

パイプ敷設工 (PVC φ125) 単価表

一金 6.64 F\$

名 称	数 量	単 位	1 m 当り		備 考
			単 価	金 額	
			F\$	F\$	
掘 削	1.03	"	1.20	1.23	
埋戻し	0.93	"	2.00	1.86	
砂	0.09	"	10.00	0.90	
転 圧	1.02	"	2.00	2.04	
特殊作業員	0.016	人	20.00	0.32	
普通作業員	0.016	"	12.00	0.19	
雑材料	1.00	LS		0.10	
計				6.64	

パイプ敷設工 (PVC φ75) 単価表

一金 5.07 F\$

名 称	数 量	単 位	1 m 当り		備 考
			単 価	金 額	
			F\$	F\$	
掘 削	0.75	"	1.20	0.90	
埋戻し	0.66	"	2.00	1.32	
砂	0.09	"	10.00	0.90	
転 圧	0.75	"	2.00	1.50	
特殊作業員	0.013	人	20.00	0.26	
普通作業員	0.013	"	12.00	0.15	
雑材料	1.00	LS		0.04	
計				5.07	

単価表

一金 F\$

名 称	数 量	単 位	(単価番号 号)		備 考
			単 価	金 額	
			F\$	F\$	

スルースバルブ据付工 (φ300) 単価表

一金 61.08 F\$

(単価番号 16号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
配管工	1.80	人	20.00	36.00	
普通作業員	2.09	"	12.00	25.08	
計				61.08	

同 上 (φ250) 単価表

一金 47.92 F\$

(単価番号 17号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
配管工	1.37	人	20.00	27.40	
普通作業員	1.71	"	12.00	20.52	
計				47.92	

同 上 (φ200) 単価表

一金 37.48 F\$

(単価番号 18号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
配管工	1.10	人	20.00	22.00	
普通作業員	1.29	人	12.00	15.48	
計				37.48	

同 上 (φ150) 単価表

一金 26.92 F\$

(単価番号 19号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
配管工	0.80	人	20.00	16.00	
普通作業員	0.91	人	12.00	10.92	
計				26.92	

道路横断工 (No. 1) 単価表

一金 424.85 F\$

(単価番号 20号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
鉄筋コンクリート	2.17	m ³	94.00	203.98	
均しコンクリート	0.31	m ³	87.00	26.97	
砕 石	0.92	m ³	18.50	17.02	
型 枠	9.72	m ²	7.00	68.04	
砂	1.04	m ³	10.00	10.40	
鉄 筋	64.77	m ³	0.44	28.49	
掘 削	24.96	kg	1.20	29.95	
埋戻し	20.00	m ³	2.00	40.00	
計				424.85	

道路横断工 (No. 2) 単価表

一金 282.95 F\$

(単価番号 21号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
鉄筋コンクリート	1.20	m ³	94.00	112.80	
均しコンクリート	0.19	m ³	87.00	16.53	
砕 石	0.58	m ³	18.50	10.73	
型 枠	6.00	m ²	7.00	42.00	
鉄 筋	42.62	kg	0.44	18.75	
掘 削	6.00	m ³	1.20	7.20	
埋戻し	12.49	m ³	2.00	74.94	
計				282.95	

水路横断工 (No. 1) 単価表

一金 316.60 F\$

(単価番号 22号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
鉄筋コンクリート	1.37	m ³	94.00	128.78	
型 枠	9.20	m ²	7.00	64.40	
鉄 筋 (φ9)	11.00	kg	0.44	4.84	
砕 石	0.58	m ³	18.50	10.74	
掘 削	13.00	m ³	1.20	15.60	
埋戻し	11.70	m ³	2.00	23.40	
(制水弁 Box)					
コンクリート管φ600,L=0.90m	1.00	本	55.00	55.00	
コンクリート(σ ₂₀ B=150kg/cm ²)	0.04	m ³	87.00	3.48	
砕 石	0.10	m ³	18.50	1.85	
鋼 板(t=4.5m/m)	18.90	kg	0.44	8.31	
丸 鋼(φ16)	0.46	kg	0.44	0.20	
計				316.60	

水路横断工(No. 2) 単価表

一金 280.03 F\$

(単価番号 23号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
鉄筋コンクリート	1.09	m ³	94.00	102.46	
型 枠	7.70	m ³	7.00	53.90	
鉄 筋(φ9)	11.00	kg	0.44	4.84	
砕 石	0.56	m ³	18.50	10.36	
掘 削	13.03	m ³	1.20	15.63	
埋戻し	12.00	m ³	2.00	24.00	
(制水弁 Box)					
コンクリート管 φ600, L=0.90m	1.0	本	55.00	55.00	
コンクリート(σ ₂₈ =150kg/cm ²)	0.04	m ³	87.00	3.48	
砕 石	0.10	m ³	18.50	1.85	
鋼 板(t=4.5m/m)	18.90	kg	0.44	8.31	
丸 鋼(φ16)	0.46	kg	0.44	0.20	
計				280.03	

分水工 (TypeII-1) 単価表

一金 213.66 F\$

1ヶ所当り

(単価番号 24号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
(制水弁 Box)	1.00	ヶ所			
コンクリート管 φ600	1.00	本	55.00	55.00	
コンクリート	0.04	m ³	87.00	3.48	
砕 石	0.10	m ³	18.50	1.85	
鋼 板(t=4.5m/m)	18.90	kg	0.44	8.31	
丸 鋼(φ16)	0.46	kg	0.44	0.20	
(Outlet Box)	1.00	ヶ所			
鉄筋コンクリート	0.60	m ³	94.00	56.40	
型 枠	7.00	m ³	7.00	49.00	
鉄 筋(φ9)	18.70	kg	0.44	8.22	
均しコンクリート	0.05	m ³	87.00	4.35	
砕 石	0.15	m ³	18.50	2.77	
掘 削	8.40	m ³	1.20	10.08	
埋戻し	7.00	m ³	2.00	14.00	
計				213.66	

分土工 (TypeII-2) 単価表

一金 213.66 F\$

名 称	数 量	単 位	1ヶ所当り (単価番号 25号)		備 考
			単 価	金 額	
			F\$	F\$	
(制水弁 Box)	1.00	ヶ所			
コンクリート管 φ 600	1.00	本	55.00	55.00	
コンクリート	0.04	m ³	87.00	3.48	
砕 石	0.10	m ³	18.50	1.85	
鋼 板 (t=4.5m/m)	18.90	kg	0.44	8.31	
丸 鋼 (φ 16)	0.46	kg	0.44	0.20	
(Outlet Box)	1.00	ヶ所			
鉄筋コンクリート	0.60	m ³	94.00	56.40	
型 枠	7.00	m ²	7.00	49.00	
鉄 筋 (φ 9)	18.70	kg	0.44	8.22	
均しコンクリート	0.05	m ³	87.00	4.35	
砕 石	0.15	m ³	18.50	2.77	
掘 削	8.40	m ³	1.20	10.08	
埋戻し	7.00	m ³	2.00	14.00	
計				213.66	

給水栓工 (TypeII-2) 単価表

一金 39.62 F\$

名 称	数 量	単 位	派線用 1ヶ所当り (単価番号 26号)		備 考
			単 価	金 額	
			F\$	F\$	
鉄筋コンクリート	0.16	m ³	94.00	15.04	
型 枠	2.13	m ²	7.00	14.91	
均しコンクリート	0.02	m ³	87.00	1.74	
砕 石	0.05	m ³	18.50	0.92	
鉄 筋 (φ 9)	10.78	m ³	0.44	4.75	
掘 削	0.81	m ³	1.20	0.90	
埋戻し	0.68	m ³	2.00	1.36	
計				39.62	

開水路工 (コンクリート水路) 単価表

一金 24.00 F\$

名 称	数 量	単 位	1.0m当り (単価番号 27号)		備 考
			単 価	金 額	
			F\$	F\$	
鉄筋コンクリート	0.11	m ³	94.00	10.34	
鉄 筋	6.23	kg	0.44	2.74	
型 枠	1.40	m ²	7.00	9.80	
養 成	0.50	m ²	0.50	0.25	
盛 土	0.18	m ³	2.00	0.36	
法面仕上	1.02	m ²	0.50	0.51	
計				24.00	

Inlet Box工 単価表

一金 86.93 F\$

1ヶ所当り (単価番号 28号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
(単一型)					
鉄筋コンクリート	0.38	m ³	94.00	35.72	
型 枠	4.40	m ²	7.00	30.80	
均しコンクリート	0.06	m ³	87.00	5.22	
砕 石	0.15	m ³	18.50	2.77	
鉄筋(D 9)	16.10	kg	0.44	7.08	
鋼 板(t=3.2mm)	4.59	kg	0.44	2.01	
丸 鋼(φ9)	0.25	kg	0.44	0.11	
掘 削	1.42	m ³	1.20	1.70	
埋戻し	0.76	m ³	2.00	1.52	
計				86.93	

Inlet Box工 単価表 1ヶ所当り

一金 359.58 F\$

(単価番号 29号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
(分水型)					
鉄筋コンクリート	1.81	m ³	94.00	170.14	
型 枠	12.84	m ²	7.00	89.88	
均しコンクリート	0.10	m ³	87.00	8.70	
砕 石	0.69	m ³	18.50	12.76	
鉄 筋(D 9)	30.50	kg	0.44	13.42	
コンクリートパイプ(φ 225)	4.00	本	12.64	50.56	
鋼 板(t=3.2mm)	6.70	kg	0.44	2.94	
丸 鋼(φ9)	0.37	kg	0.44	0.16	
掘 削	5.35	m ³	1.20	6.42	
埋戻し	2.30	m ³	2.00	4.60	
計				359.58	

排水路工 (改修) 単価表

一金 2.94 F\$

1.0m当り (単価番号 30号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
掘 削	0.92	m ³	1.20	1.10	
基盤面仕上げ	0.30	m ²	0.50	0.15	
法面仕上げ	3.39	m ²	0.50	1.69	
計				2.94	

排水路工 (新設) 単価表

一金 4.16 F\$

1.0m当り

(単価番号 31号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
掘 削	1.80	m ³	1.20	2.16	
基盤面仕上げ	0.30	m ²	1.00	0.30	
法面仕上げ	3.39	m ²	0.50	1.70	
計				4.16	

Outlet Box I (I) 単価表

一金 78.88 F\$

(単価番号 32号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
鉄筋コンクリート	0.098	m ³	94.00	9.21	
均しコンクリート	0.025	"	87.00	2.17	
砕 石	0.049	"	18.50	0.90	
型 枠	1.74	m ²	7.00	12.18	
鋼 板	1.73	kg	0.44	0.76	
丸 鋼 (φ 9mm)	0.12	kg	0.44	0.05	
コンクリートパイプ	7	m	5.45	38.15	
掘 削	4.85	m ³	1.20	5.82	
埋戻し	4.83	"	2.00	9.66	
計				78.88	

Outlet Box I (II) 単価表

一金 40.50 F\$

(単価番号 33号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
鉄筋コンクリート	0.098	m ³	94.00	9.21	
均しコンクリート	0.025	"	87.00	2.17	
砕 石	0.049	"	18.50	0.83	
型 枠	1.74	m ²	7.00	12.18	
鋼 板	1.73	kg	0.44	0.76	
丸 鋼	0.12	"	0.44	0.05	
コンクリートパイプ	2	m	5.45	10.90	
掘 削	1.39	m ³	1.20	1.66	
埋戻し	1.37	"	2.00	2.74	
計				40.50	

作物調整室組立工 単価表

一金 1,380.00 F\$

(単価番号 37号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
特殊作業員					
本体・内装工	30	人/日	20.00	600.00	3×10=30
整備工	15	"	"	300.00	3×5=15
普通作業員					
本体・内装工	20	人/日	12.00	240.00	2×10=20
雑工	5	"	"	60.00	1×5=5
解 梱	15	"	"	180.00	3×5=15
計				1,380.00	

作物調整室基礎工 単価表

一金 3,487.30 F\$

(単価番号 38号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
基礎無筋コンクリート	7.60	m ³	87.00	661.20	
土間コンクリート	19.50	m ³	87.00	1696.50	
掘 削	29.20	m ³	1.20	35.94	
型 枠	94.26	m ²	7.00	659.82	
砕 石	23.50	m ²	18.50	434.75	
計				3,487.30	

脱穀フロア工 (1ヶ所当り) 単価表

一金 147.79 F\$

(単価番号 39号)

名 称	数 量	単 位	単 価	金 額	備 考
			F\$	F\$	
コンクリート	1.35	m ³	87.00	117.45	
砕 石	0.90	m ³	18.50	16.65	
型 枠	1.80	m ²	7.00	12.60	
鋼 管	2.49	kg	1.09	1.09	
計				147.79	

参 考 資 料

1. 工事請負契約書 (案)
2. 工事仕様書 (案)
3. 申請書 (案)
4. 工事施工業者

1. 工事費請負契約書 (案)

CONTRACT

FOR

CONSTRUCTION OF

EXPERIMENTAL RICE FIELDS AND ITS RELATED FACILITIES

FOR

THE KORENIVIA RESEARCH STATION

CONTRACT

For Construction of Experimental Rice Fields
and its Related Facilities for the
Korenivia Research Station.

This Contract is made and entered into this ____ day of

_____ at the JICA Suva Office between

Japanese International Cooperation Agency, Suva Office

by _____ Title _____

as its authorized representative of the Suva Office, hereinafter
called "the JICA" of the one part, and _____

whose office is situated at _____

_____ Represented by

_____ Nationality _____ Title _____

hereinafter called "the Contractor" of the other part.

Both parties mutually agree under the terms of this
Contract as follows:-

Article - 1 (a) (Description of Work)

Contractor shall carry out the construction of
experimental rice fields and its related facilities for the
Korenivia Research station.

Article - 1 (b)

The following documents shall be deemed to form.
be read and constructed as part of this agreement viz:-

- i) Bill of quantities (itemized statement)
- ii) The attached construction drawings
- iii) The attached specification

Article - 2 (Contract Sum of Construction)

The contract sum of construction shall be
F\$ _____ . () and be based on
the bill of quantities attached here.

Article - 3 (Time Limit on Construction and its Prolongation)

The Contractor shall start work within ten (10) days
of signing by both parties of this agreement, and complete work
by the ____ th of ____, 1986.

Article - 4 (Delays)

In a case where it is clear that the Contractor is
failing to fulfil his obligations within the period referred to
in the preceding Article. The Contractor shall inform the JICA
of this as soon as possible and if the JICA agrees that the
delay is due to such causes as natural calamity or others for
which the Contractor is not liable, a reasonable extension of
time shall be approved. In this case, the sum referred to in
Article 15 shall not be collected.

Article - 5 (Process of carrying out of Work)

The Contractor shall carry out the work in
accordance with the drawings and specification referred to in
Article 1(b). And in cases where it is necessary for carrying
out such work as is not mentioned therein for the purpose of
promoting the present construction or for reasons of established
practices, the Contractor shall carry out the said work under
the direction of the JICA. In cases where the Contractor finds
any doubt in the plans of construction, the Contractor shall ask
the JICA for the necessary directions before commencing work.

on that part for which there exists some doubt. The JICA must provide such information and details within seven (7) days of the written request from the Contractor.

Article - 6

The Contractor shall follow the direction of the JICA or the Engineer to be appointed by the JICA. As to materials for the construction, the Contractor shall use only those inspected and approved by the JICA or the Engineer appointed by the JICA. In cases where any defective work has been done as a result of such use of materials which have not been inspected by the Engineer. The Contractor shall be liable to change the materials or repair the work at his own responsibility. The construction shall be carried out in accordance with the proper technique and durability shall be the principal aim as regards to the construction.

Article - 7

As to the workman to be hired by the Contractor for the work, the Contractor shall assume the responsibility as entrepreneur or employer, as provided for by Laws and Regulations.

Article - 8 (Transfer of Right and Obligation)

The Contractor shall not assign or sublet to a third party the whole or part of the construction except in cases where the Contractor has obtained written approval from the JICA.

Article - 9 (Damages)

In cases where any damage is caused to the JICA or a third party, materials or buildings, through carelessness on the part of the Contractor during the course of work or transportation of materials, the Contractor shall be liable to repair or compensate such damage at his own expense by the date appointed by the JICA or the third party.

Article - 10

In case where the Contractor fails to repair or compensate such damages referred to in the proceeding Article by the fixed date, the JICA may pay for such repair on behalf of the Contractor and collect compensation from the Contractor by deducting the amount from the sum of construction to be paid to the Contractor under the provisions of Article 20, and in cases where the damages exceed the sum of construction, the JICA may collect the deficit.

Article - 11(a) (Change of Construction Drawing and
Submission of Necessary Documents)

In cases where the JICA feels it necessary to discontinue work owing to unavoidable circumstances or to alter the plan of construction, the JICA may request the Contractor to calculate, on the basis of the unit prices as detailed in the priced bill of quantities referred to in Article - 2, as increase or decrease in the sum of construction resulting from the suspension or alteration of the work and the Contractor shall comply with the request. When the JICA orders such a suspension or alteration, depending on the statement of the above mentioned calculation, the Contractor shall submit a written consent by the date appointed the JICA.

Article - 11(b)

Where additional work cannot be properly measured and valued on the basis of the unit price in the bill of quantities referred to in Article - 2, the Contractor shall be allowed daywork rates in accordance with a written consent by the JICA.

Article - 12 (Price Adjustment)

(a) In the case of the costs of materials rising sharply as a result of the fluctuation in the market prices due to an unexpected change in the economic conditions, a reasonable adjustment of the above mentioned sum or the contents of the work, will be made according to a mutual agreement between the JICA and the Contractor.

(b) In a case where the Contractor incurs loss or suffers loss unreasonably in some item of Bill of quantities due to the JICA's failure to provide the information and details referred to in Article - 5 of the particular item or work, then reasonable adjustment of the above mentioned losses shall be considered by the JICA on the detailed claim submitted by the Contractor.

Article - 13 (Right to Rescind Contract and Penalty)

In cases where the Contractor fails to fulfil his obligations under this contract, the JICA may rescind the whole or part of the Contract. In such a case, the JICA may collect from the Contractor a sum as a penalty of 10 percent (10%) of the amount which is equivalent to the rescinded. In cases where the damages caused on the JICA, on account of the non-fulfilment of contract by the Contractor, exceed the sum referred to in the

preceeding paragraph, the JICA may further demand the Contractor to pay the excess.

Article - 14

In cases other than provided for in the preceeding Article where the Contractor fails to fulfil his obligations, or in cases where the fulfilment of obligation by the Contractor is regarded to be difficult, the JICA may have a third party fulfil, at the cost of the Contractor, the whole or part of the obligations of the Contractor. Even if liability of the Contractor exceeds the contract sum referred to in Article - 2 in consequence of this, the Contractor may not raise any objection to it.

Article - 15

In cases other than provided for in Article 13, where the Contractor fails to complete the construction at his own responsibility, within the period referred to in Article - 3, the Contractor shall be liable, a period fixed by the JICA, to pay the JICA, per week of delay, a sum equivalent to 0.2 percent (0.2%) of the contract sum referred to in Article - 2.

Article - 16 (Damages caused by Natural Calamity etc.)

In cases where serious damages occur to the completed part of the work, or the materials, tools etc., already carried into the field of construction, the Contractor shall promptly inform the JICA of the circumstances. If such damages are caused by a natural calamity, an earthquake, a flood, a civil war, a war, an epidemic, or a general/trade strike, rioting or other unavoidable reasons, for the occurrence of which no responsibility

can be attributed to either the JICA or the Contractor and it is admitted that the Contractor has paid the care of good administration to avoid the occurrence of such damages, the JICA shall be liable for the amount of the damages which shall be fixed through negotiations between the JICA and the Contractor.

Article - 17(a) (Inspection)

The work at any stage shall be subject to inspection to be conducted by the JICA or an inspector appointed by the JICA, in the presence of the Contractor and necessary labour and articles required for such an inspection shall be provided by the Contractor.

Article - 17(b)

In cases where the work fails to pass the inspection referred to in the proceeding paragraph, the Contractor shall carry out necessary repair at his own cost, under the direction of the JICA.

Article - 18 (Date of completion of construction and obligation thereafter)

The date of completion of construction shall be regarded as that on which the final work, including removal of temporary constructions and cleaning, has passed the inspection referred to in Article - 17 and on that date the object of the total construction shall be delivered to the JICA by the Contractor. For a period of three (3) months thereafter, any defect in the construction, the cause of which is judged in the opinion of the JICA to be attributable to faulty or inadequate technique or materials employed by the Contractor, shall be immediately repaired or improved at the cost of the Contractor.

Article - 19(a) (Payment & currency)

The JICA shall pay to the Contractor in Taka currency as follows:-

Payment for the part of the work already completed shall be allowed by the JICA three times during the course of construction at the request of the Contractor, provided that it has passed the inspection referred to in Article - 17.

However, the amount of the payment shall be limited to ninety per cent (90%) of the work already completed. The final payment will be carried out within one month after the JICA receives the bill which will be submitted by the Contractor on or after the date of completion of construction referred to in the preceding Article.

Article - 19(b)

Ten per cent (10%) of the contract price shall be paid as advance payment for mobilization with order to commence, upon production of a refund bond or Bank Guarantee for the same amount as the said advance payment.

Article - 19(c)

This advance payment shall be adjusted from subsequent monthly bills by such sum as the proportionate to the monthly progress stated in the said bills.

Article - 19(d)

The refund bond or bank guarantee as provided in paragraph (b) here or shall be returned to the Contractor by the JICA upon the delivery of the works.

Article - 20 (Interest for the delay of payment)

In cases of the payment referred to in the preceding Article being delayed owing to a cause or causes

attributable to the JICA, the Contractor may request the JICA to pay, per week of delay, a sum equivalent to 1.0 per cent (1.0%) of the bill sum on arrears of payment.

Article - 21(a) (Settlement of dispute)

If there arises any dispute with regard to this Agreement or the construction Drawings or Specification referred to in Article - 1(b) it will be settled by a mutual consultation between the JICA and the Contractor.

Article 21(b)

Should it not be possible to reach a mutual agreement between the JICA and the Contractor on such dispute, then it shall be referred to an Arbitrator or Arbitrators acceptable to both the JICA and the Contractor and the decision of this Arbitrator or/of Arbitrators shall be binding on both the JICA and the Contractor.

The Conclusion of the Agreement:

Two copies of the Agreement shall be prepared with the signature of both parties affixed to each of the copies, one copy to be held by each party.

Date :

.....JICA

Mr. _____, Resident Representative
JICA, Suva Office

.....Contractor

.....Witness

.....Witness

2. 工事仕様書 (案)

Specification

- Section 1. General
- Section 2. Earth Works
- Section 3. Concrete Works
- Section 4. Land Consolidation Works
- Section 5. Drain Pipe Works
- Section 6. Pumping Station Construction Works
- Section 7. Irrigation Pipeline Works
- Section 8. Secondary Irrigation Canal Works
- Section 9. Secondary Drainage Canal Works
- Section 10. Road Works
- Section 11. Relative Facilities

Specification

Section 1. General

1. General

1-1. Application

1) This specification is applicable to "Construction of Experimental Rice Fields and its Related Facilities for the Korenivia Research Station in Fiji".

2) Quantity of main work

(i)	Land Consolidation Works	11 ha
(ii)	Irrigation Facilities	
	Pumping station	1 No.
	Main pipeline	1,450 m
	Secondary pipeline	490 m
	Open canal	730 m
	Tertiary pipeline	160 m
	Hydrant	33 Places
(iii)	Drainage Facilities	
	Secondary drainage Canal (new construction)	410 m
	Secondary drainage Canal (improvement)	90 m
(iv)	Road works	
	Farm road	1,090 m
	Maintenance road	2,000 m
(v)	Relative Facilities	
	Field Laboratory	158 m ²
	Threshing Floor work	9 Places

3) Specifications entered in the drawing shall be treated in reference to this specification.

1-2. Engineer

"Engineer" means the engineer who was appointed to supervise the works by the JICA.

1-3. Site Representative

Site representative shall be well qualified in supervision or have enough experience of supervision. The Contractor shall submit career history of a site representative to the Engineer for his approval.

1-4. Work Schedule

The Contractor shall submit his work schedule before the commencement of the works at the job site. If the Contractor intends to change the work schedule, the approval from the Engineer shall be obtained prior to the modification of schedule.

Also the Contractor shall submit the machineries scheme including the numbers, and kind of machineries and using period of them.

1-5. Field Test and Inspection

The field tests in accordance with the specifications and the demands from the Engineer shall be the responsibility for the Contractor. The charges for such fields test shall be included in the total amount of the construction cost, and the Contractor is not entitled to claim any amount of the field test charges.

1-6. Temporary Office and Residence

In case the Contractor intends to build the temporary office, residence and so forth, the Contractor shall submit the plan to the Engineer for approval at least 10 (ten) days in advance of the commencement of such works.

The Contractor is required to always keep the buildings and facilities in good condition and to make proper drainage and sanitary system. Should the Contractor build them outside of the job site, the Contractor shall arrange with the owner of such land and at its own expense.

1-7. Record on Construction

The Contractor shall submit the record on whole progress of Construction every week to the Engineer.

1-8. Clearance of the Work Site

Upon completion of the works, the Contractor shall clear the site within period of construction.

Section 2. Earth Works

2-1. Scope

The work under this section shall consist of all classes of grading leveling, ditching, earthmoving, all other excavation, backfill, banking, surfacing and any other such construction work.

2-2. Clearing and Stripping

(1) Clearing

All areas to be cleared will be as designated on the Drawings and/or as directed by the Engineer. This work shall basically consist of clearing all vegetation, roots, brush, rubbish and other objectionable matter from the specified area to the satisfaction of the Engineer.

(2) Stripping

All the surfaces which are to be stripped will be as shown on the Drawings and/or as directed by the Engineer. This work shall basically consist of removing boulders, underground roots and other undesirable items to a depth as shown on the Drawings or as otherwise stipulated by the Engineer.

Materials obtained from stripping work shall be deposited in places approved by the Engineer. Stockpiled material shall be smoothed to a measurable outline and shall not be higher than that specified by the Engineer.

2-3. Excavation

(1) Excavation of all canals, ditches, pipelines and structure shall be in accordance with cross-section, line and grades shown in the drawings. Excavation operations shall be such that all suitable materials for embankment shall be separated from objectionable materials which are to be wasted.

(2) If the spontaneous landside of the slope occurs or is expected to occur, the Contractor shall inform the Engineer without any delay and shall ask him how to deal with landslide.

(3) The excavation of the slope shall be finished with tools to have the gradient indicated in the drawings or by the Engineer.

(4) If the slope and the foundation of the canals, ditches, or the foundation of pipelines, structures, ponds and the inlet suction tank of the pump are over excavated, the Contractor shall backfill with gravel or other material approved by the Engineer at the contractor's expense and the backfilled materials shall be compacted sufficiently.

2-4. Backfill and Fill

Backfill and fill shall be placed to the lines and dimensions as shown on the Drawings.

The materials to be used for backfill and fill shall be all classes of disposed or excavated materials available in-situ. The quality of such materials shall be approved by the Engineer and shall be free from any organic matter or other objectionable material such as large clods or stones, boulders, etc.

The material shall be handled and placed in such manner as to achieve favorable compaction and density. The method of placing, moisture controlling and compacting backfill and fill shall be subject to approval by the Engineer.

2-5. Embankment

Embankments shall be placed and trimmed to the lines and dimensions as shown on the Drawings. The materials to be

used for embankment shall be all classes of disposed or excavated materials available in-situ. The quality of such materials shall be approved by the Engineer and shall be free from any organic matter or other objectionable material such as large clods or stones, boulders, etc. The material shall be placed in successive horizontal layers of loose material not more than 200mm in depth. Each layer shall be spread uniformly on a soil surface that has been moistened or aerated as necessary and scarified or otherwise broken up in such a manner that the fill will bond with the surface on which it is placed. The material shall be handled and placed in such manner as to achieve favorable compaction and density. The method of placing, moisture controlling, compacting and trimming of the embankment shall be subject to approval by the Engineer. The surface of the embankment shall be left 150mm above final grade to allow for settlement. After an adequate period approved by the Engineer, the Contractor shall return and fill in low spots, or scrape off high spots.

2-6. Disposal of Excavated Material

Excavated materials may be used for backfilling and/or embarking unless otherwise specified or directed by the Engineer. Excavated material in excess of requirements, shall be disposed of in the disposal area appointed by the Engineer. Waste material shall be piled by taking sufficient measures to avoid injury or damage to adjacent area and properties.

Section 3. Concrete Works

3-1 General

All concrete works shall be performed as established on the Drawing or directed by the Engineer. Unless specifically provided in this specification, the concrete shall be produced, transported, placed, cured, finished and tested in accordance with the ASTM and JIS provisions or equivalent standard approved by the Engineer.

3-2 Materials

(1) Cement

(i) Cement used in Concrete mixture shall be normal portland cement, properties of which shall be in accordance with ASTM-C150 and JIS-R5210 or equivalent standard approved by the Engineer.

(ii) Cement shall be reliable brand, good quality and absolutely dry.

(iii) The Contractor shall construct a water-proof cement storage shed at the job site, floor of which shall be higher than the ground surface at least 30 (thirty) cm.

(iv) The Contractor shall not keep cement at the job site more than 1 (one) month, and the storage period is counted from the date when the cement is transported from the manufacturing factory to the job site.

(v) During the course of construction, the Contractor shall not use cement for the works properties of which are changed, especially consolidated.

(2) Fine aggregate

(i) Fine aggregate shall be river sand that is clean and rigid without organic matter and other substance.

Fine aggregate shall have the properties as shown in following table.

Sieve No.	Percent Retained by Weight
4	0 - 5
16	25 - 40
100	93 - 97

The fineness modulus shall be in the range from 2.30 to 3.00.

(ii) The Contractor shall keep fine aggregate at clean and good drainage place, which shall be protect against the mixture with harmful substance such as clay, soil and so on.

(3) Coarse aggregate

(i) The Contractor shall use crushed stone as coarse aggregate which is rigid and endurable substance without organic and harmful materials.

(ii) Coarse aggregate shall have the grading as shown in the following table.

Sieve Size	Percent Retained by Weight
1"	0
3/4"	0 - 10
3/8"	45 - 80

(iii) Coarse aggregate shall be stored in such manner as to avoid inclusion of foreign materials. All coarse aggregate shall be maintained in saturated moisture content and surface dry conditions.

(4) Water

(i) Water used in Concrete shall be clean free from oils, acid, alkali or other matters detrimental to the quality or durability of the concrete.

(ii) Water shall be stored in tanks and not to be exposed to the direct rays of the sun.

3-3 Mixing Design of Concrete

Concrete shall have the proportion as follows:

Class	Compressive Strength 28 days	Mixing portion Cement:Fine A: Coarse A	Slump
Reinforce concrete	$f'_c = 210 \text{ kg/cm}^2$	1:2:3 (by volumn)	8 - 12 cm
Plain concrete	$f'_c = 160 \text{ kg/cm}^2$	1:3:6 (by volumn)	8 - 12 cm
Lean concrete	-	1:4:6 (by volumn)	

Fine A : fine aggregate

Coarse A: coarse aggregate

Other proportions for mixed design may be indicated by the Engineer at the job site, if it is necessary.

3-4 Slump Test

The Contractor shall make slump test in each batch in accordance with JIS 1101. In case the Contractor intends to place concrete, the Contractor shall not pour the concrete without prior inspection for the value of slump test by the Engineer.

After the completion of the concrete Works, the Contractor shall submit the data of slump test to the Engineer.

3-5 Mixing the Concrete

The Contractor shall use a power-driven concrete mixer and quantities of cement, aggregate and water in concrete mixture shall be measured correctly in each time. The driving time for mixing concrete shall be more than 2 (two) minutes and less than 5 (five) minutes in order to make concrete with constant consistency and good quality. Take out from the concrete mixer, concrete shall be placed in the form within 30 (thirty) minutes. The concrete mixer shall be checked and cleaned every day and the Contractor shall remove concrete debris attached the concrete mixer.

3-6 Concrete Form Work

(1) Concrete form shall be rigid and strong enough to support the weight of concrete without deformation, and the Contractor shall make concrete form tightly in order to prevent water seepage from unsolid concrete.

(2) The Contractor may use wood form, plywood form and steel form, in any case surface of form shall be smooth and have no damage.

(3) In case the Contractor set up concrete form, the iron embedded within concrete to hold the form shall be cut at concrete surface.

(4) Before placing concrete, concrete form shall be inspected by the Engineer for correctness of size, good preparation and so on.

(5) Before placing concrete, the Contractor shall paint oil on inner side of concrete form for good separation between concrete and concrete form after solidness of concrete.

3-7 Placing Concrete

(1) Before placing concrete, the Contractor shall check and clean the floor and the surface of concrete form.

(2) After a batch of concrete is placed, the surface height of concrete in concrete form shall have same height in a block, and the height of placed concrete layer shall be less than 40 (forty) cm. in each placing.

(3) The Contractor shall place concrete continuously into a lock of structure such as wall, slab and so on.

(4) In case the new concrete is placed on solid concrete, the Contractor shall take out laitance, loose aggregate, low quality concrete on the surface of solid concrete.

3-8 Compaction of Concrete

After placing concrete, the Contractor shall compact concrete by using immersion type vibrator. Should the Contractor intends to use another type of vibrator, the Contractor shall obtain the prior permission of the Engineer.

3-9 Curing

The Contractor shall cure concrete completely with water. If the Contractor intends to use curing chemical, the Contractor shall obtain the prior permission of the Engineer.

3-10 Reinforcing Bars

(i) Reinforcing bars which are used in reinforced concrete works shall be round bar or deformed bar in accordance with ASTM designation A-7-55 and A-141-55 or JIS G 3112, when the Contractor uses round bars, hook shall be provided as directed by the Engineer.

(ii) The equipment and tool which are to be used to cut, bend and manufacture shall be approved by the Engineer, Hot manufacturing of the reinforcing bar is not permitted.

(iii) Before the bar is erected, the surface of the bars and the surface of any metal supports shall be clean and free from all the dirt and deteriorates which in the opinion of the Engineer is objectionable.

(iv) The minimum coverage for all main reinforcing bars shall be 5 cm.

(v) Cutting and bending of reinforcing bars may be done in a shop or at the job site. All bending works shall be in accordance with the standard approved practice of the industry or by other approved machine methods. Radius for bend and hooks will be as per the detailed approved drawings.

(vi) Laps at joints of reinforcing bar shall have a length at least thirty times of the diameter of bar and shall be bound by steel wire.

Section 4. Land Consolidation Works

4-1 Scope

The work under this Section shall consist of clearing and stripping and grading works, all in accordance with the Drawing and these specifications or as directed by the Engineer.

4-2 Work Preparation

Prior to the work, the planned area shall be isolated from outside drainage to prevent the water coming in. During the work, surface water in the planned area shall be removed as much as practicable.

4-3 Clearing and stripping Work

(1) The Contractor shall conform the boundary of work area in attendance of the Engineer before the commencement of work and shall place boundary posts, if necessary.

(2) Clearing and stripping work shall conform to the requirements specified under Section 2.

4-4 Earthmoving and Filling

(1) Primary earthmoving and filling shall be made within the planned area as a rule.

(2) Earthmoving and filling work shall conform to the requirements specified under Section 2.

(3) Slope surface shall be finished evenly with the grade given in the Drawings. Final grading shall be carried out using a bulldozer.

(4) In case of over-excavation, the Contractor shall dispose according to the instruction of the Engineer. Its cost shall be borne by the Contractor.

Section 5. Drain Pipe Works

5-1 Scope

The scope under this Section shall consist of furnishing of all labor, materials, equipment and supplies needed for the installation of drain pipe in accordance with the Drawings and these Specifications or as directed by the Engineer.

All pipe, fittings and appurtenamces shall be supplied by the JICA.

5-2 Installation

(1) Excavation of trench

Trench shall be excavated by backhoe to the depth shown on the Drawings. The width at the bottom of the trench shall not be less than 50 cm.

The depth of the trench of the drain pipeline shall be such as to have a backfill height, measured above the top of the pipes, of not less than 60 cm.

(2) Backfilling of Trench

Backfilling of trench and other earthwork relating to the trenches shall be executed as specified in Section 2.

(3) Pipe joints

Pipe joints shall conform to the requirements specified in Section 7.

(4) Pipe Cutting

Pipe cutting shall conform to the requirements specified in Section 7.

Section 6. Pumping Stations Construction Works

6-1 Scope

The scope under this Section shall consist of furnishing of all labor, materials equipment and supplies needed for the installation of pump and related equipment and constructing of pumping house in accordance with the Drawing and these Specification or as directed by the Engineer.

The pump and related facilities shall be supplied by the JICA.

The power transmission line to the pumping station shall be furnished by the Fiji Government.

6-2 Earthwork and Structure Excavation

Earthwork shall conform to the requirements specified in Section 3.

6-3 Concrete Work

Concrete work shall conform to the requirements specified in Section 3.

6-4 Reinforcing Steel Bars

All reinforcing steel bars shall conform to the requirements specified in Section 3.

6-5 Brick Masonry

(1) The work under this clause consists of all brick masonry work shown in the Drawings.

(2) Local products can be used and it shall be the first class.

(3) All bricks shall be laid after applying mortar.

6-6 Carpentry

(1) The work under this paragraph consists of all carpentry work shown in the Drawings.

(2) Local timber can be used, and it should be the first class.

(3) All frameworks shall be jointed by optimum jointing method.

6-7 Roofing

Local materials can be used and the construction method shall conform to Fiji specifications.

6-8 Installation of Pump and Related Facilities

The installation of pump and related facilities shall be made strictly in accordance with the manufacturer's technical instruction.

Section 7. Irrigation Pipeline Works

7-1 Scope

This Section deals with matters of irrigation pipeline. The pipeline is composed of the main and distributary pipeline. All pipe, fittings and appurtenances shall be supplied by the JICA.

The Contractor shall furnish all labor, materials, equipment and supplies needed for the construction of these pipelines above mentioned and perform installation and testing of them at the site in accordance with Specifications and Drawings.

8-2 Installation

(1) Excavation of trench

The section of excavation for laying pipes are shown on the Drawings. The excavation of trenches shall be made

in accordance with specification described in Section 2.

Additional costs for the excavation exceed the limits and backfill to such sections other than by direction of the Engineer shall be borne by the Contractor.

(2) Pipe bedding

The Contractor shall make pipe beds for pipelines as shown on the Drawings.

The bedding material shall be carefully placed on the bottom of the prepared trench, hand tapped and shaped to fit the lower portion of the pipe conduit barrel. Care shall be taken to ensure that the pipe will be uniformly supported on the bedding material.

(3) Pipe joints

Joints for pipe shall be taper sized solvent welding method, and shall construct the jointing in accordance with the manufacture's technical instruction. In making connections, clean dirt, moisture and oil from pipe and fittings. Particular care shall be taken not to overstress threaded connections at joint.

(4) Pipe cutting

When cuts are necessary, they shall be perpendicular to the axis of the pipe and smooth. Cut shall be made with tools in conformity with the pipe manufacture's recommendations.

(5) Appurtenant equipment

Such as sluice valves and air valves shall be carried out in accordance with the manufacture's instruction.

(6) Protection device

Such as concrete thrust block or locking device shall be done in accordance with the Drawings.

Section 8. Secondary Irrigation canal works

8-1 Scope

The scope under this Section shall consist of excavation embankment and concrete lining for the irrigation canals, all in accordance with the Drawings and these Specifications or as directed by the Engineer.

8-2 Earth Work

Earth work for irrigation canals shall be in accordance with Section 2.

8-3 Concrete Work

Where shown on the Drawings or as directed by the Engineer, the Contractor shall construct a lining for the irrigation canals. Concrete lining shall be constructed in accordance with the applicable provision as Section 3 and the relevant Drawings.

Section 9. Secondary Drainage Canal Works

9-1 Scope

The scope under this Section shall consist of excavation of Canals and construction of the pipe culvert for drainage canal in accordance with the Drawings and Specifications or as directed by the Engineer.

9-2 Earth work

Earth work for drainage canals shall be in accordance with Section 2.

After banking operations are terminated the slope of banking shall be formed by means of slope tamping.

9-3 Pipe Culvert

Pipe culvert shall be made with locally manufactured concrete pipes. Pipe bedding shall comply with the applicable provisions of Section 7-2. Concrete works shall comply with the descriptions of Section 3.

Section 10. Road Works

10-1 Scope

The scope under this Section shall cover the construction of roads consisting of Farm road and Maintenance road. The work shall include grubbing clearing embankment and excavation, all in accordance with the Drawings and these specification, or as directed by the Engineer.

10-2 Earthwork

The earthwork needed for construction of the roads shall be conducted according to the applicable provisions of Section 2.

10-3 Earth Materials

The road base shall be formed with those earth materials as surplus in excavation of ditch, when those materials are appropriate or equivalent in quality to those found in borrow pits.

10-4 Compaction

The base of the embankment shall be compacted with roller and thickness of one compaction shall be about 30 cm in spread. During compaction, water shall be sprinkled for keeping optimum moisture content of the materials.

Section 11. Relative Facilities

11-1 Scope

The scope under this Section shall cover the installation of prefabricated house for field laboratory and construction of threshing floor for drying paddy in accordance with the Drawings and Specifications. The prefabricated house shall be supplied by the JICA.

11-2 Earth work

The earth work needed for construction of the foundation of those facilities above mentioned shall be conducted according to the applicable provisions of Section 2.

11-3 Concrete Work

The concrete work needed for construction of the foundation of those facilities above mentioned shall be conducted according to the applicable provisions of Section 3.

11-4 Installation

The installation of prefabricated house for field laboratory shall be made strictly in accordance with the manufacturer's technical instruction or directed by the Engineer.

3. 申請書 (案)

昭和 年 月 日

国際協力事業団
総 裁 殿

事務所長
氏 名 印

下記内容に対するモデルインフラ整備費の支給を申請する。

(1) プロジェクト名

(2) 工 事 名 コロニア試験場試験圃場整備工事

(3) 概算工事費 28,000千円 (積算内訳別添 参照)

(4) 工 事 内 容

A) 工事概要 約20haの試験圃場整備。9haの圃場造成、用排水施設及び農道の整備工事等を行なう。

B) 主要工事数量

i) 圃場整地工	圃場造成工	8.3ha
	排水不良田改良工	0.5ha
	暗渠設置田	3ヶ所

ii) 用水施設工	幹線用水路(パイプライン)	L=1430m
	支線用水路(パイプライン)	L= 480m
	支線用水路(開水路)	L= 410m
	派線用水路(パイプライン)	L= 144m

iii) ポンプ施設工	インクライン型ポンプ	1基
	$\phi 250\text{mm}$, $Q=7.2\text{m}^3/\text{min}$, $H=17.5\text{m}$	

iv) 道路工 支線農道 (B=4.0m) L=1,440m
管理道路 (B=1.0m) L=2,180m

v) 圃場付帯施設 作物調査室(プレハブ上屋) A=158m²
脱穀フロア工(3m x 3m) 9ヶ所

c) 工 期

昭和 年 月 日 ~ 昭和 年 月 日

(5) 申請の事由

4. 工事施工業者

フィジー国で比較的規模の大きい工事施工業者は次のとおりである。(D&I資料より)

- 1) Grayburn Construction Ltd.
- 2) J S Hill & Associates Ltd.
Box 3105, Lami (Local Co.)
- 3) Vanua Landscapers
Box 4276, Samabula
- 4) D Narayan Industries Ltd
Box 883, Suva
- 5) Subhan & Sons
Box 375, Laiwaqa
- 6) Govind Singh & Sons Ltd
Box 358, Nausori
- 7) Ram's Construction Co. Ltd
Box 575, Labasa
- 8) Northern Civil Engineering Contractors Ltd
Box 575, Labasa
- 9) Valebasoga Transport Co
Box 528, Labasa
- 10) Afzal Industries
Box 50, Labasa
- 11) Mohammed Yakub Khan & Co.
Box 547, Lautoka
- 12) B W Holdings
- 13) Prime Image

付 属 図 面 集

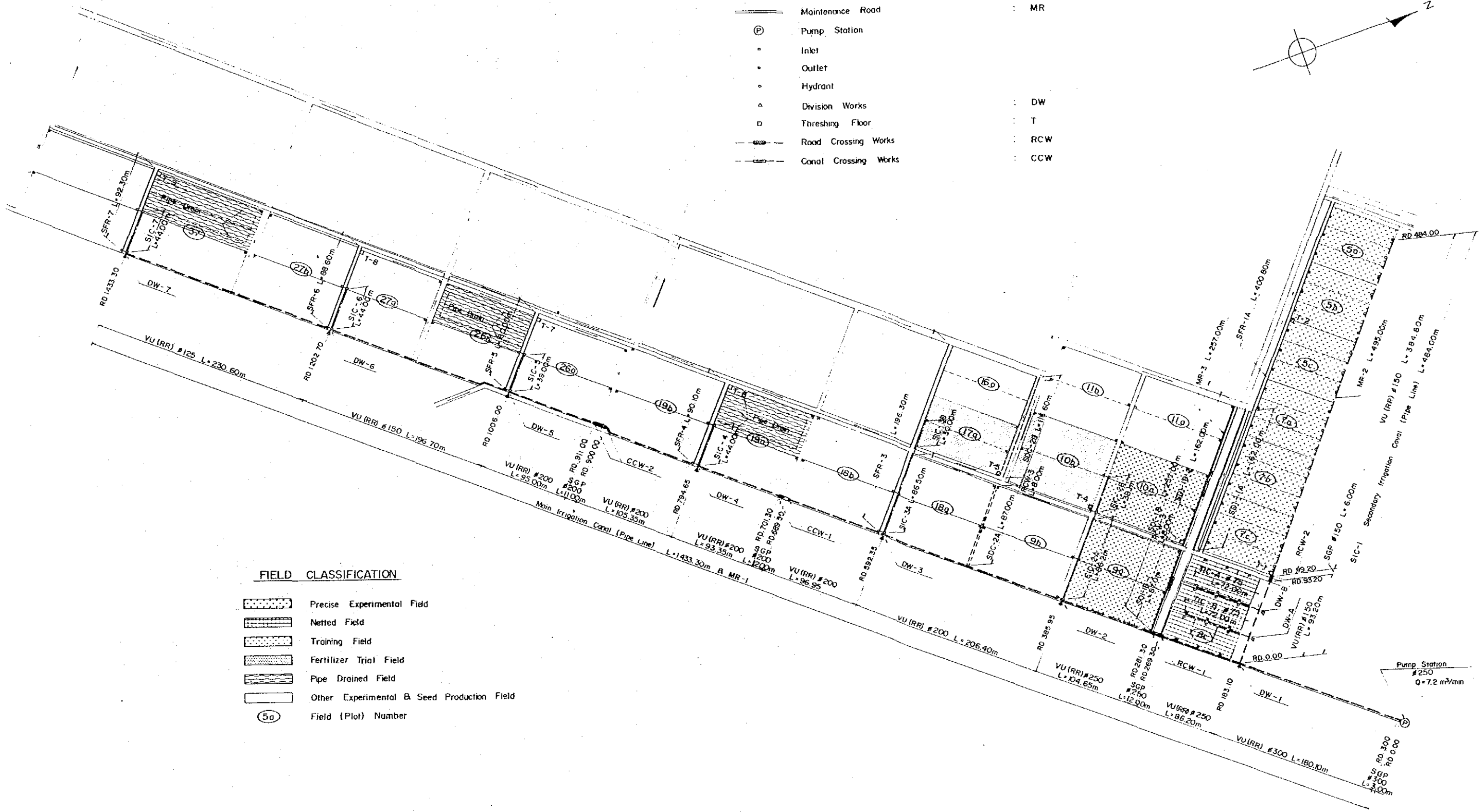
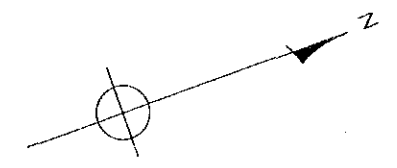
図 面 目 録

図 面 の 名 称	図 面 番 号
【全体計画】	
全体計画図	1
【圃場整地計画】	
圃場造成計画図	2
暗渠計画図	3
【用水計画／道路計画】	
用水路配置計画図	4
幹線用水路・道路計画縦断図	5
" " 横断図（その1）	6
" " 横断図（その2）	7
" " 横断図（その3）	8
支線1号用水路・道路縦断図	9
" " 横断図	10
支線2号用水路・道路縦横断図	11
" 3 " "	12
" 4 " "	13
" 5 " "	14
支線6, 7号用水路・道路縦横断図	15
標準断面図、分水工図、給水栓工図	16
道路横断工図	17
水路横断工図	18
ポンプ計画図	19
【排水計画／道路計画】	
支線1号排水路・道路縦横断図	20
" 2 " " "	21
標準断面図, 付帯工図	22
【圃場付帯工計画】	
作物調整室（プレハブ）計画図	23
脱穀フロア工図	24

GENERAL PLAN
 S=1:2000

LEGEND

	(Abbr.)
--- (Solid line)	Main Irrigation Canal (Pipe Line)
- - - (Dashed line)	Secondary Irrigation Canal (Pipe Line) : SIC
- · - · - (Dash-dot line)	Secondary Irrigation Canal (Open) : "
- · - · - (Dash-dot line)	Tertiary Irrigation Canal (Pipe Line) : TIC
- · - · - (Dash-dot line)	Secondary Drainage Canal : SDC
== (Double line)	Secondary Farm Road : SFR
== (Double line)	Maintenance Road : MR
⊙ (Circle with dot)	Pump Station
· (Dot)	Inlet
· (Dot)	Outlet
⊙ (Circle with dot)	Hydrant
△ (Triangle)	Division Works : DW
□ (Square)	Threshing Floor : T
--- (Dashed line)	Road Crossing Works : RCW
--- (Dashed line)	Canal Crossing Works : CCW

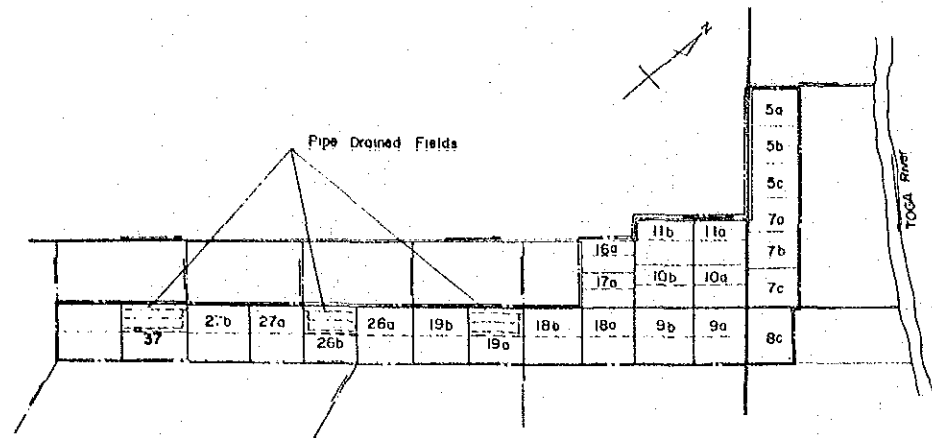


FIELD CLASSIFICATION

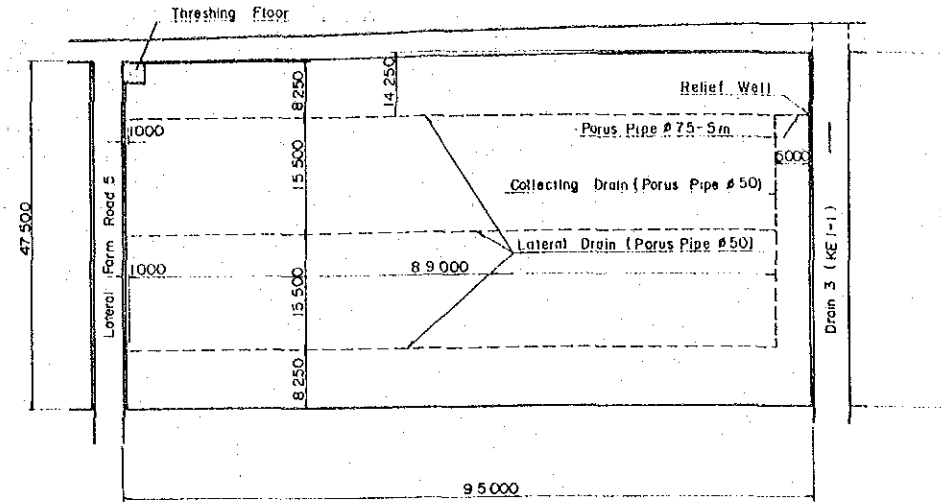
	Precise Experimental Field
	Netted Field
	Training Field
	Fertilizer Trial Field
	Pipe Drained Field
	Other Experimental & Seed Production Field
⊙ (Circle with dot)	Field (Plot) Number

Pump Station
 #250
 Q=7.2 m³/min

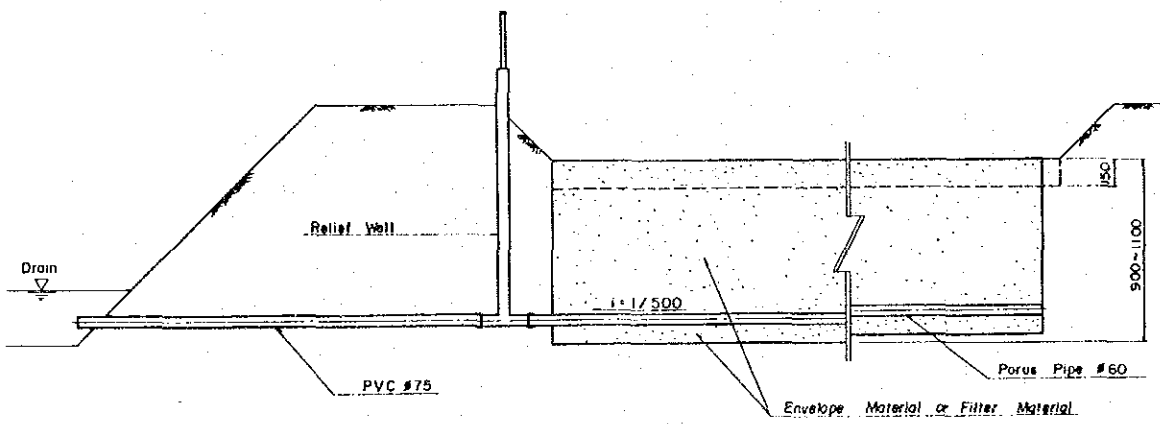
LOCATION OF THE PIPE DRAINED FIELD



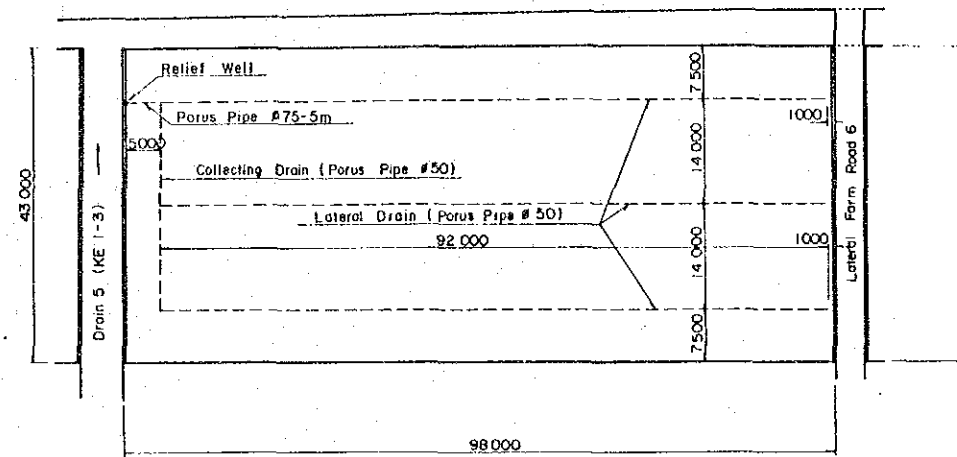
PIPE DRAIN PLAN (Field No.19-a)
S=1:500



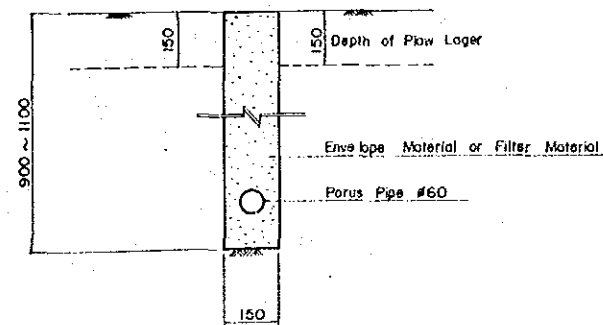
LONG SECTION
S=1:20



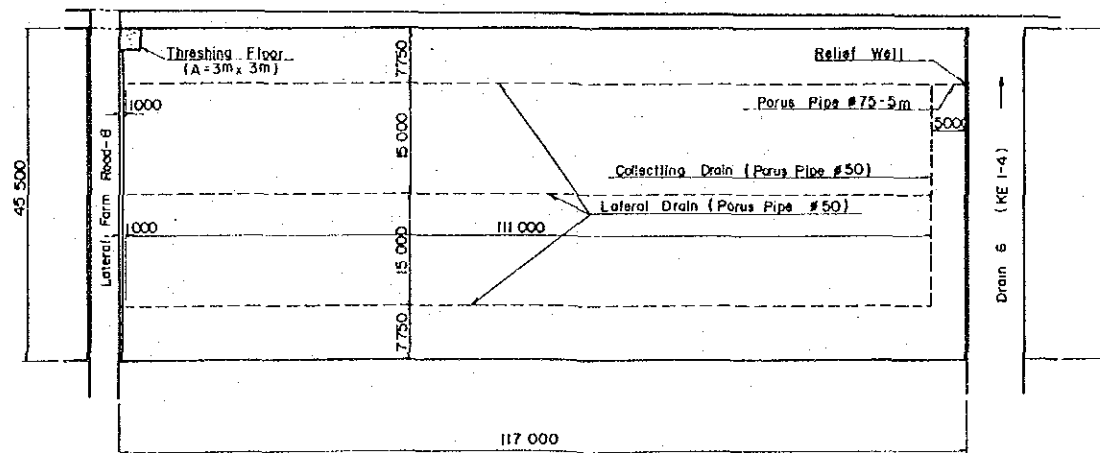
PIPE DRAIN PLAN (Field No.26-b)
S=1:50



CROSS SECTION
S=1:10



PIPE DRAIN PLAN (Field No.32)
S=1:500

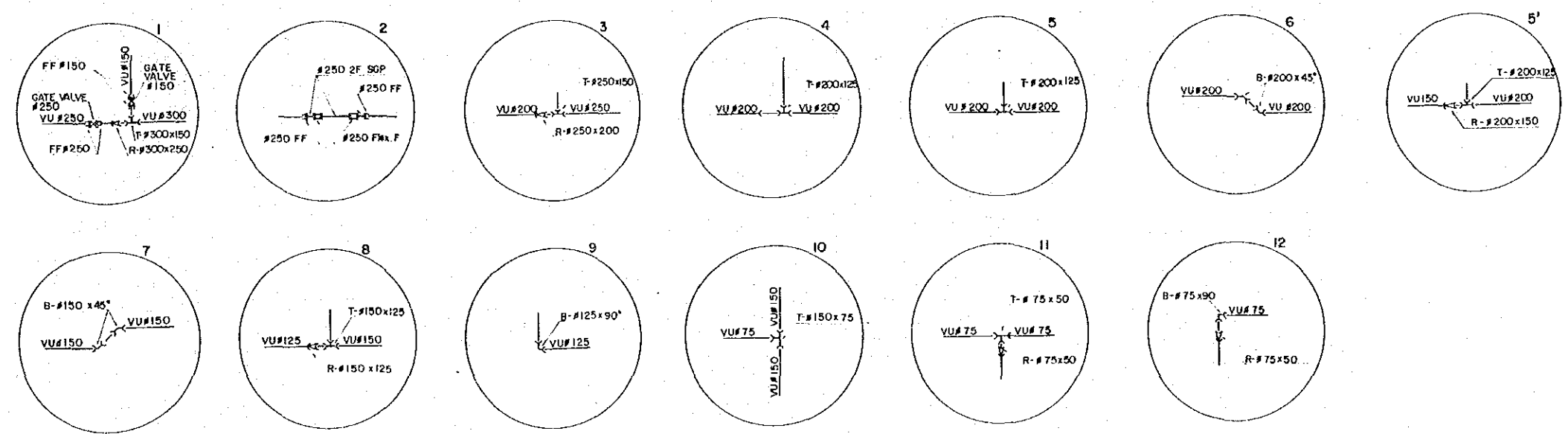
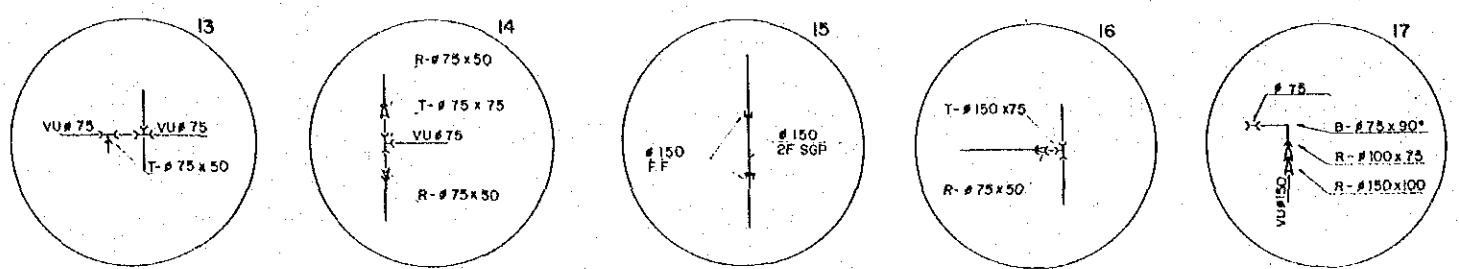
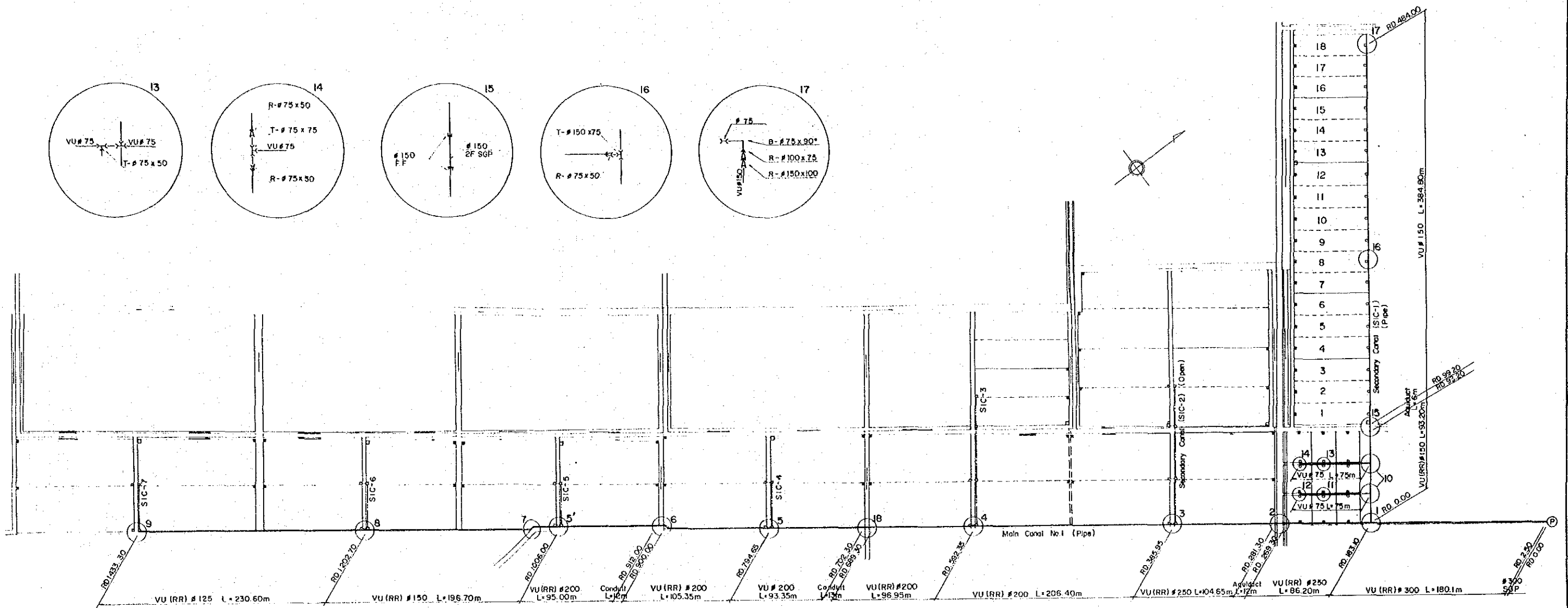


THE GOVERNMENT OF FIJI
THE IMPROVEMENT OF RICE CULTIVATION
TECHNOLOGY PROJECT

TITLE OF DRAWING
PIPE DRAIN PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO JAPAN

DWG. NO.
2

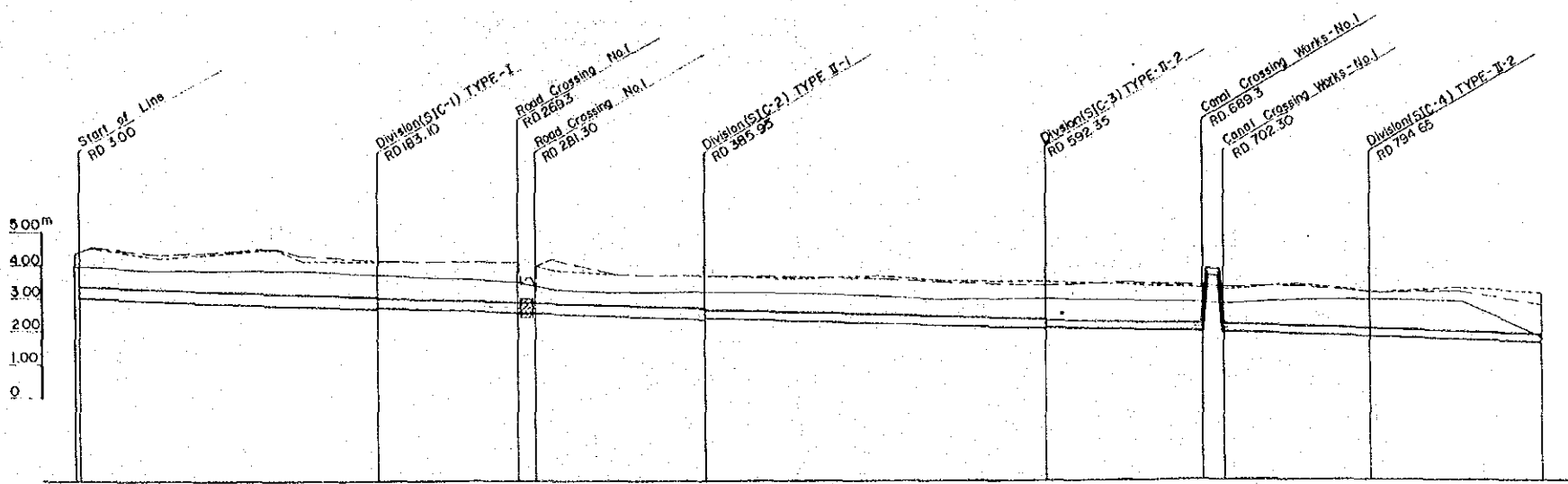
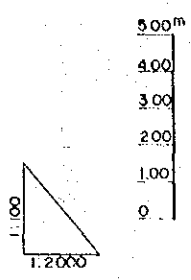


THE GOVERNMENT OF FIJI
 THE IMPROVEMENT OF RICE CULTIVATION
 TECHNOLOGY PROJECT

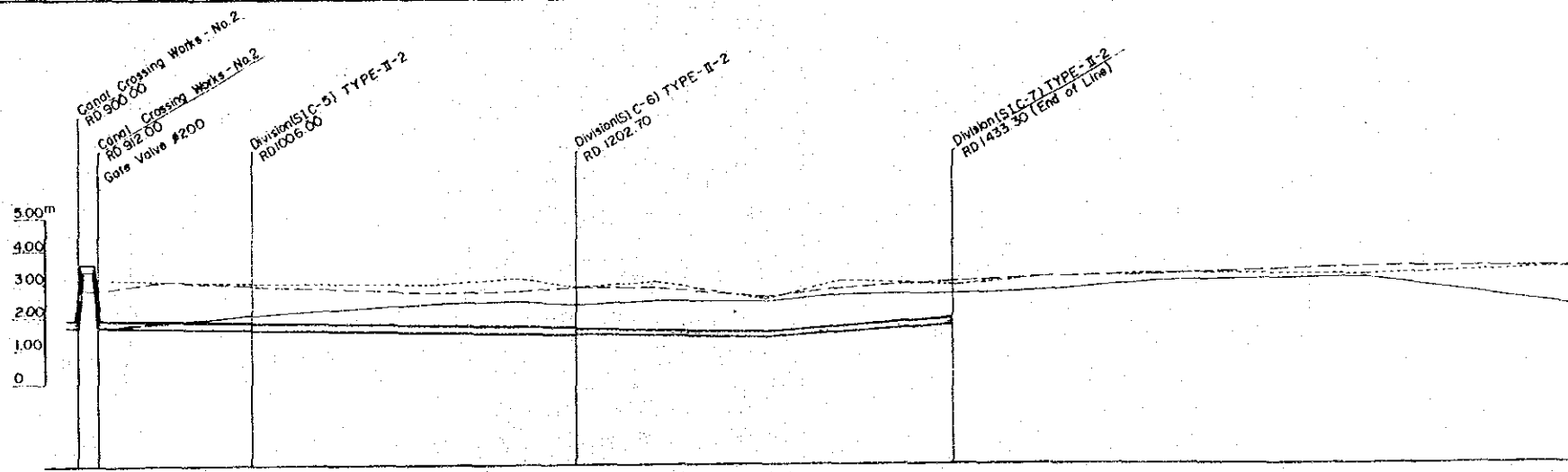
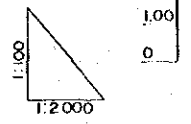
TITLE OF DRAWING
 IRRIGATION NETWORK PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY
 TOKYO JAPAN

DWG NO
 3



RUNNING DISTANCE		0.0	3.0	10.0	41.5	103.1	194.4	288.3	381.3	471.0	560.0	648.0	734.5	819.0	900.0			
ORIGINAL	LEFT HAND SURFACE	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36			
	BED OF CANAL	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94			
	RIGHT HAND SURFACE	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03			
	R.L 5m L.H.S	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64			
	R.L 10m R.H.S	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19			
PLAN	PIPE LEVEL	3.200	3.188	3.102	3.335	2.998	2.974	2.795	2.735	2.719	2.653	2.561	2.554	2.484	2.408	2.334		
	PIPE SLOPE	I = 0.001665																
	PIPE LENGTH OTHERS	VU (RR) #300 L=180.60m			VU (RR) #250 L=86.2m			VU (RR) #250 L=104.65m			VU (RR) #200 L=206.40m			VU (RR) #200 L=96.95m			VU (RR) #200 L=197.70m	



RUNNING DISTANCE		900.0	907.5	912.0	932.8	1006.0	1096.7	1116.2	1166.2	1262.3	1304.0	1352.7	1417.0	1467.0	1517.0	1567.0	1619.2	1679.2	
ORIGINAL	LEFT HAND SURFACE	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	
	BED OF CANAL	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	
	RIGHT HAND SURFACE	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	
	R.L 5m L.H.S	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	
	R.L 10m R.H.S	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	
PLAN	PIPE LEVEL	1.810	1.798	1.739	1.677	1.707	1.703	1.653	1.600	1.551	1.504	1.458	1.408	1.371	1.327	1.279	1.236	1.194	
	PIPE SLOPE	I = 0.000971																	
	PIPE LENGTH OTHERS	VU (RR) #200 L=12.00m			VU (RR) #200 L=54.00m			VU (RR) #150 L=196.70m			VU (RR) #125 L=230.60m								

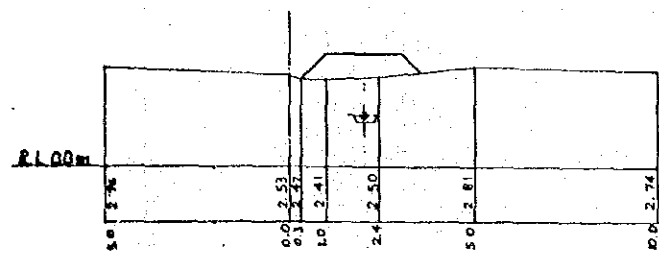
THE GOVERNMENT OF FIJI
THE IMPROVEMENT OF RICE CULTIVATION
TECHNOLOGY PROJECT

TITLE OF DRAWING
MAIN CANAL LONGITUDINAL PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO JAPAN

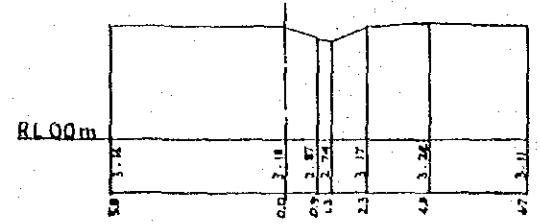
DWG. NO
4

Natural surface
Centre line & fence
Bank
Bed
Bed
Bank
Natural surface
Natural surface



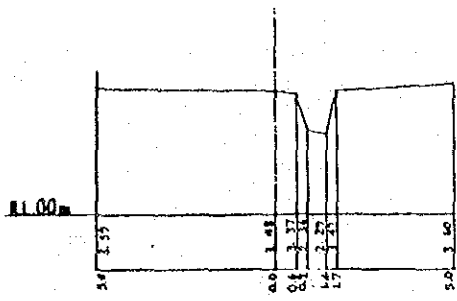
CH 1316.66
FH-1405

Natural surface
Centre line & fence
Bank
Bed
Bed
Bank
Natural surface
Natural surface

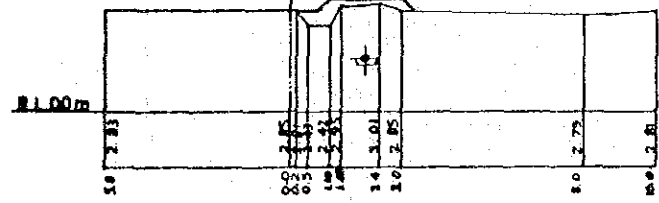


CH 1487.3

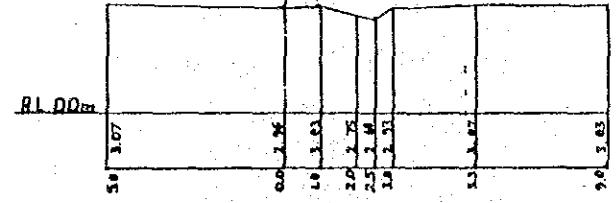
Natural surface
Centre line & fence
Bank
Bed
Bed
Bank
Natural surface
Natural surface



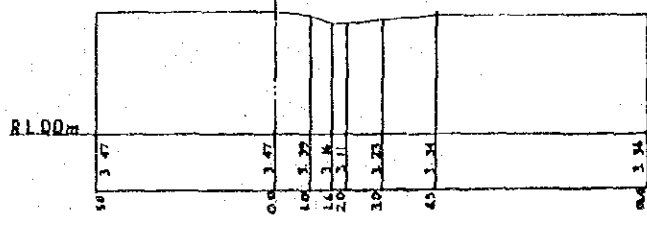
CH 1819.2



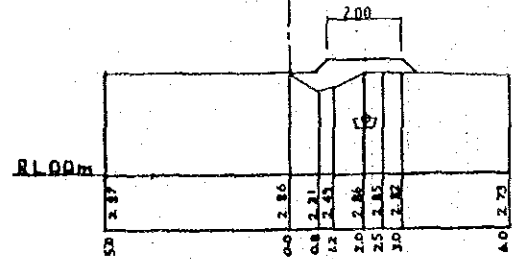
CH 1252.70
FH-1467



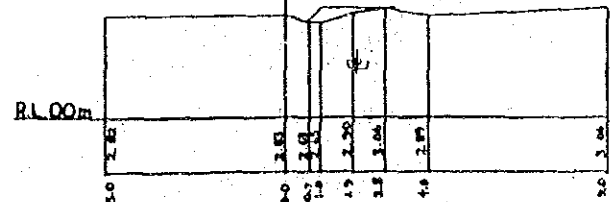
CH 1437.3



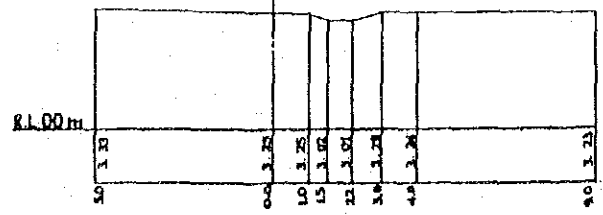
CH 1687.9



CH 1202.70
FH-1516



CH 1366.66
FH-1571



CH 1557.9

NOTES
1 All sections are drawn looking down stream
2 Datum : Mean Sea level
3 Origin Bm 83/007
R.L. 1971

REFERENCE PLANS

VARIATION	NAME	DATE

MINISTRY OF AGRICULTURE AND FISHERIES
DRAINAGE AND IRRIGATION DIVISION

JAPANESE ADVISORY PROJECT

KORDOVIA IRRIGATION SCHEME
CROSS SECTIONS OF MAIN CANAL
CHAINAGES FROM 1202.70m - 1208.20m

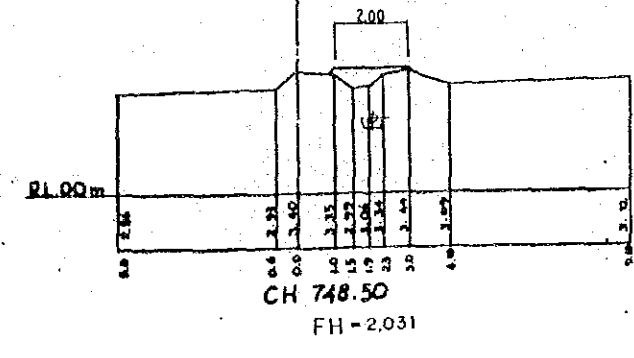
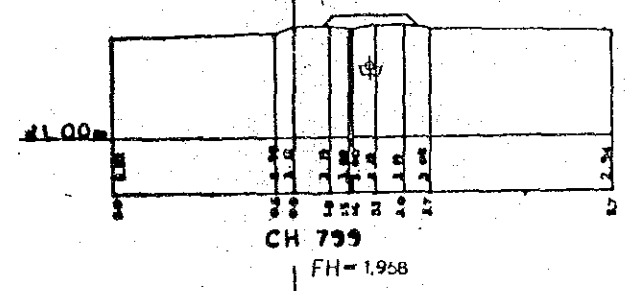
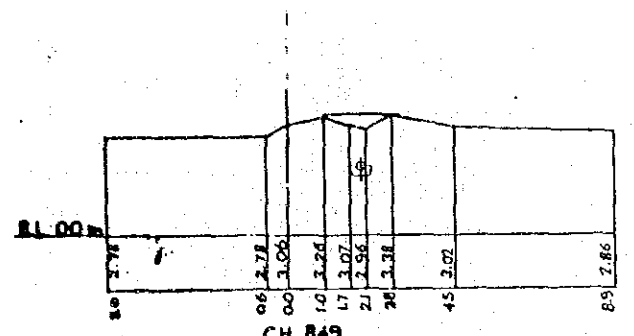
SCALE OF METRES
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

1 2 3 4

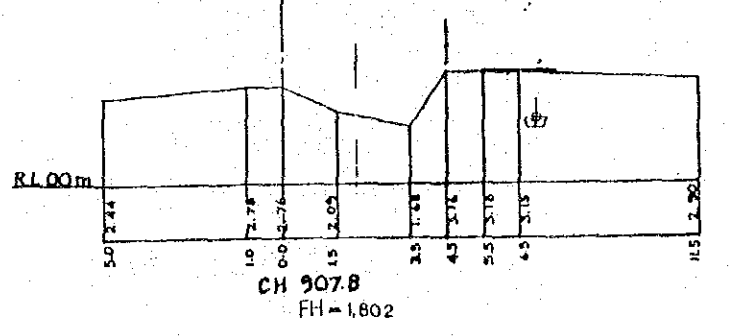
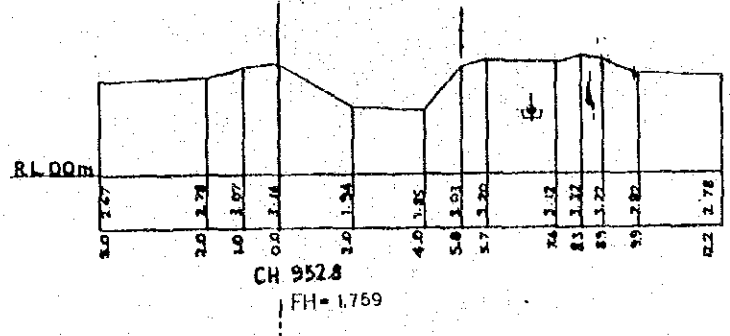
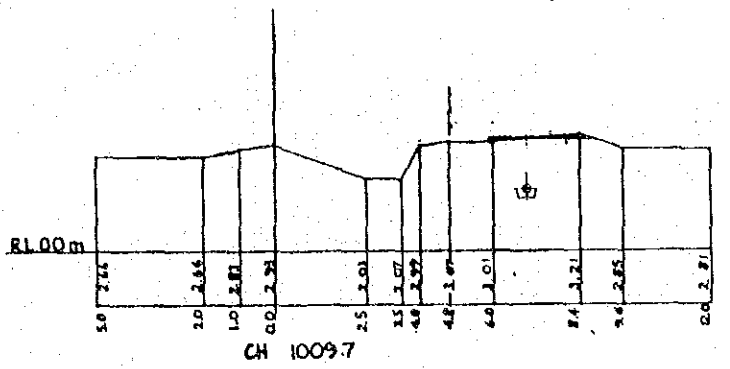
THE GOVERNMENT OF FIJI
THE IMPROVEMENT OF RICE CULTIVATION
TECHNOLOGY PROJECT

TITLE OF DRAWING
MAIN CANAL & ROAD CROSS SECTIONAL
PLAN (NO. 1)

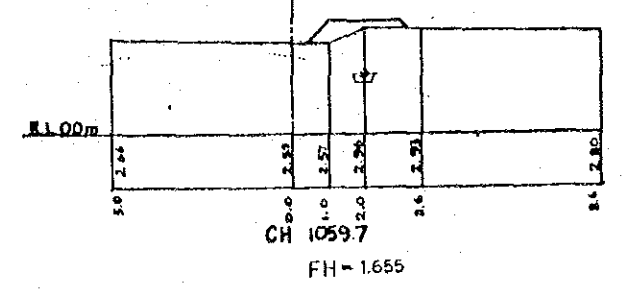
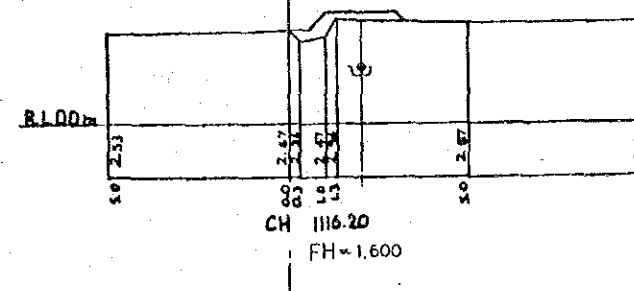
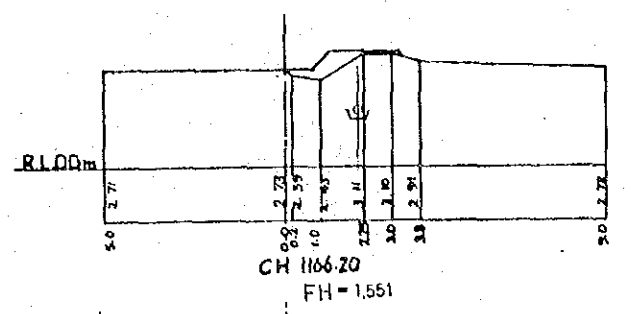
Natural surface
 Centre line & fences bank
 Bank
 Bed
 Bed
 Bank
 Toe
 Natural surface



Natural surface
 Toe
 Bank
 Centre line & bank
 Bed
 Bed
 Bed
 Natural surface
 Top of small bund
 Toe
 Natural surface



Natural surface
 Centre line & fences bank
 Bed
 Bed
 Bank
 Bank
 Toe
 Natural surface



NOTES
 1 All sections are drawn looking down stream
 2 Datum : Mean Sea level
 3 Origin : Bm B3/C07
 R.L. 2.971

Handwritten notes:
 1/2
 KE 12
 STATION
 Plan

REFERENCE PLANS

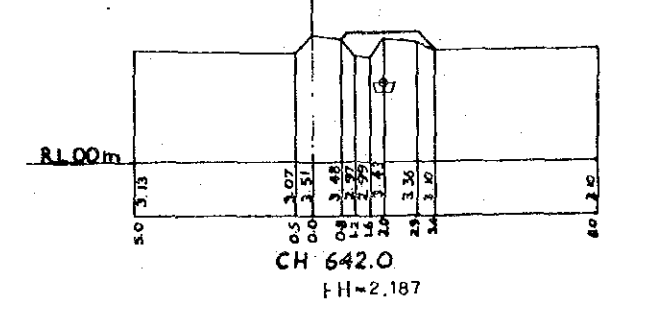
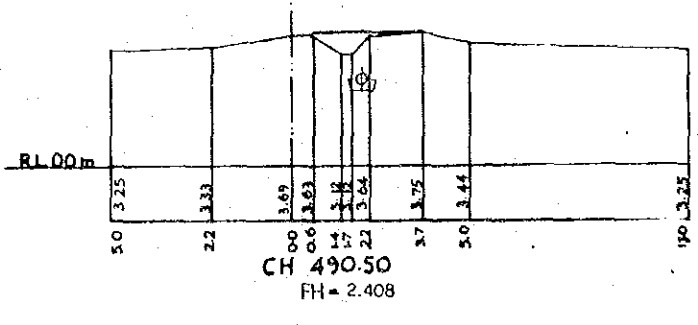
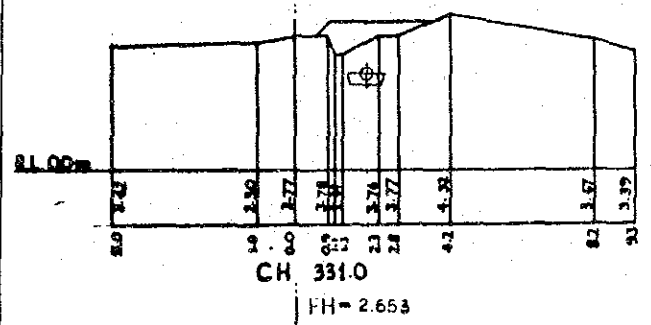
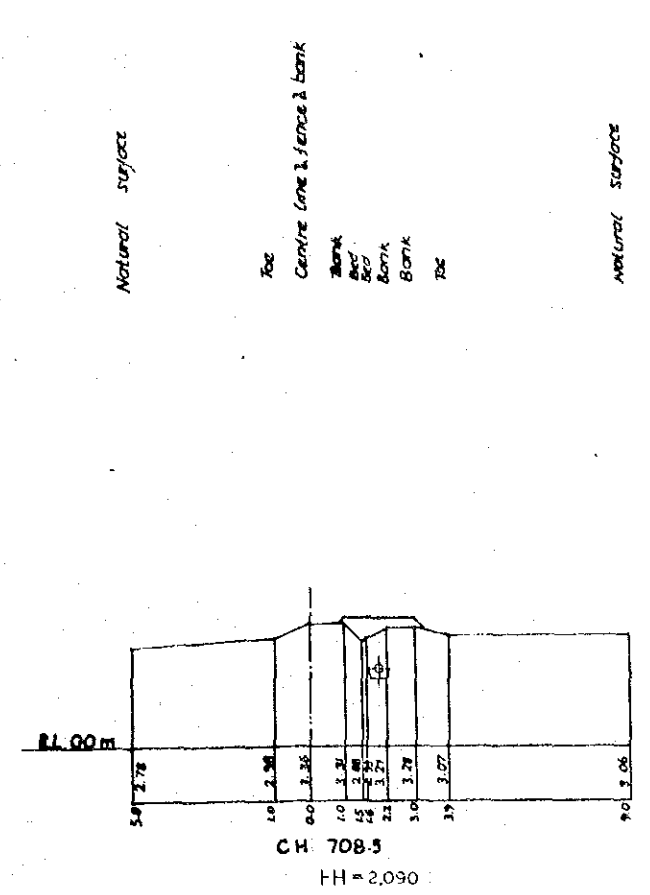
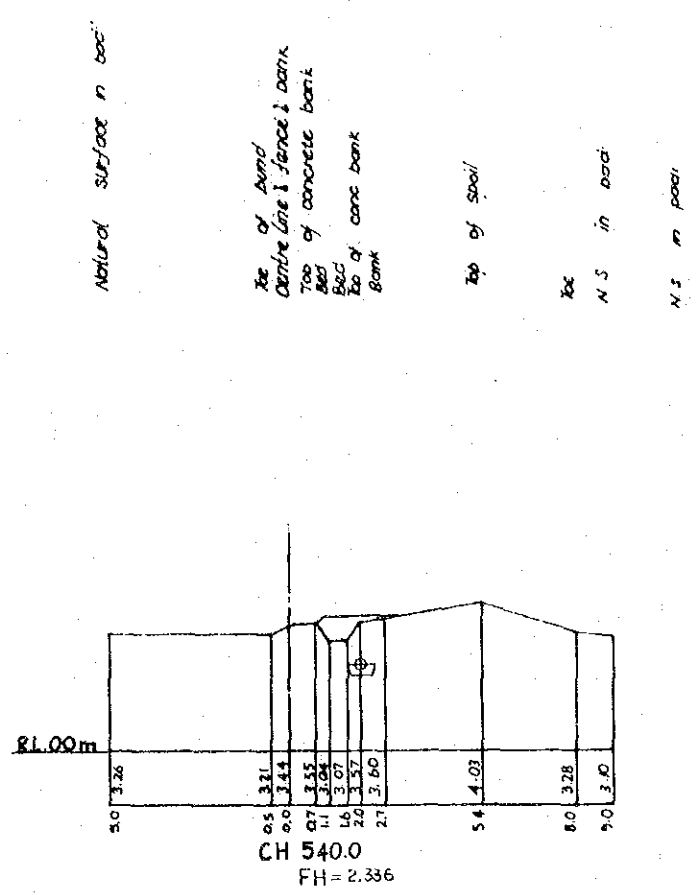
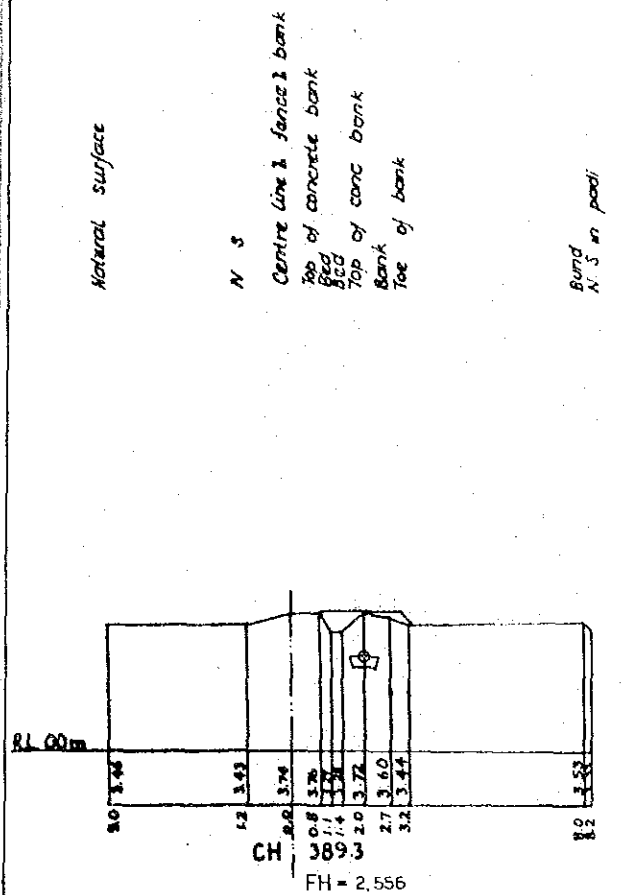
VARIATIONS	NAME	DATE

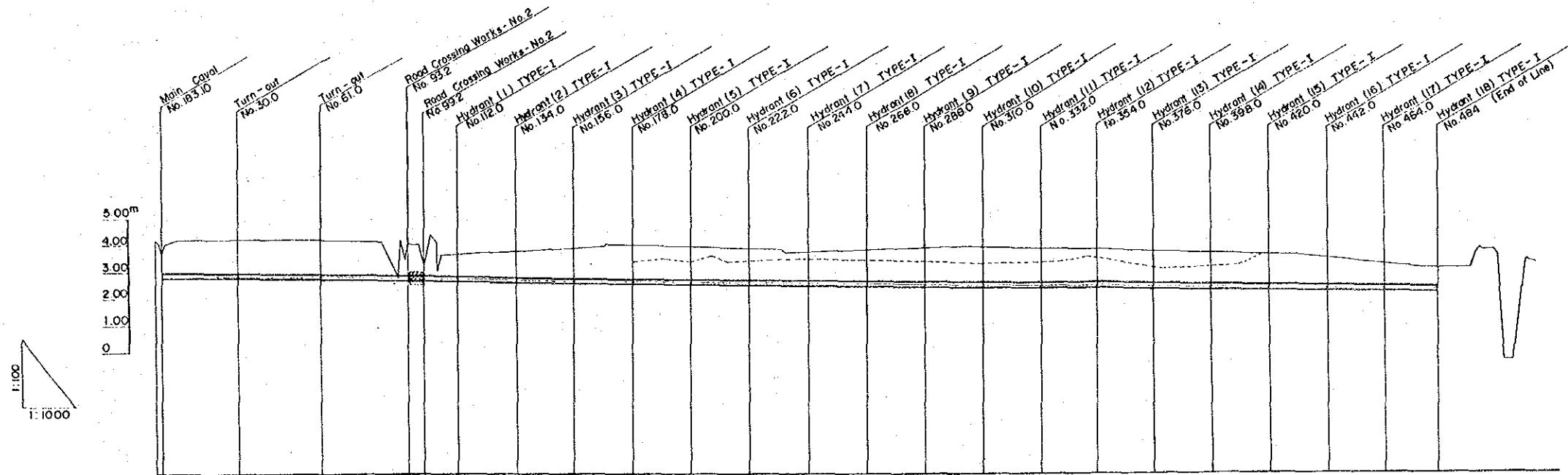
MINISTRY OF AGRICULTURE AND FISHERIES
 DRAINAGE AND IRRIGATION DIVISION

JAPANESE ADVISORY PROJECT
 KORONIVIA IRRIGATION SCHEME
 CROSS SECTIONS OF MAIN CANAL CHANNELS
 FROM 748.50 - 1166.20m

SCALE OF METRES
 HORIZONTAL SCALE 1:100
 VERTICAL SCALE 1:100

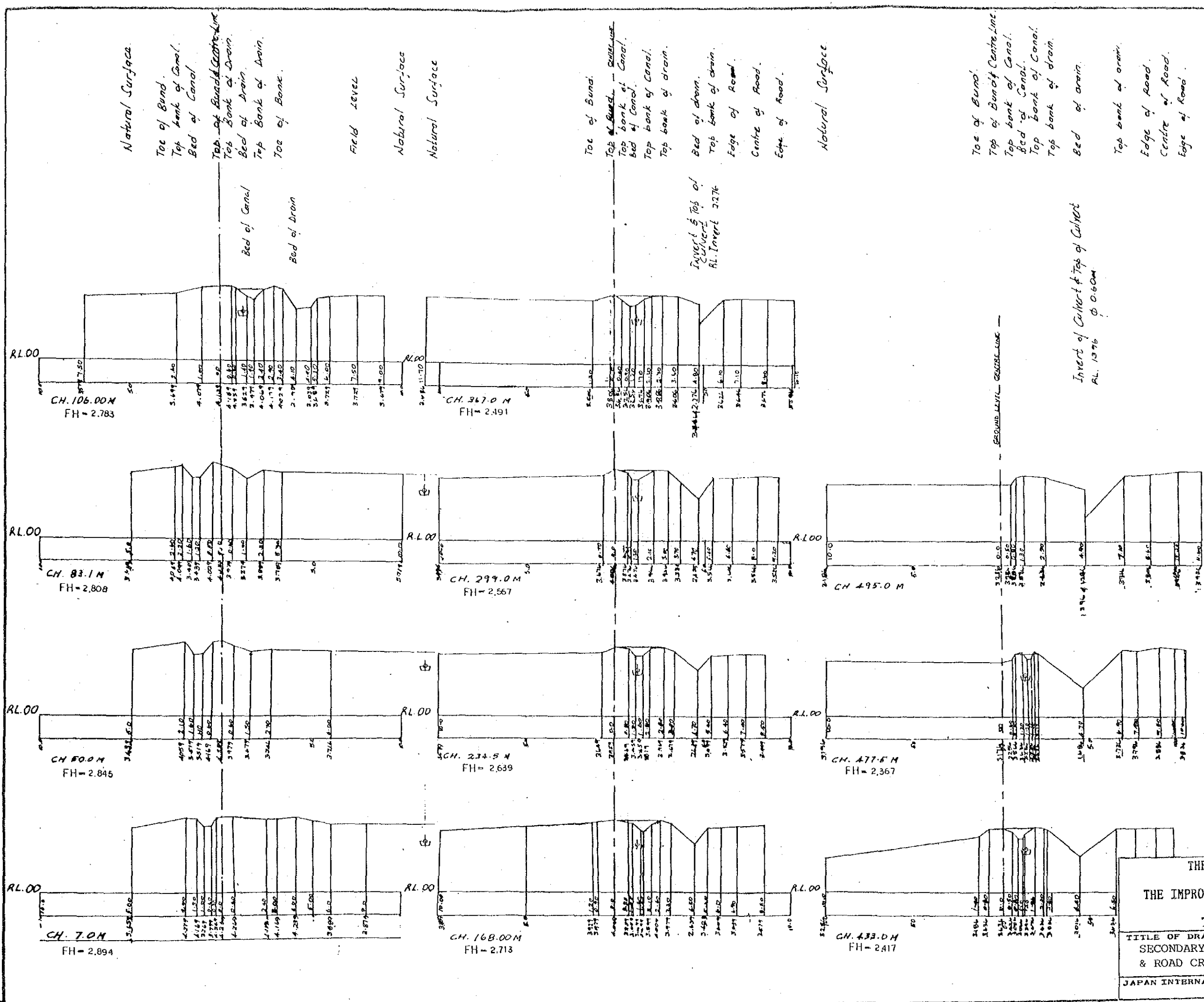
THE GOVERNMENT OF FIJI
 THE IMPROVEMENT OF RICE CULTIVATION
 TECHNOLOGY PROJECT
 TITLE OF DRAWING
 MAIN CANAL & ROAD CROSS SECTIONAL
 PLAN (NO.2)
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) TOKYO JAPAN
 DWG. NO. 6





RUNNING DISTANCE		0.0	30.0	63.1	93.2	98.2	108.0	168.0	178.0	190.4	200.0	207.7	214.0	233.5	240.3	275.8	288.0	298.0	305.0	310.0	340.0	350.0	367.0	374.0	380.0	408.0	417.0	433.0	434.0	438.0	477.3	484.0	498.2	498.1	521.0		
ORIGINAL	TOP OF PEG							4.08	4.08					3.96	3.96			4.01	4.01				3.85	3.85			3.64	3.67			3.18		3.15	3.93	4.08	4.08	
	TOP OF BANK	4.15	4.25	4.16		3.88		4.01						3.56	3.56			4.01	4.01				3.81	3.85			3.64	3.67			3.18		3.15	3.93	4.08	4.08	
	LEFT HAND SURFACE							3.44	3.44	3.55	3.42	3.68	3.43	3.57	3.57	3.48	3.48	3.48	4.01	4.01				3.14	3.14			3.10	3.10			3.21		3.15	3.93	4.08	4.08
	RIGHT HAND SURFACE																																				
PLAN	PIPE LEVEL	2.882	2.843	2.808	2.787	2.780	2.783	2.712	2.702	2.688	2.678	2.669	2.662	2.628	2.633	2.593	2.578	2.567	2.560	2.555	2.521	2.508	2.481	2.478	2.448	2.433	2.417	2.416	2.388	2.387	2.360						
	PIPE SLOPE	D												0.00112																							
	PIPE LENGTH OTHERS		VU (RR) #150 L=91.20m																																		

THE GOVERNMENT OF FIJI
 THE IMPROVEMENT OF RICE CULTIVATION
 TECHNOLOGY PROJECT
 TITLE OF DRAWING
 SECONDARY CANAL NO.1
 LONGITUDINAL PLAN
 JAPAN INTERNATIONAL COOPERATION AGENCY
 TOKYO JAPAN
 DWG. NO.
 8



NOTES
 1. DATUM N.S.L.
 ORIGIN BM 83107

REFERENCE PLANS
 RW 4800

VISIBILITY NAME DATE

**MINISTRY OF
 PRIMARY INDUSTRIES
 DRAINAGE AND IRRIGATION
 DIVISION.**

JAPANESE REVISION PROJECT

CANAL NO. 1
 CROSS SECTION.

SCALE OF
 VERTICAL - 1:100
 HORIZONTAL - 1:100

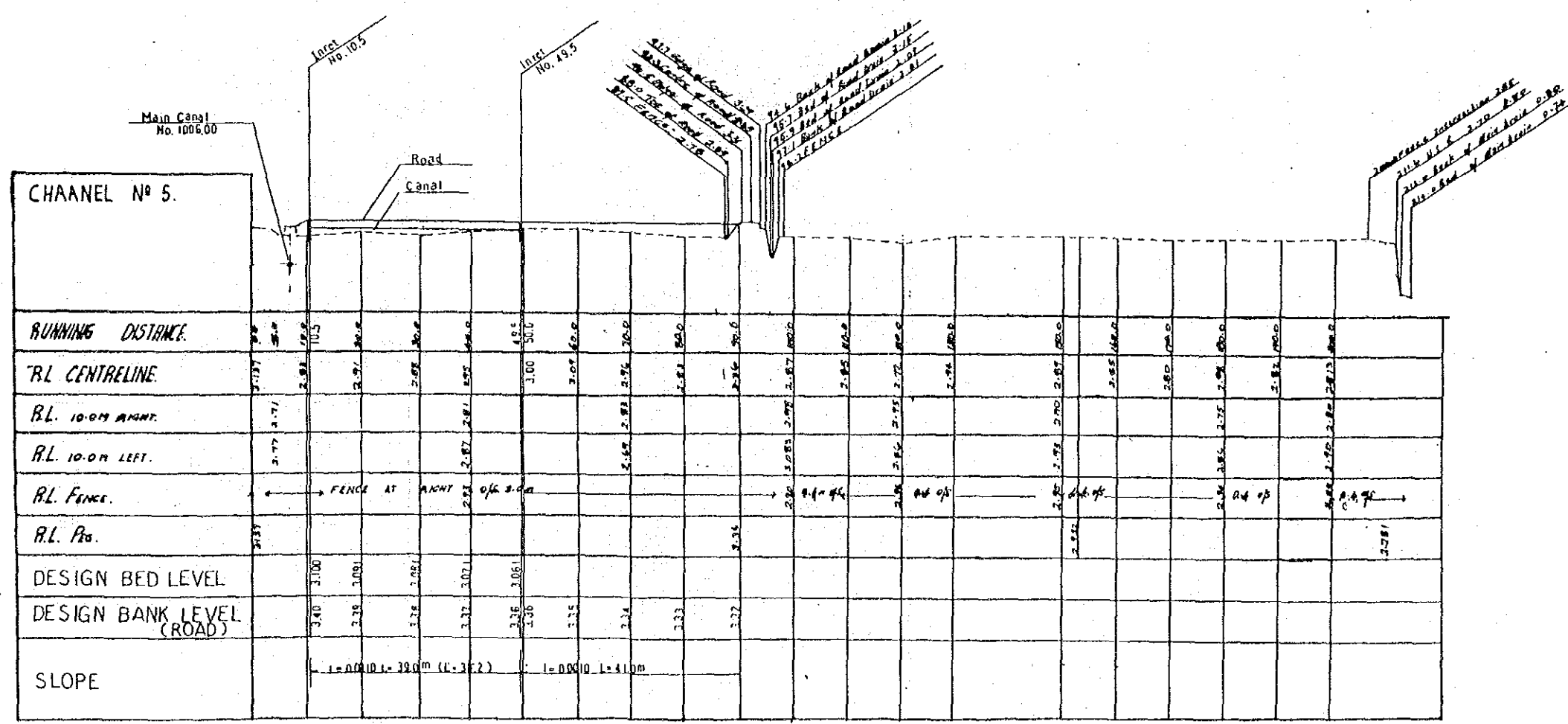
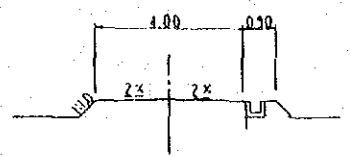
THE GOVERNMENT OF FIJI
**THE IMPROVEMENT OF RICE CULTIVATION
 TECHNOLOGY PROJECT**

TITLE OF DRAWING
 SECONDARY IRRIGATION CANAL (NO.1)
 & ROAD CROSS SECTIONAL PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY PNG. NO. TOKYO JAPAN 9

NOTES
 DATUM MSL
 BM 83/07
 RL 2.971.

TYPICAL SECTION



Reference Plans

RW 4800

MINISTRY OF
 PRIMARY INDUSTRIES
 DRAINAGE AND IRRIGATION
 DIVISION

JAPANESE ADVISORY PROJECT

CHANNEL NO. 5
 LONGITUDINAL SECTION.

SCALE OF METRES

HORIZONTAL : 1:500
 VERTICAL : 1:100

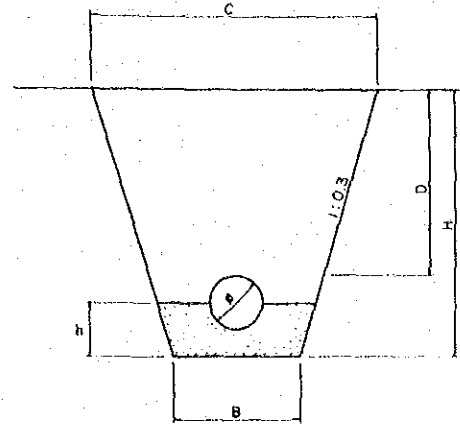
THE GOVERNMENT OF FIJI
 THE IMPROVEMENT OF RICE CULTIVATION
 TECHNOLOGY PROJECT

TITLE OF DRAWING
 SECONDARY IRRIGATION CANAL (NO.5) &
 ROAD LONGI, & CROSS SECTIONAL PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) TOKYO JAPAN

13

TYPICAL SECTION OF PIPE LINE

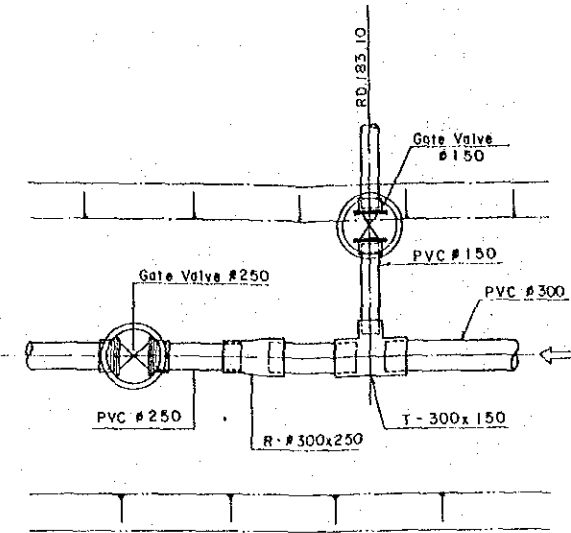


DIMENSION TABLE

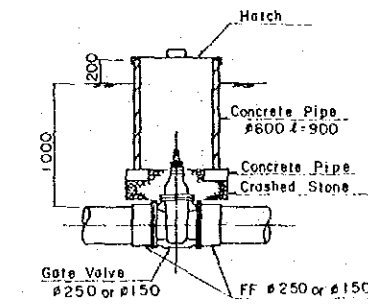
(Unit: mm.)

PVC	D	B	H	h	C
100	800	500	1064	207	1048
150	1000	500	1315	233	1315
200	1000	500	1366	258	1366
250	1000	600	1417	284	1417
300	1000	800	1468	309	1468
350	1000	850	1520	335	1520
75	800	500	1004	89	1102
125	1000	500	1255	215	1253

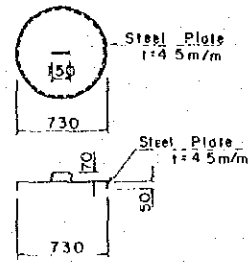
DIVISION WORKS TYPE-I



VALVE BOX

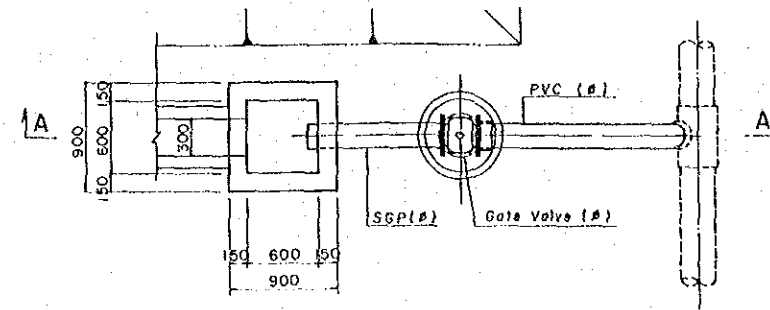


HATCH

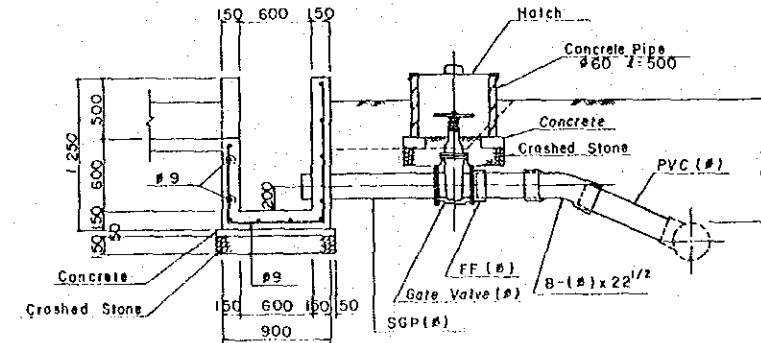


DIVISION WORKS TYPE-II
S=1:30

PLAN

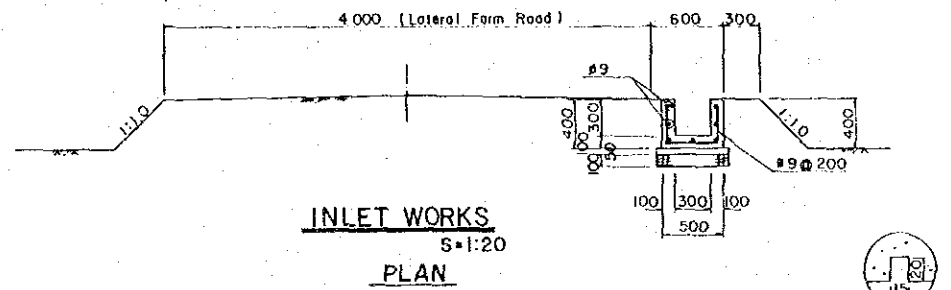


SECTION A-A

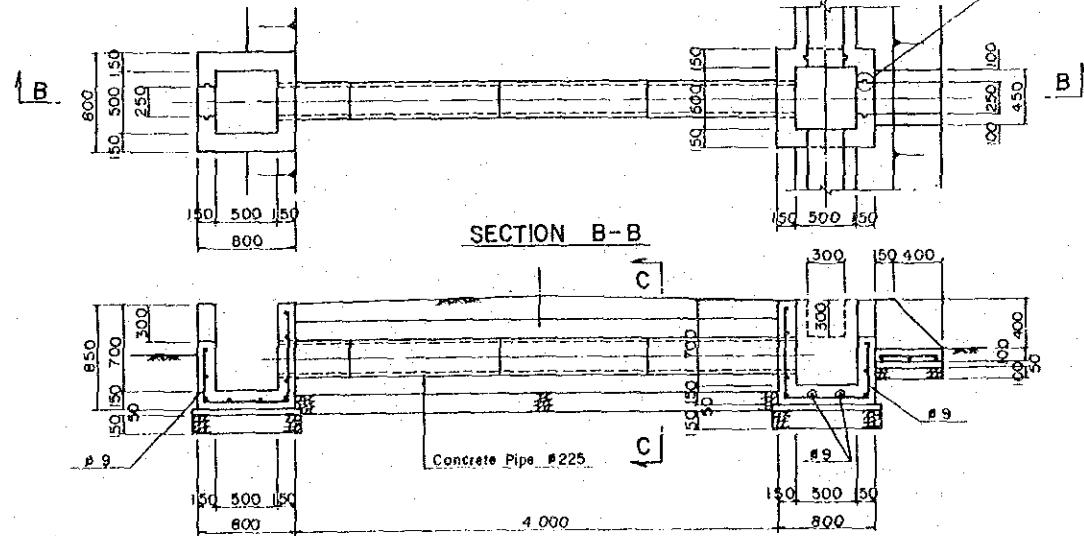


TYPE II-1	(#)-150
TYPE II-2	(#)-125

TYPICAL SECTION OF OPEN CANAL
S=1:30

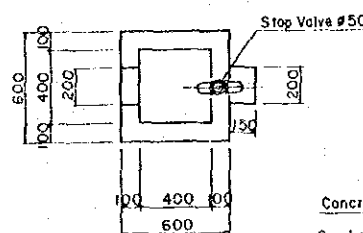


INLET WORKS
S=1:20
PLAN

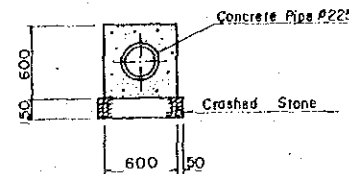


HYDRANT WORKS
S=1:20

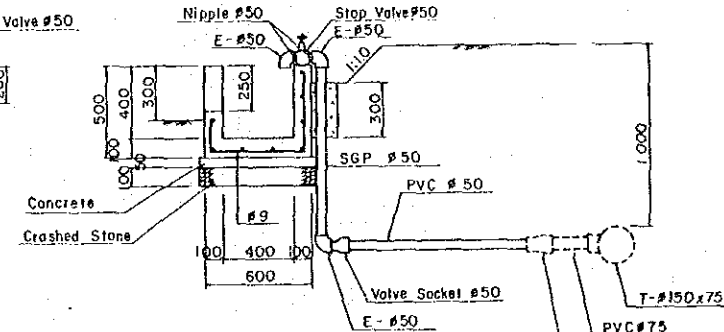
PLAN



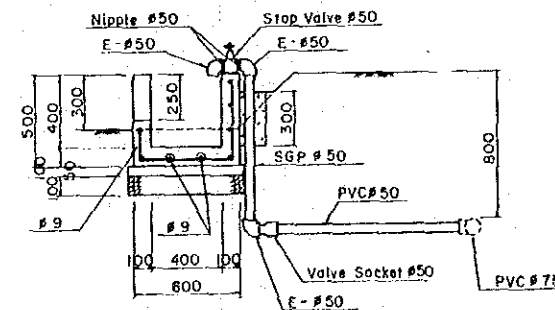
SECTION C-C



SECTION TYPE-I (SIC-1)



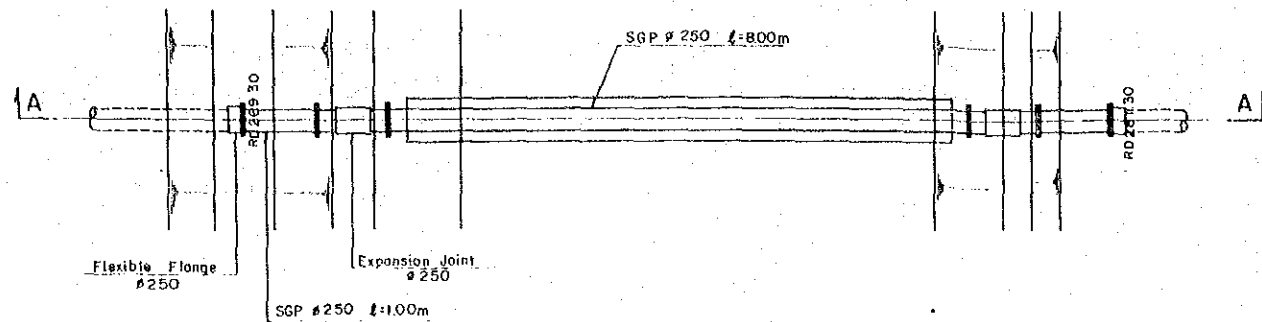
SECTION TYPE II (TIC)



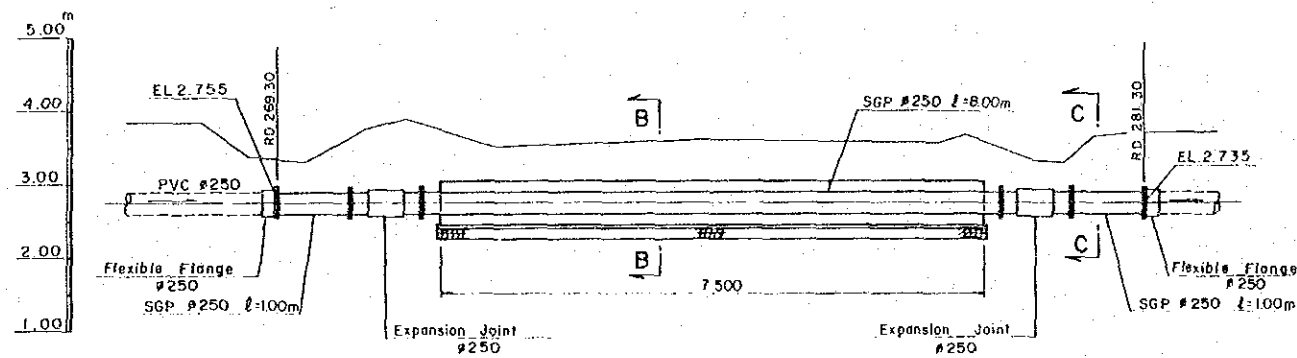
THE GOVERNMENT OF FIJI
THE IMPROVEMENT OF RICE CULTIVATION
TECHNOLOGY PROJECT
TITLE OF DRAWING
IRRIGATION PIPE FACILITIES
JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO JAPAN
DWG. NO. 15

ROAD CROSSING WORKS NO.1

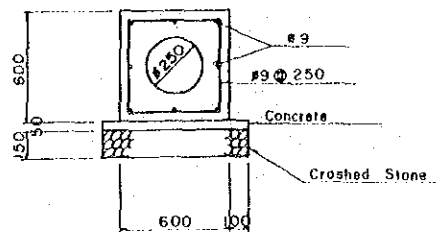
PLAN



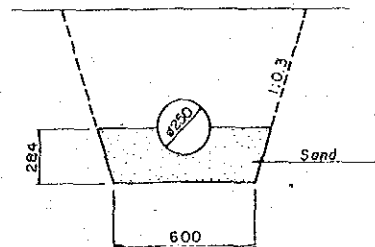
SECTION A-A



SECTION B-B
S=1:20



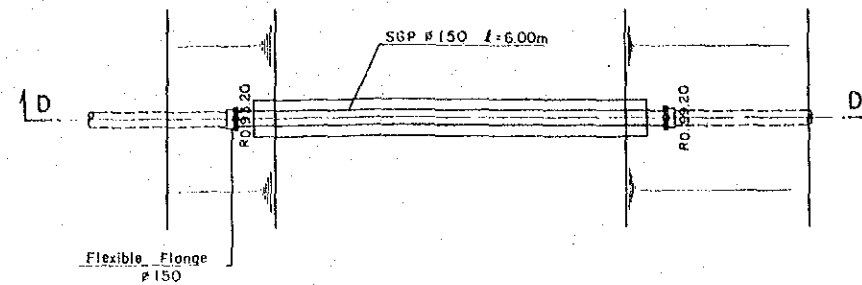
SECTION C-C
S=1:20



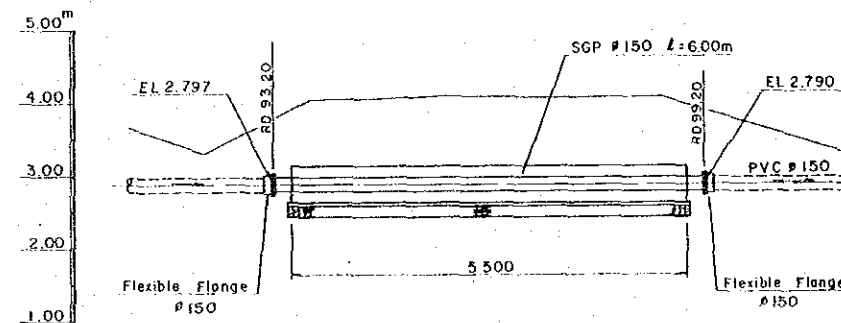
ROAD CROSSING WORKS NO.2

S=1:50

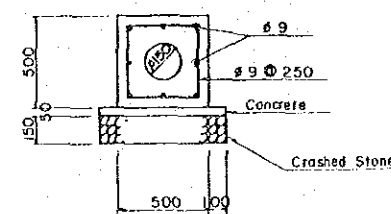
PLAN



SECTION D-D



SECTION E-E
S=1:20

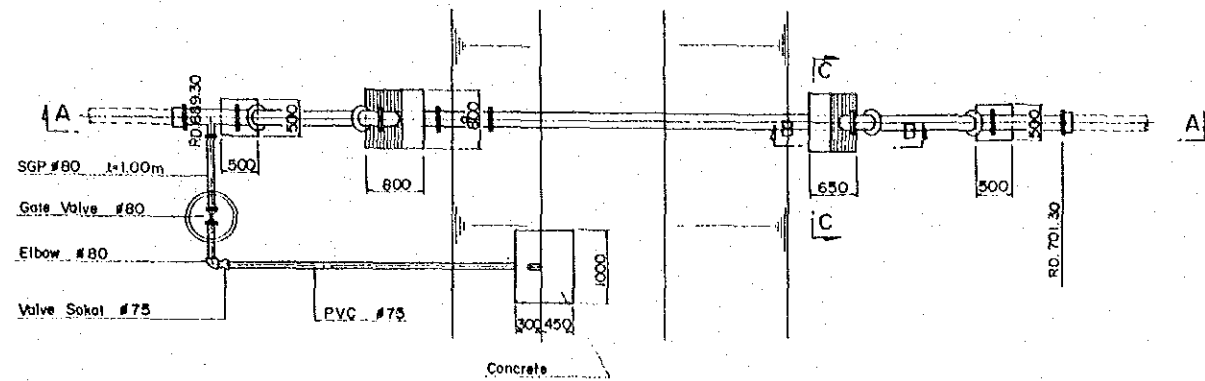


THE GOVERNMENT OF FIJI
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 TECHNOLOGY PROJECT
 TITLE OF DRAWING
 ROAD CROSSING WORKS PLAN
 JAPAN INTERNATIONAL COOPERATION AGENCY
 TOKYO JAPAN

DWG. NO
 16

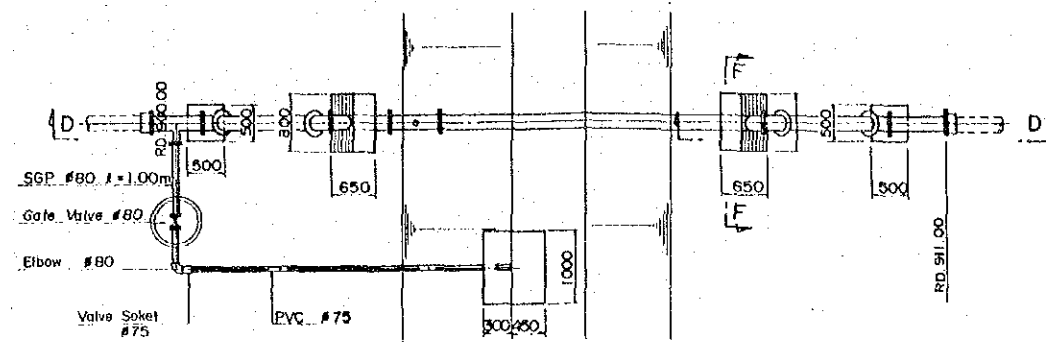
CANAL CROSSING WORKS NO.1
S=1:5

PLAN

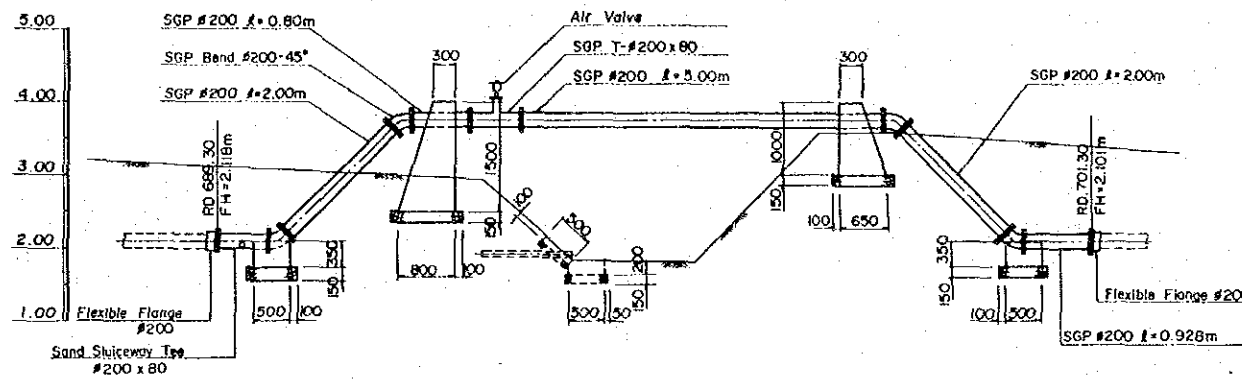


CANAL CROSSING WORKS NO.2
S=1:50

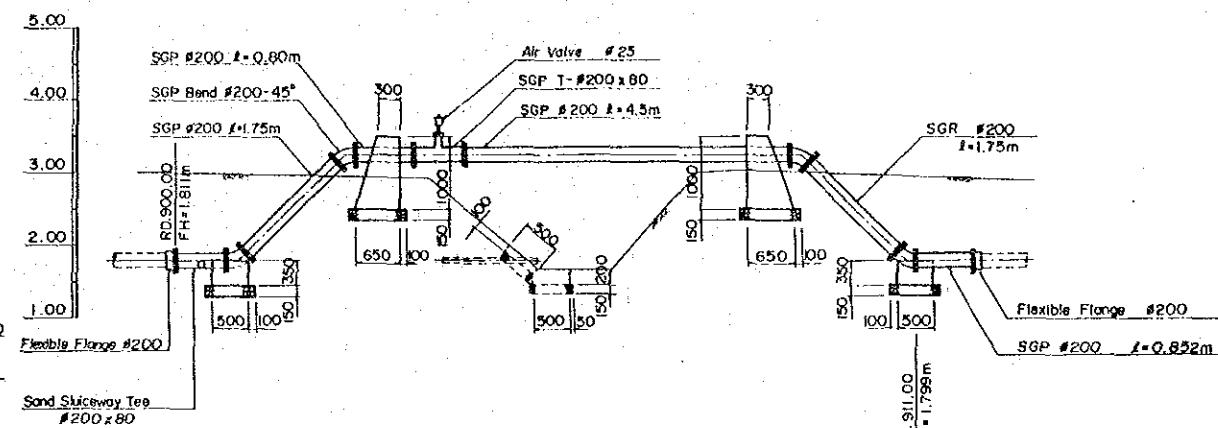
PLAN



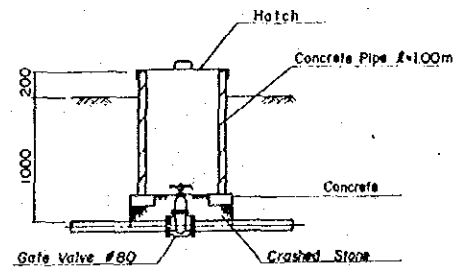
SECTION A-A



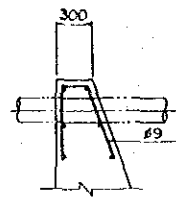
SECTION D-D



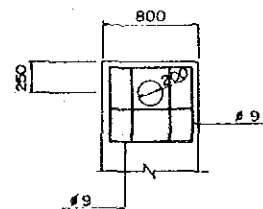
VALVE BOX



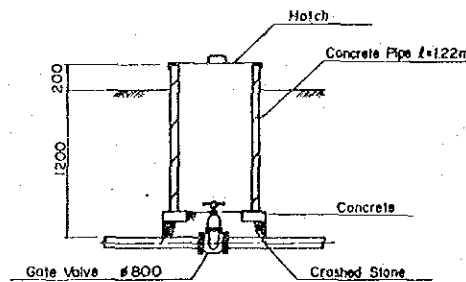
SECTION B-B
S=1:30



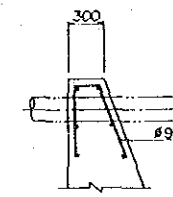
SECTION C-C
S=1:30



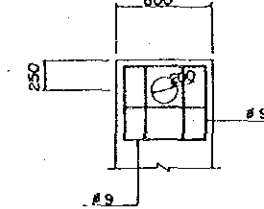
VALVE BOX



SECTION E-E
S=1:30

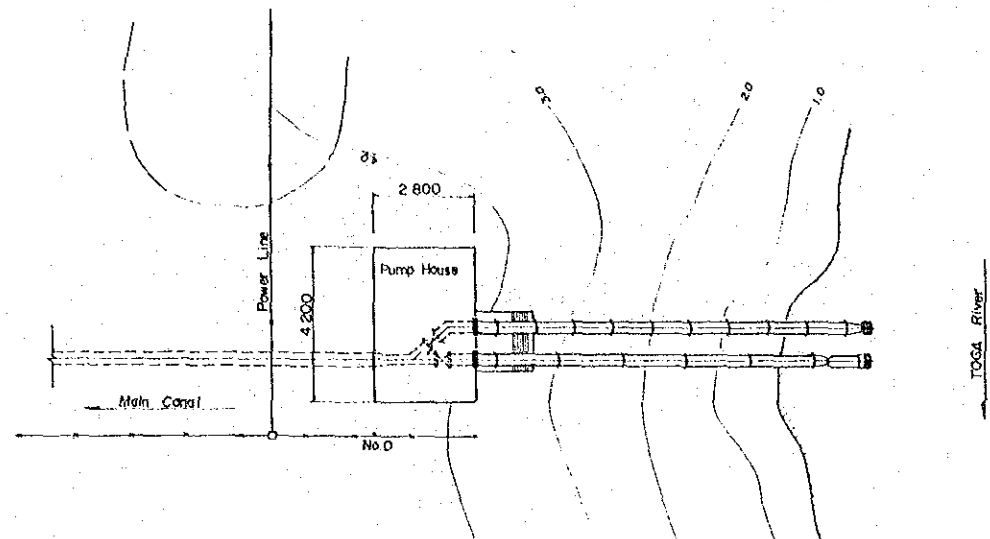


SECTION F-F
S=1:30

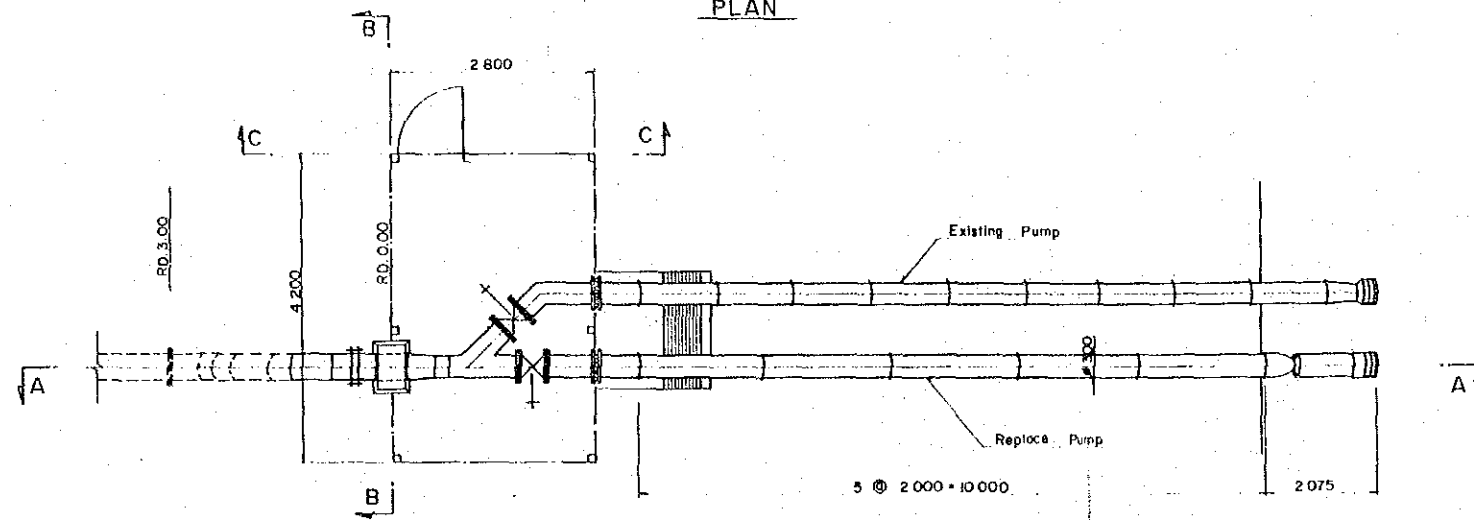


THE GOVERNMENT OF FIJI
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TECHNOLOGY PROJECT
TITLE OF DRAWING
CANAL CROSSING WORKS PLAN
JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO JAPAN
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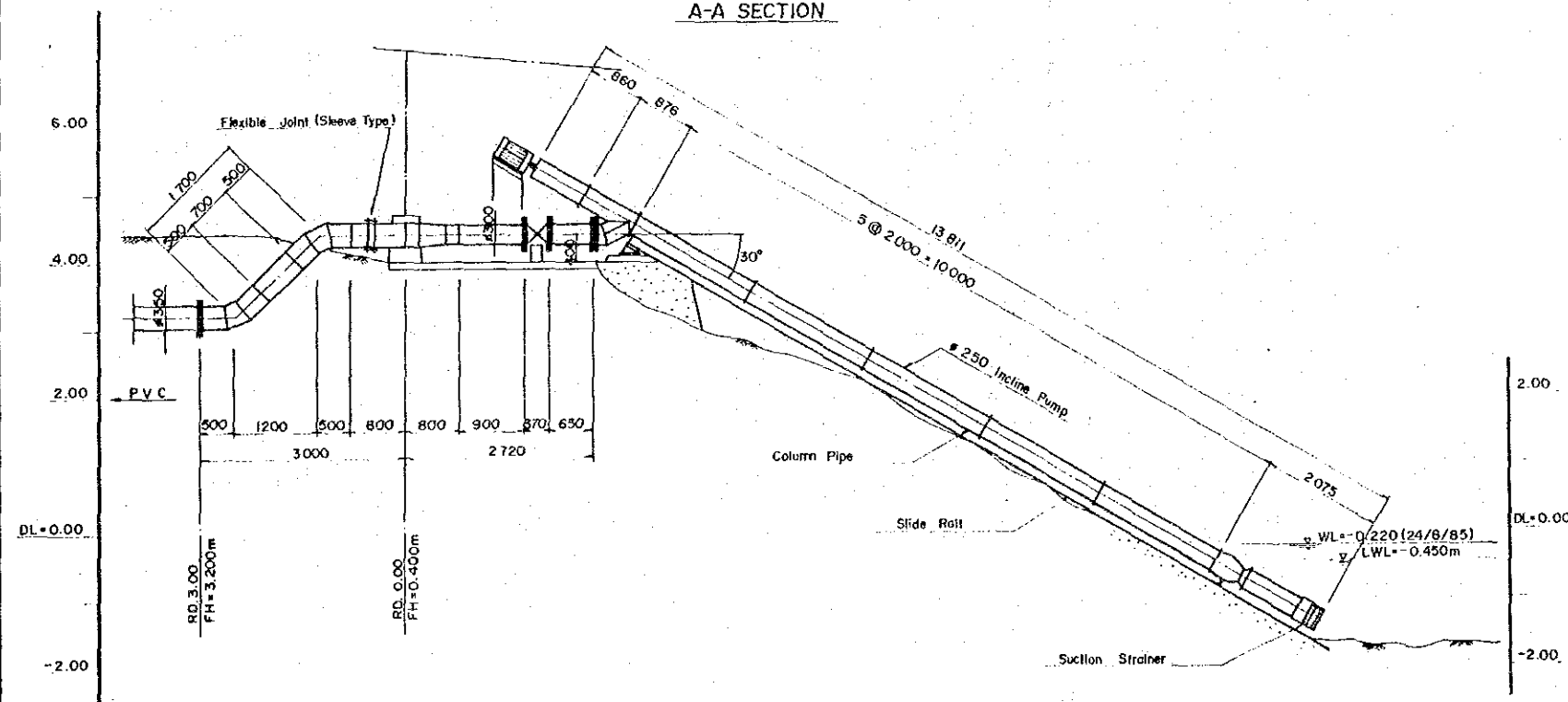
PUMP STATION PLAN



PLAN

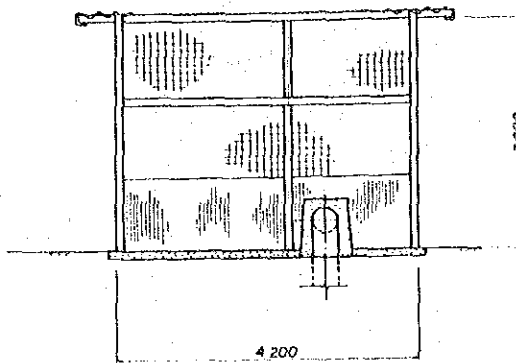


A-A SECTION

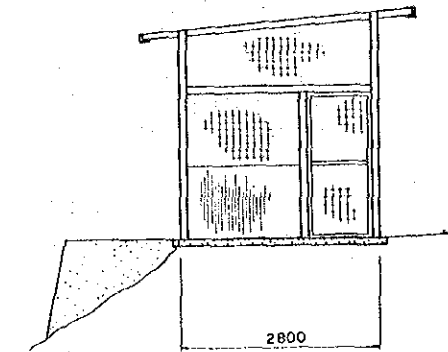


PUMP HOUSING PLAN

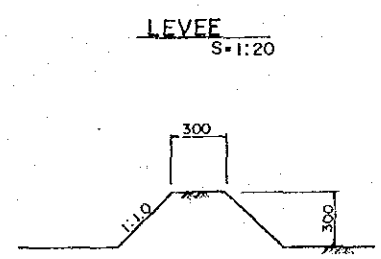
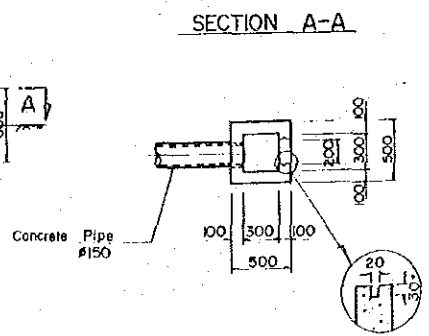
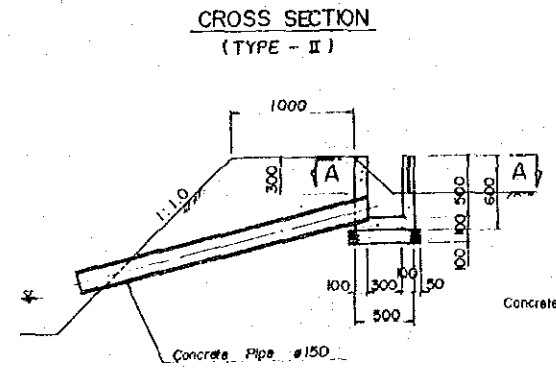
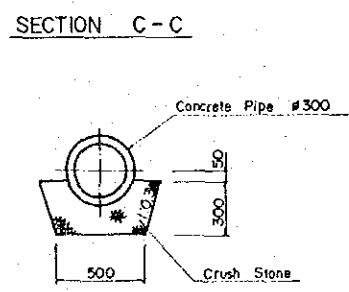
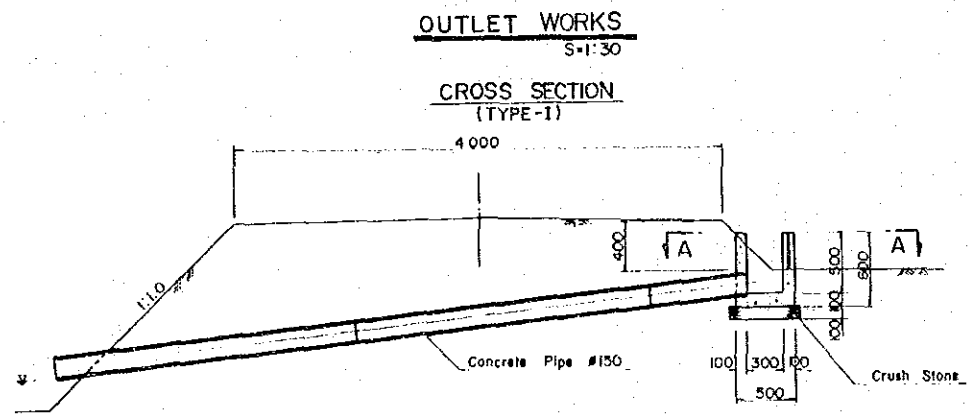
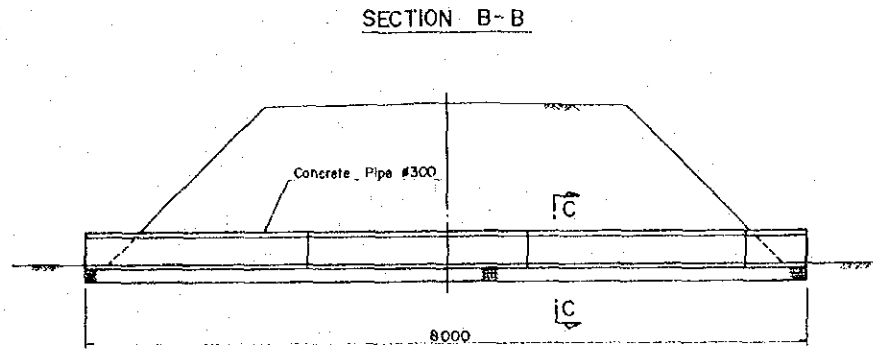
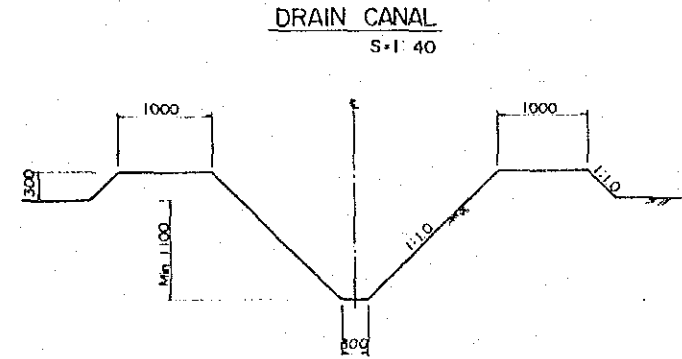
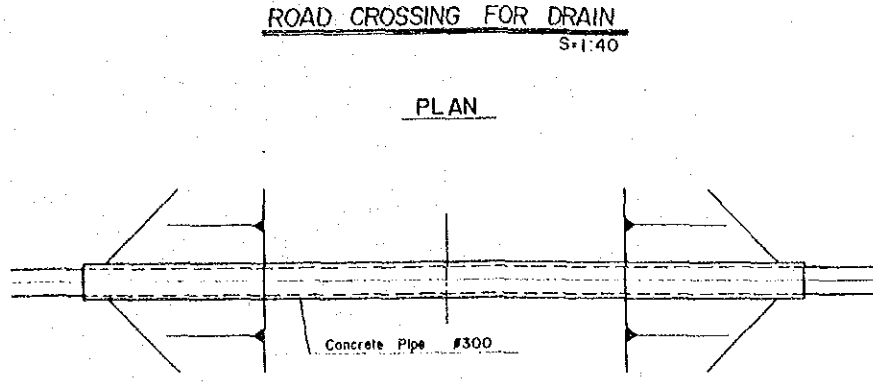
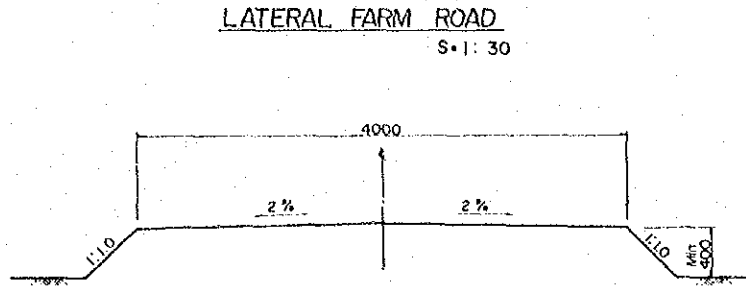
B-B SECTION



C-C SECTION



THE GOVERNMENT OF FIJI	
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TECHNOLOGY PROJECT	
TITLE OF DRAWING	
PUMP STATION PLAN	
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN	DWG. NO 18

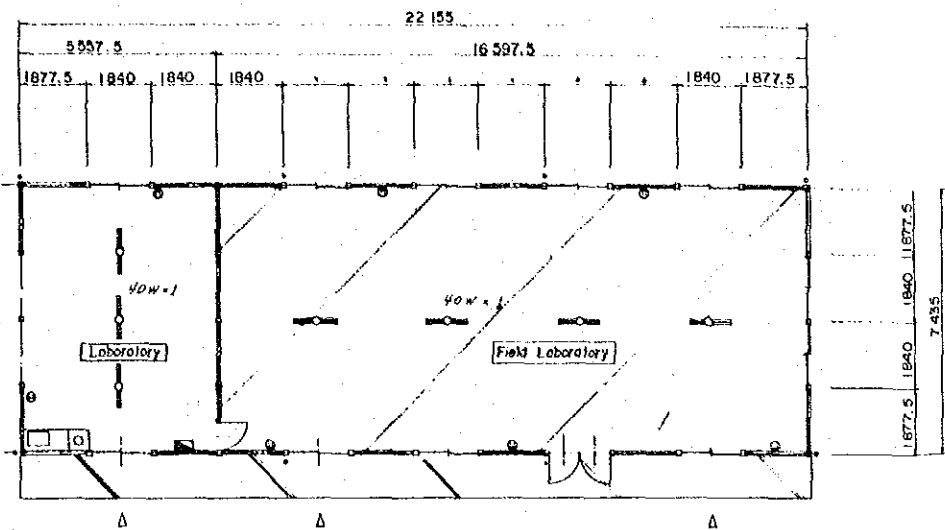


THE GOVERNMENT OF FIJI
THE IMPROVEMENT OF RICE CULTIVATION
TECHNOLOGY PROJECT

TITLE OF DRAWING
TYPICAL SECTIONS
OF ROAD, DRAINAGE CANAL AND OTHERS

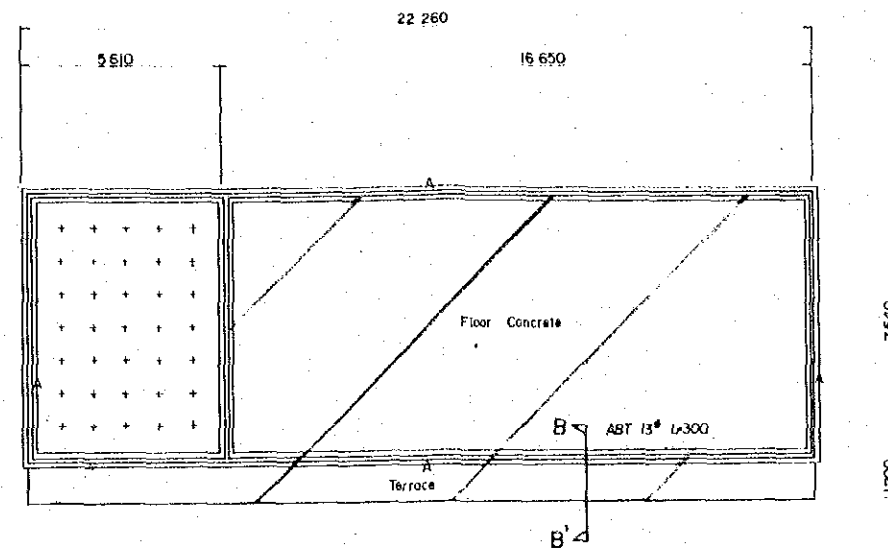
JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO JAPAN

DWG NO
21

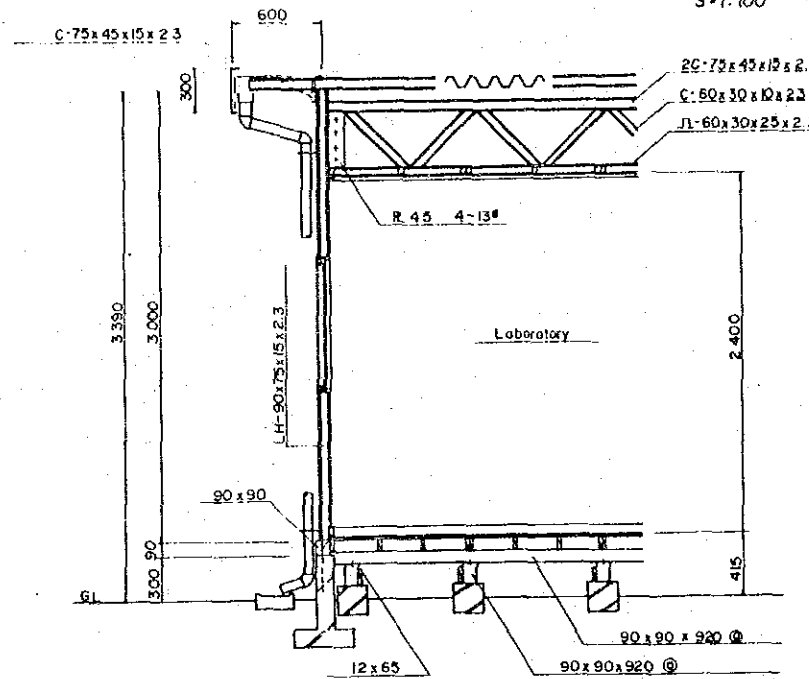


PLANE
S=1:100

A
D—[VIEWS]—B
C



FOUNDATION PLAN
S=1:100



SECTION

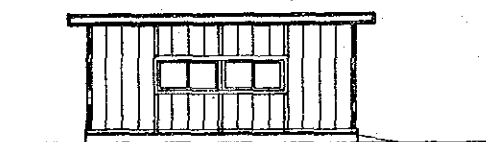
Specification	
Structurer	Lightweight Iron Structure
Foundation	Concrete
Outside Wall	Magnesium Carbonate Board
Roof	Roof Deck 0.5mm
Doors B Windows	Aluminum Sash Glass Thickness 3mm (Trans Parency)
Floor	Floor Concrete Flooring(Laboratory)
Wall Supporter	30 x 60 OP
Inside Wall	Print Plywood T=4mm
Ceiling Support	30 x 39 OP
Ceiling	Coloured Plywood T=3mm
Etc.	Roof Gutter - Coloured Galvanized Iron Plate Vertical Gutter - P.V.C Pipe



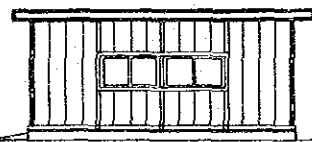
FRONT VIEW C
S=1:100



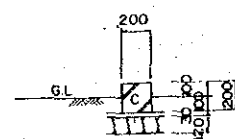
FRONT VIEW A
S=1:100



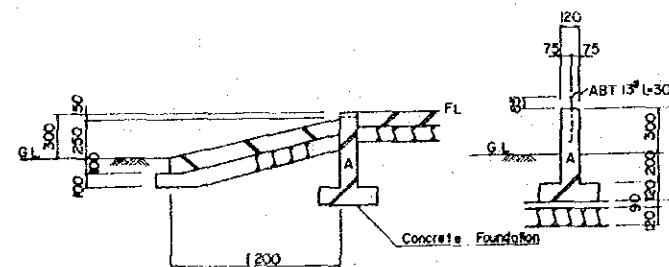
SIDE VIEW D
S=1:100



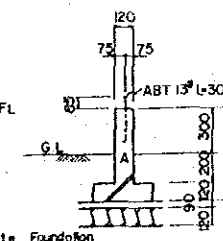
SIDE VIEW B
S=1:100



DETAILED C



DETAILED B-B'



DETAILED A

THE GOVERNMENT OF FIJI
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TECHNOLOGY PROJECT
TITLE OF DRAWING
FIELD LABORATORY PLAN
JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO JAPAN
DWS NO
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JICA