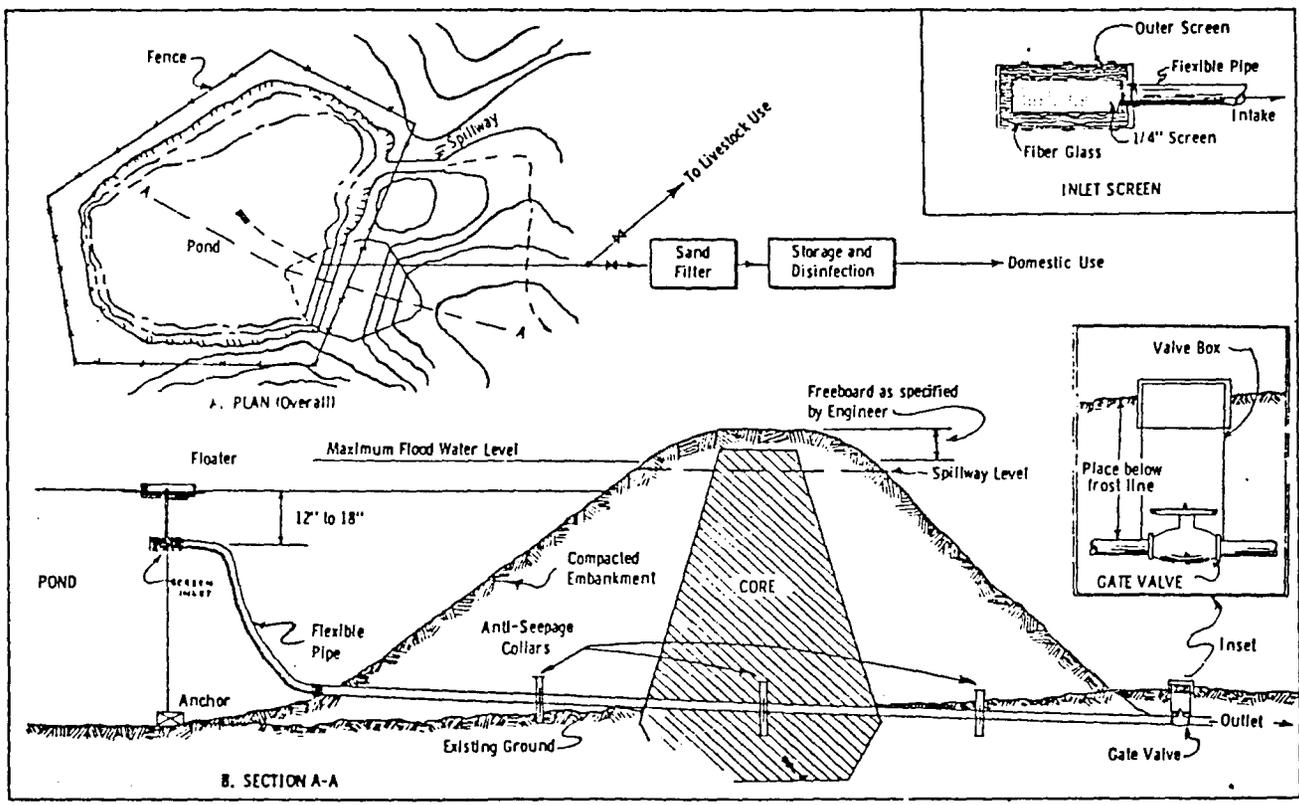
7 metres

2½" PIPE RECOMMENDED

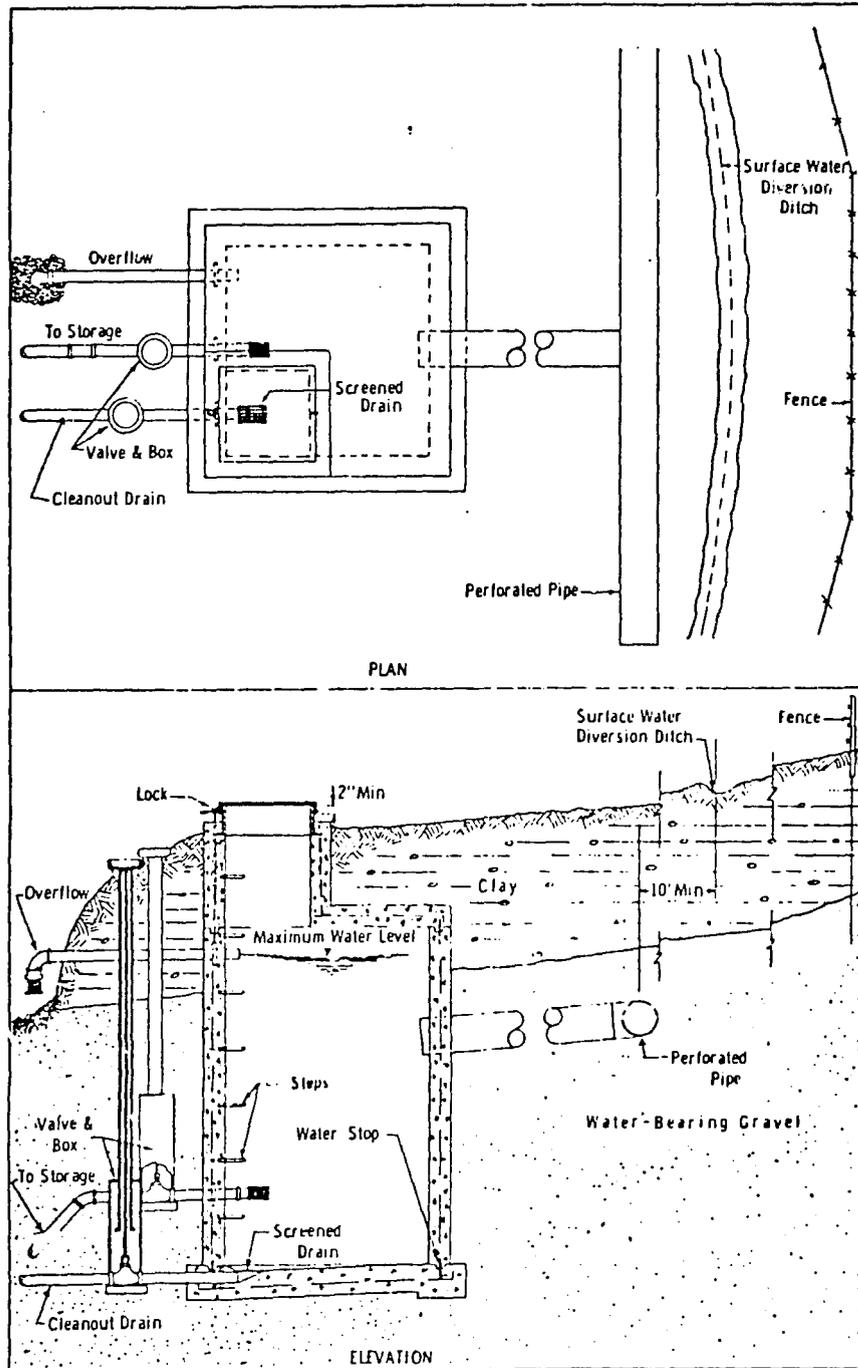


EARTHFILL DAM
BUILT ACROSS VALLEY
TO FORM RESERVOIR.





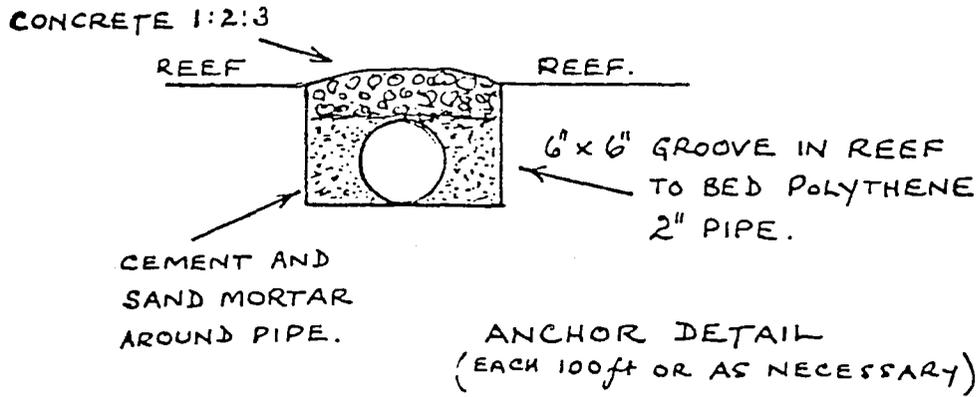
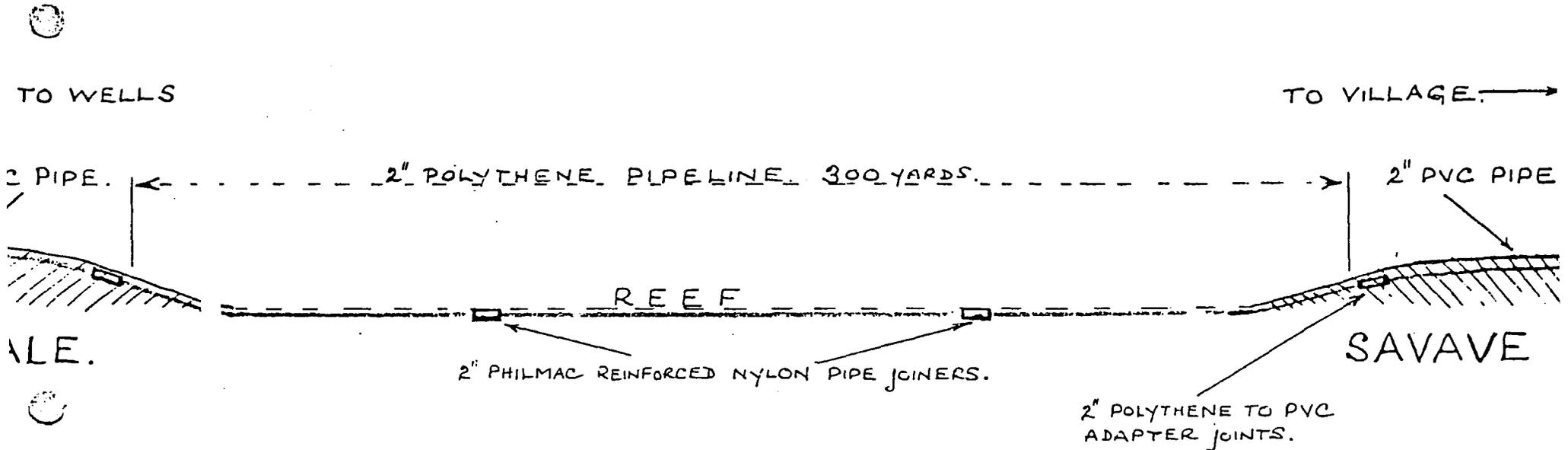
DIAG No 2.



Spring Protection.

NOT TO SCALE

DETAIL OF PIPELINE ACROSS REEF.



IMPROVEMENT OF EXISTING WELL.

FIG. 2.
NOT TO SCALE

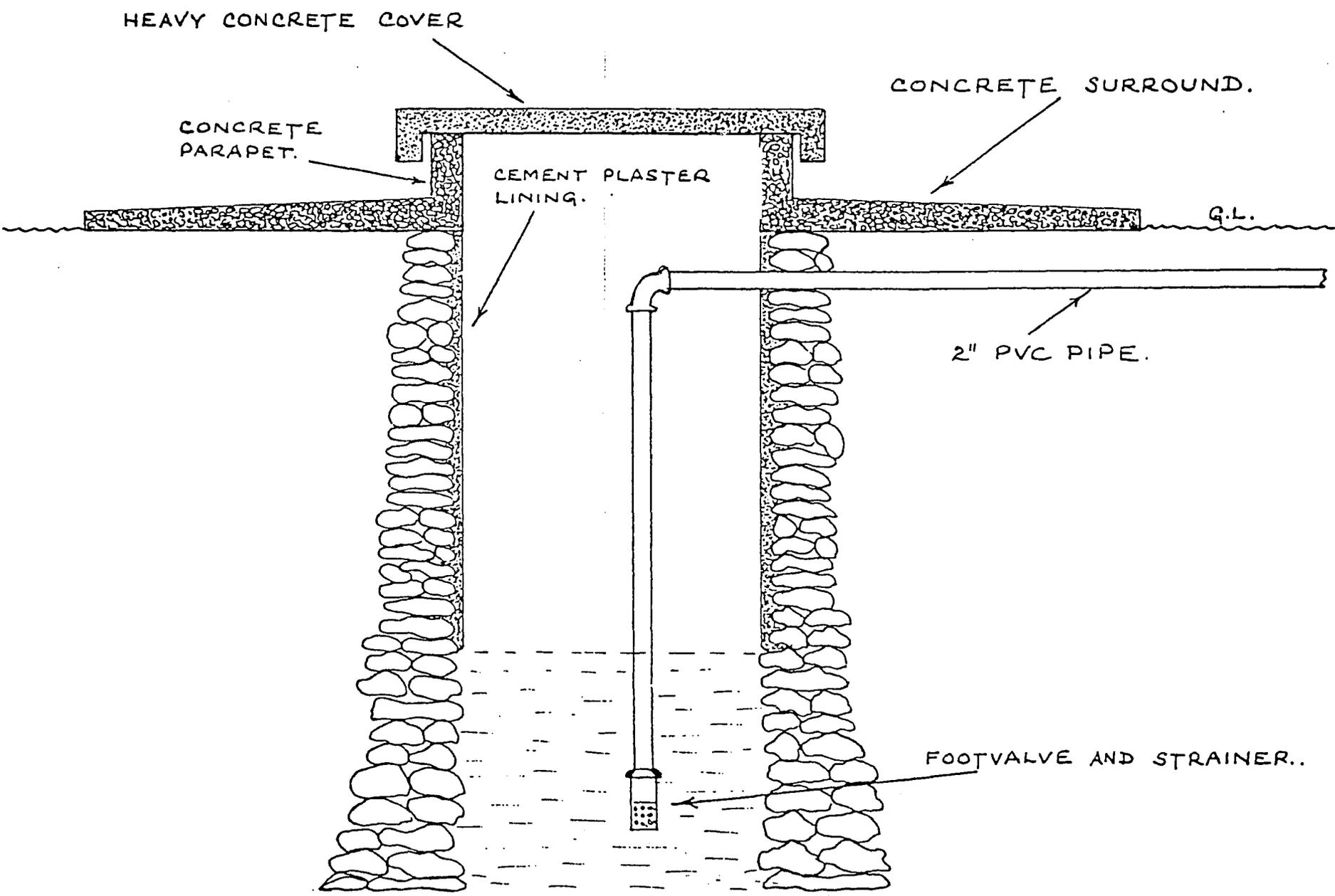


FIG. 3

NOT TO SCALE

DETAIL OF HANDPUMP AND SOAKAWAY

DIAPHRAGM
HANDPUMP

2" GI PIPE.

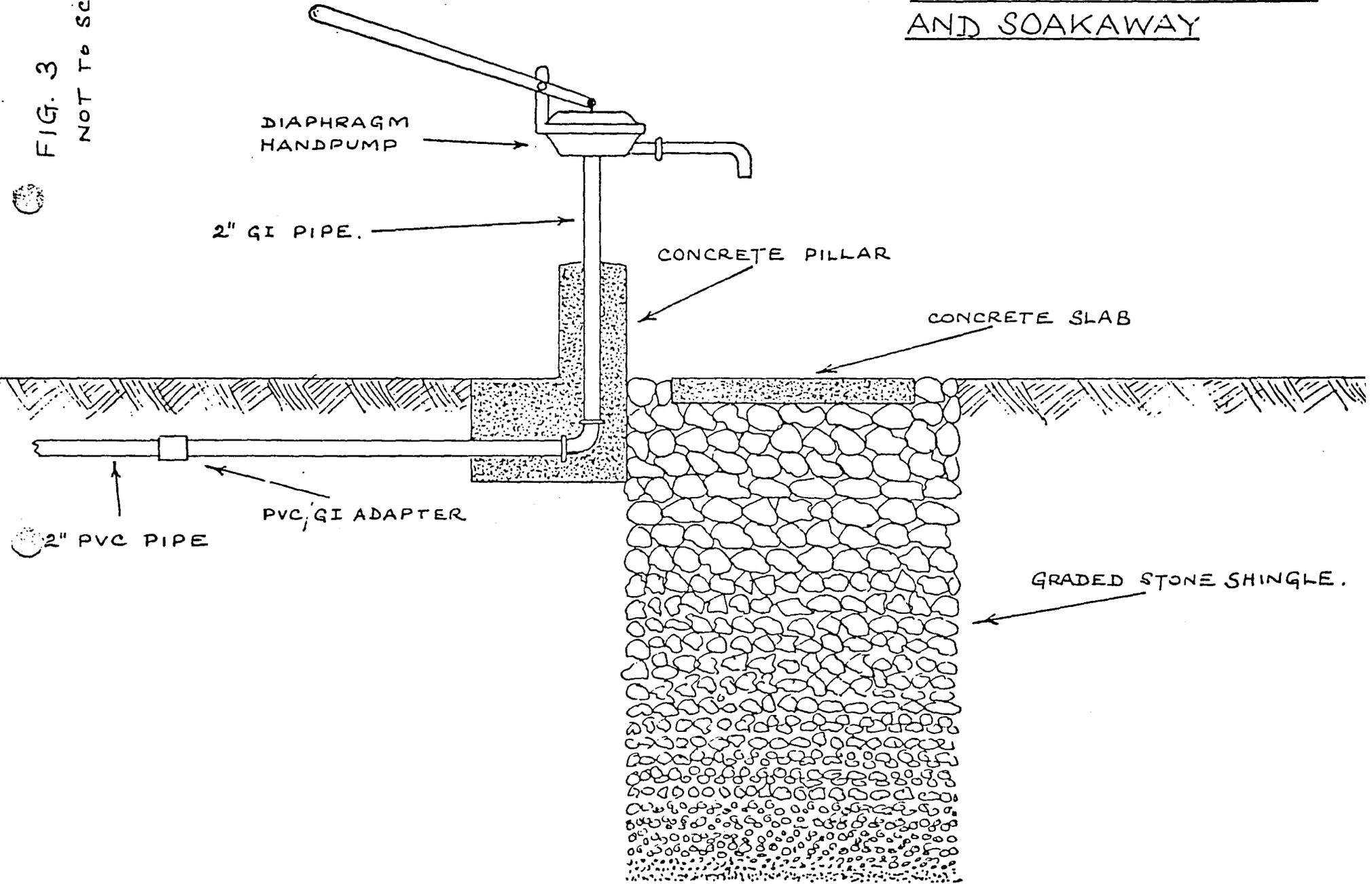
CONCRETE PILLAR

CONCRETE SLAB

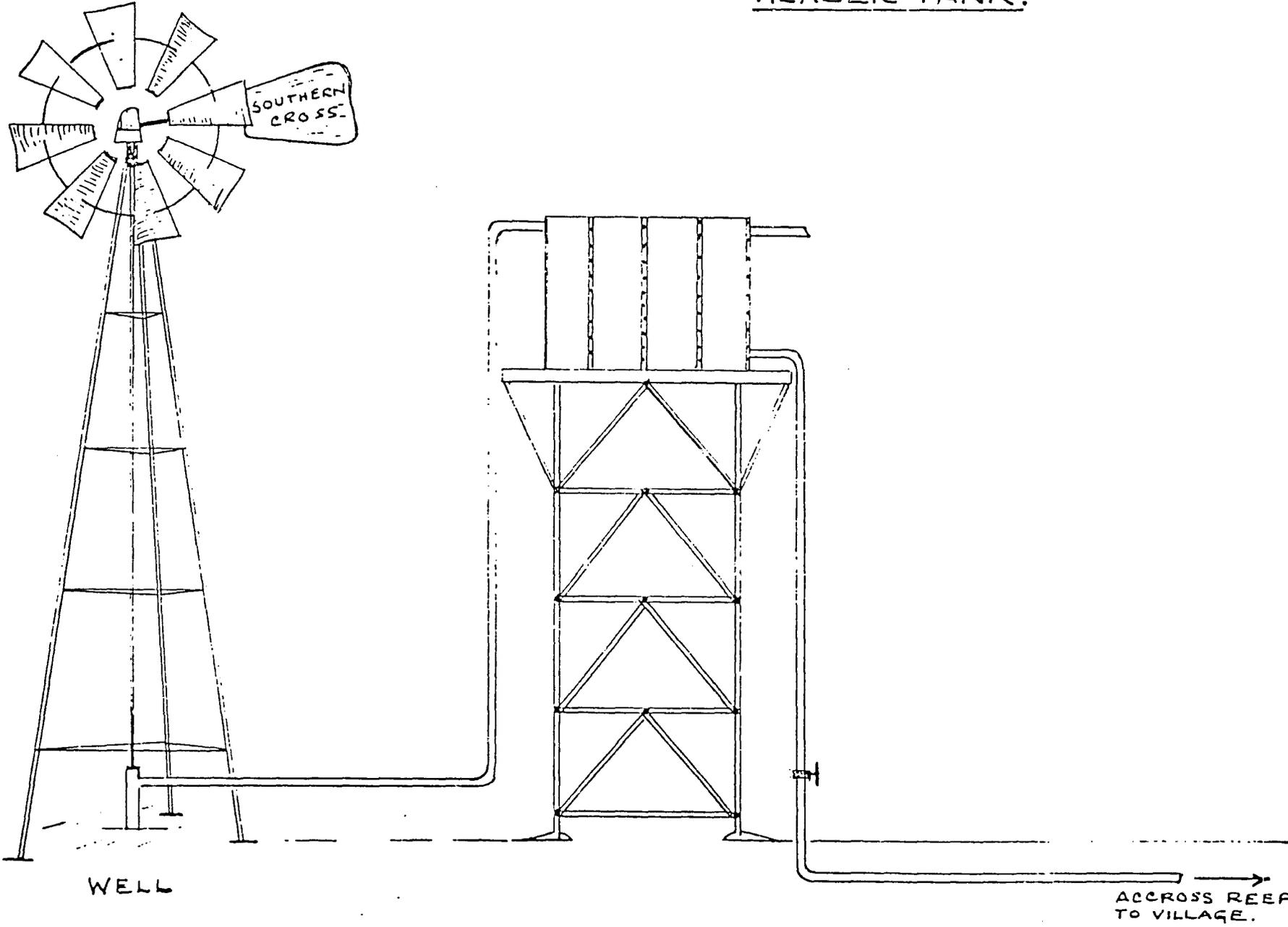
PVC/GI ADAPTER

2" PVC PIPE

GRADED STONE SHINGLE.



WINDMILL PUMP AND
HEADER TANK.



DESIGN DATA

| | |
|------------------------|----------------|
| Population | 700 |
| Consumption per capita | 3 galls/day |
| Total demand | 2100 galls/day |
| Depth of well (GL/WL) | 9 ft. |

HANDPUMPS

| | |
|---|--------------|
| Southern Cross Mark KDC Diaphragm pump | 2 |
| Pump capacity | 5 galls/min |
| Maximum demand | 10 galls/min |
| Total pumping hours require | 7 hours |

WINDMILL PUMP

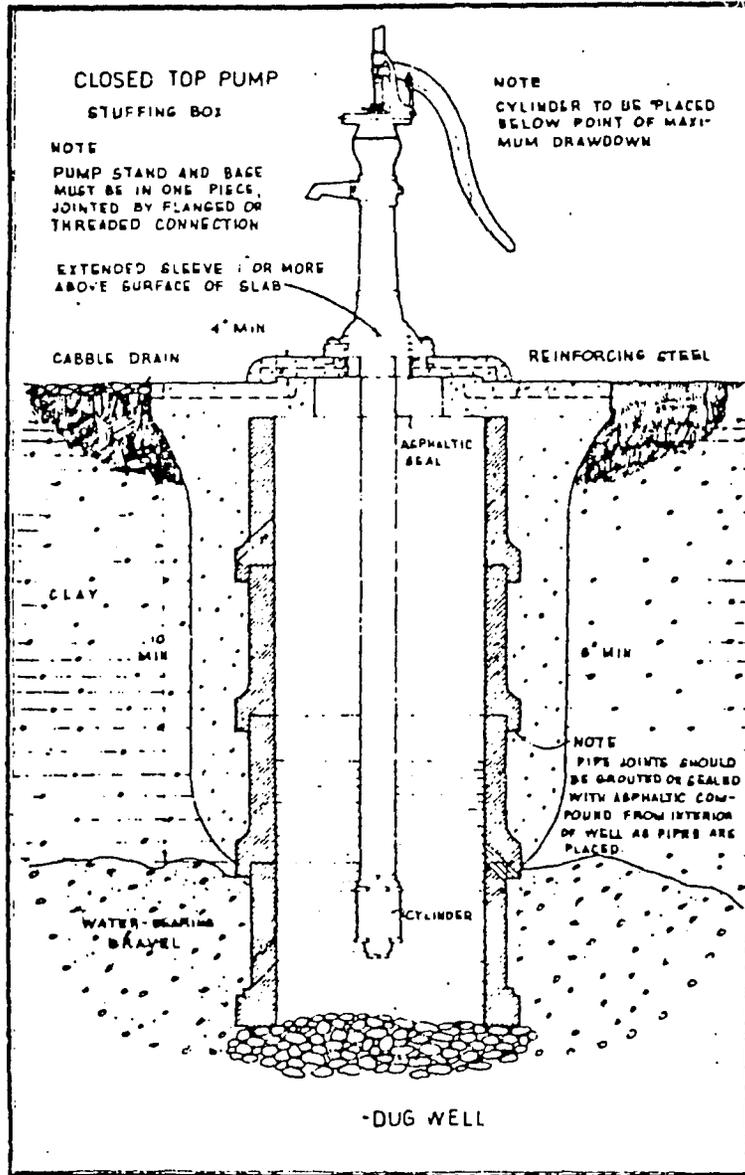
| | |
|---|----------------|
| Southern Cross IZ Windmill 8'0" mill on 40'0" tower 2.75" pump cylinder Average pumping capacity | 2100 galls/day |
|---|----------------|

STORAGE TANK

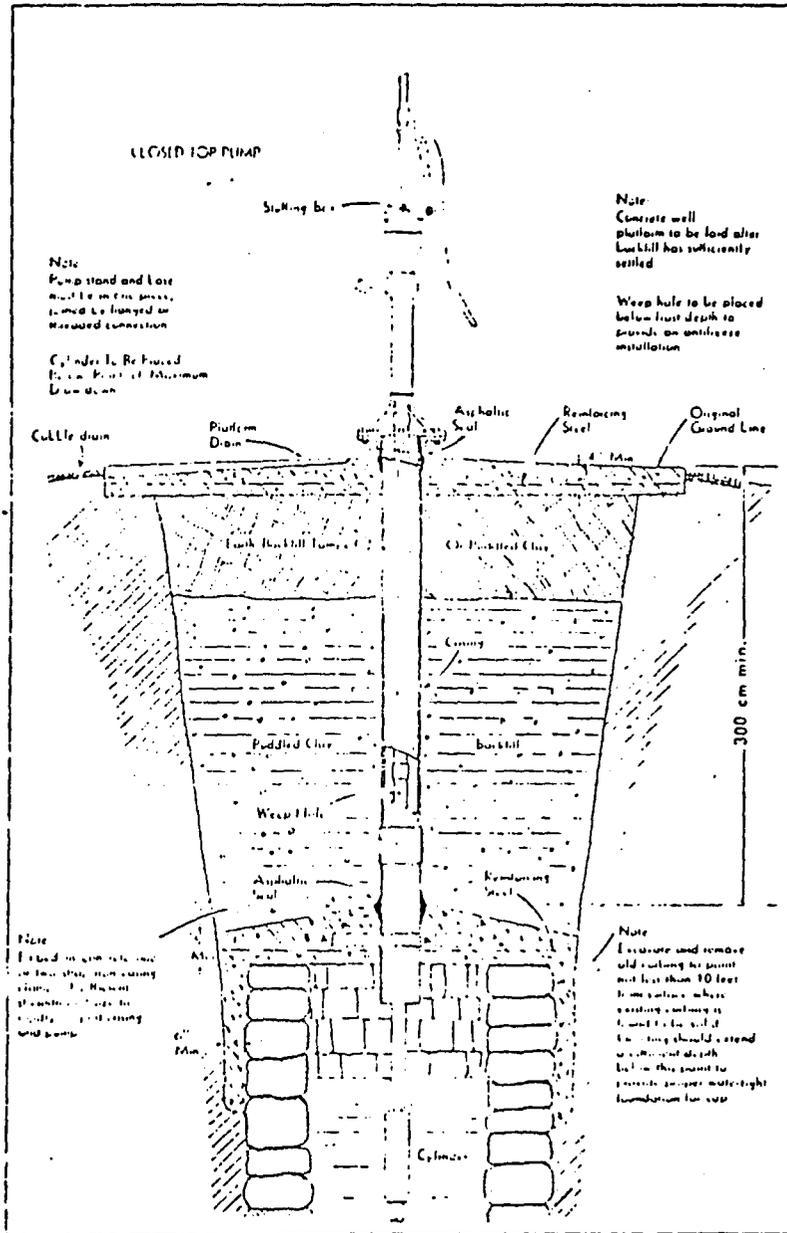
| | |
|--|---------------------|
| Southern Cross P/B Squatter type | 2500 galls capacity |
| Elevation (on Southern Cross GYE tankstand) | 30 ft. |
| Total lift | 45 ft. |

DISTRIBUTION

| | |
|---|-----------------------------|
| Length of pipe from well source to village handpumps/standpipes | 600 yds. |
| N° of taps | 4 |
| Peak demand (2.5 galls/min/tap) | 10 galls/min |
| Head Loss 2" Polythene/PVC pipe | 7.2 ft. (0.4 ft/100 ft.) |
| Depth of well (G.L. to W.L.) | 9 ft. |
| Residual head at taps | 22 ft. |
| Suction head at handpumps | 20 ft. |

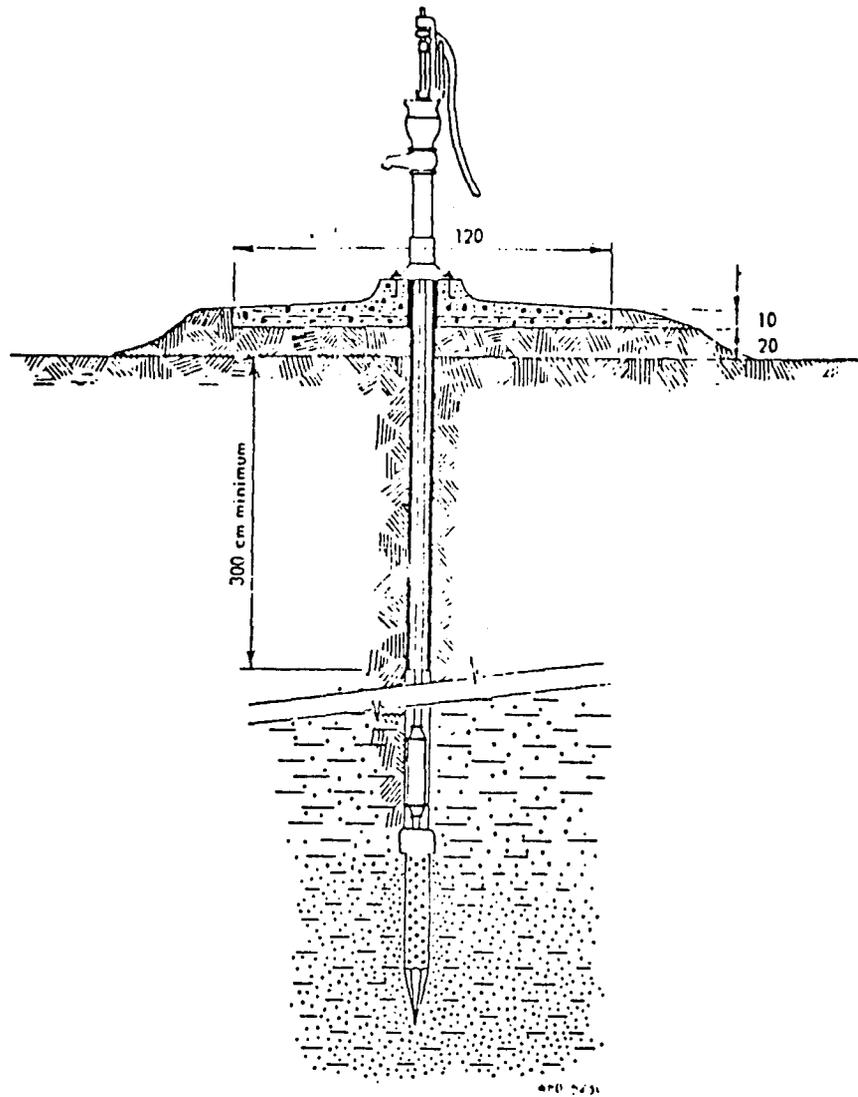


RECONSTRUCTED DUG WELL WITH BURIED SLAB

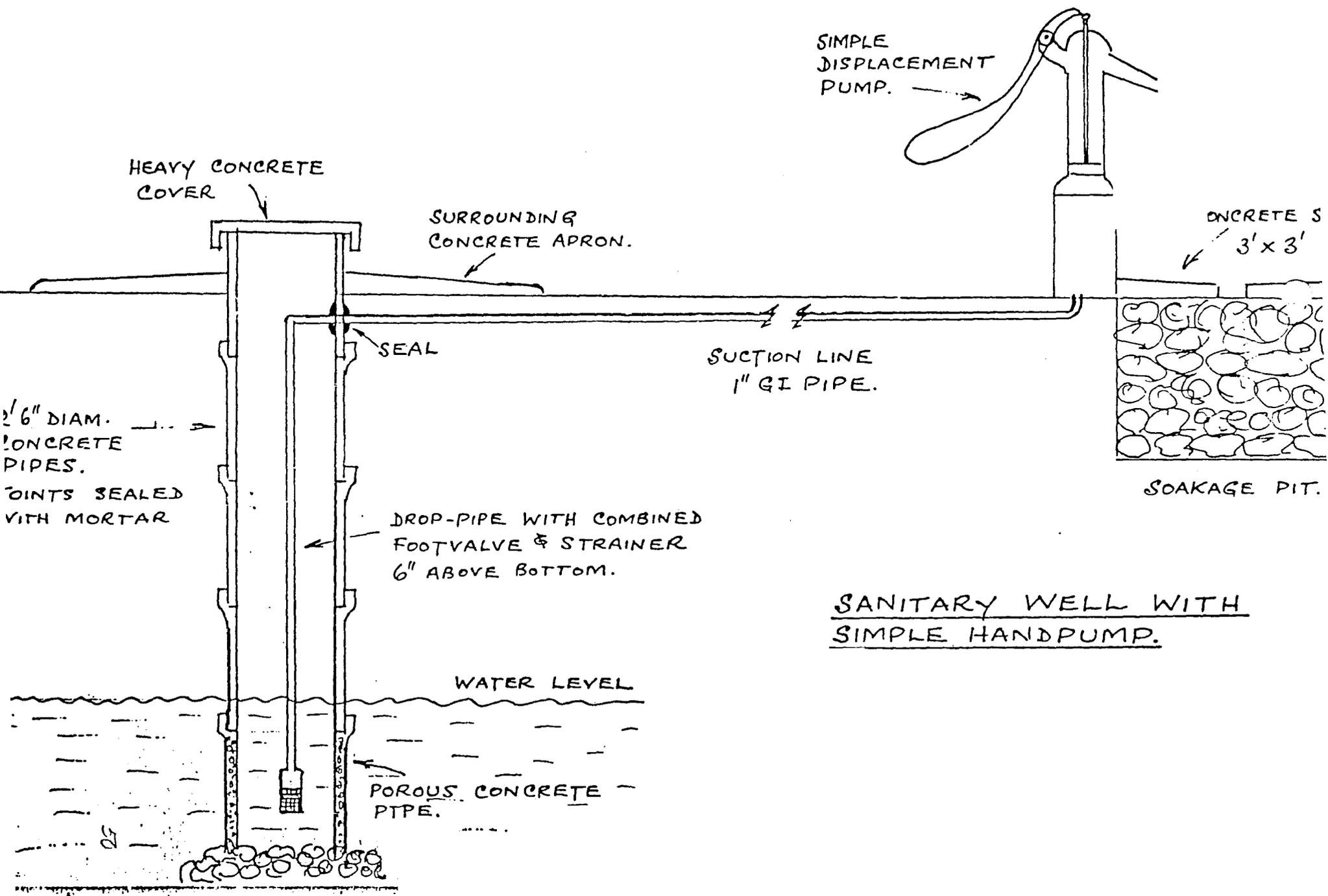


Reproduced from US Public Health Service Joint Committee on Rural Sanitation (1950) *Individual water supply systems*, Washington, p. 25

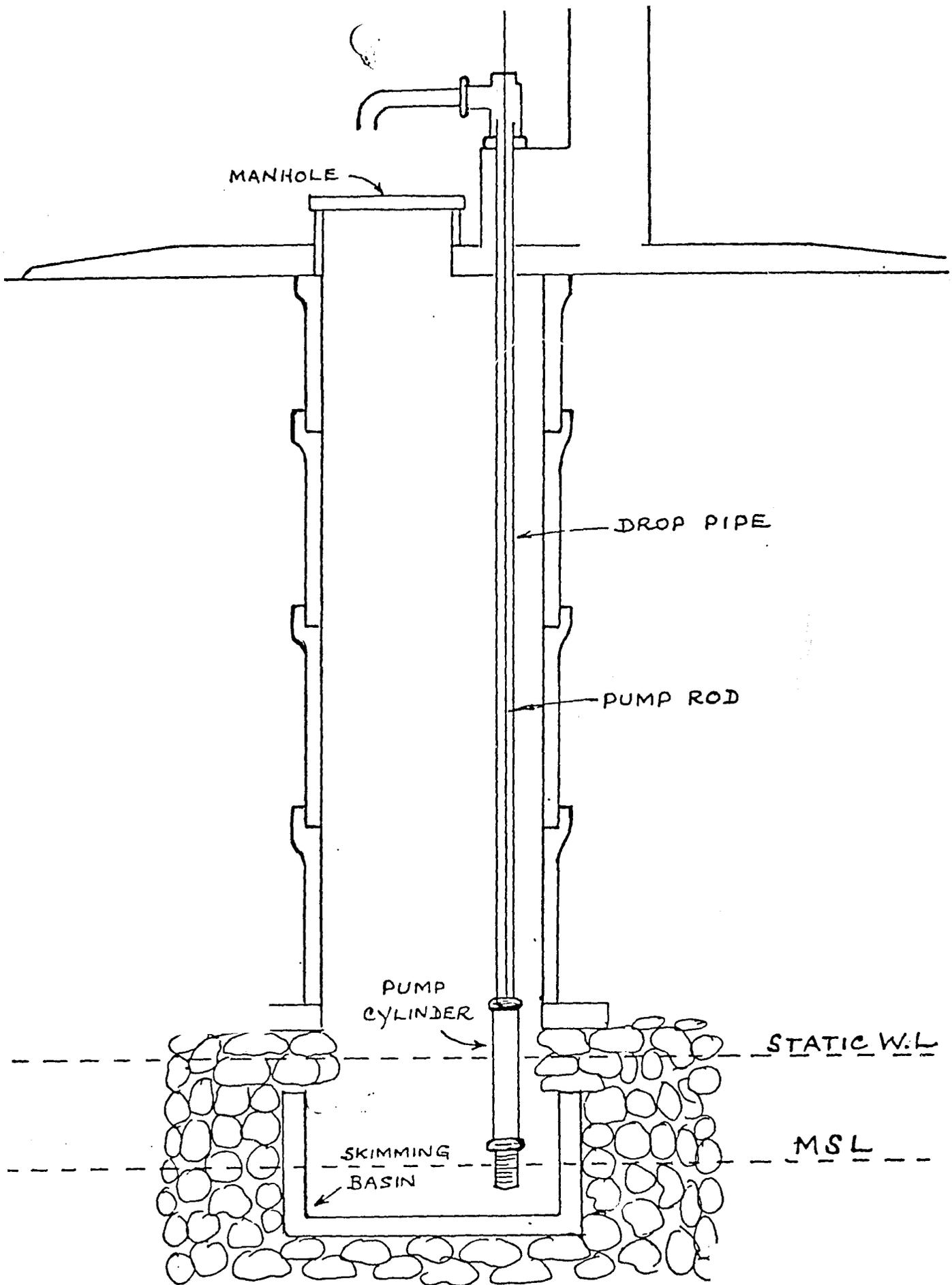
DRIVEN WITH DROP-PIPE AND CYLINDER AND PROTECTIVE
PLATFORM



In areas with relatively coarse sand, driven wells can be an excellent and very cheap means of obtaining water. They can be driven rapidly and put into operation quickly. With proper technique, this well can be developed to increase its capacity. Note the water-tight casing which extends down to a minimum of 3 m (10 ft) below ground surface.



SANITARY WELL WITH SIMPLE HANDPUMP.



SHALLOW WELL WITH
DEEPWELL HANDPUMP
AND SKIMMING BASIN