

No. 03

REPUBLIC OF INDONESIA

MINISTRY OF PUBLIC WORKS  
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT

FEASIBILITY STUDY  
ON  
THE SANREGO IRRIGATION PROJECT

ANNEX VOLUME-III

XI. DRAWINGS

MARCH 1983

JAPAN INTERNATIONAL COOPERATION AGENCY

TOKYO, JAPAN

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**FEASIBILITY STUDY  
ON  
THE SANREGO IRRIGATION PROJECT**

**ANNEX VOLUME-III**

**XI. DRAWINGS**

**MARCH 1983**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

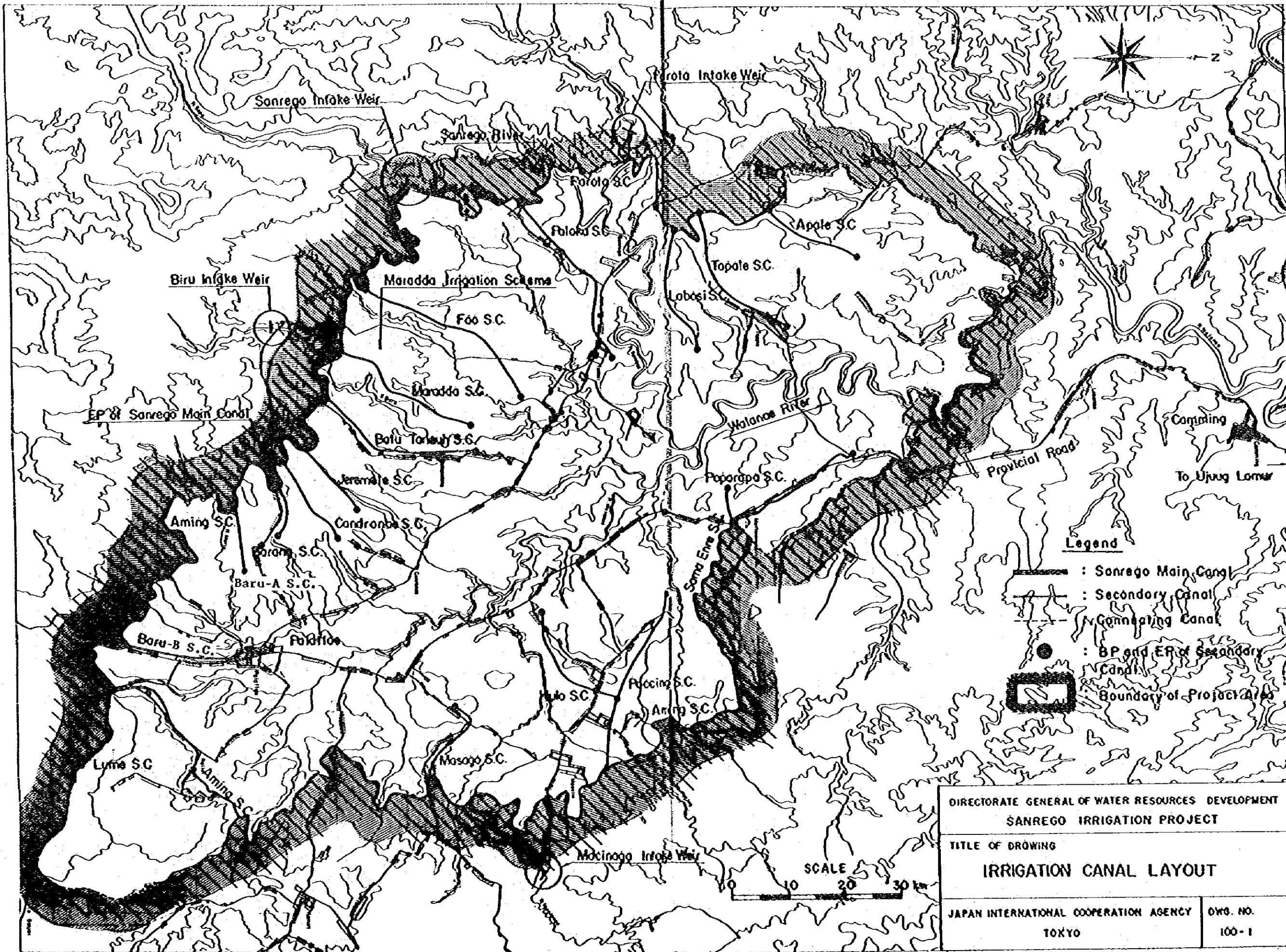
**TOKYO, JAPAN**

|                  |            |
|------------------|------------|
| 国際協力事業団          |            |
| 受入<br>月日 84.9.24 | 108        |
| 登録No. 09836      | 833<br>AET |

ANNEX-XII DRAWINGS

LIST OF DRAWINGS

| SERIAL NO. | DWG. NO. | TITLE   |
|------------|----------|---|
| 1          | 100 - 1  | IRRIGATION CANAL LAYOUT                           |
| 2          | 100 - 2  | IRRIGATION DIAGRAM                                |
| 3          | 100 - 3  | DRAINAGE DIAGRAM                                  |
| 4          | 200 - 1  | PLAN OF SANREGO INTAKE WEIR                       |
| 5          | 200 - 2  | PROFILE OF SANREGO INTAKE WEIR                    |
| 6          | 200 - 3  | PROFILE AND TYPICAL CROSS SECTION OF CLOSING DIKE |
| 7          | 200 - 4  | PAROTA INTAKE WEIR                                |
| 8          | 200 - 5  | BIRU INTAKE WEIR                                  |
| 9          | 200 - 6  | MACINAGA INTAKE WEIR                              |
| 10         | 200 - 7  | TYPICAL DRAWING OF THREE CONNECTING CANALS        |
| 11         | 300 - 1  | TYPICAL DRAWING OF TURNOUT, TYPE I & II           |
| 12         | 300 - 2  | TYPICAL DRAWING OF TURNOUT, TYPE III, IV & V      |
| 13         | 300 - 3  | TYPICAL DRAWING OF DRAIN CULVERT, TYPE I & II     |
| 14         | 300 - 4  | TYPICAL DRAWING OF DRAIN CULVERT, TYPE III & DROP |
| 15         | 300 - 5  | AQUEDUCT OF MARADDA, SANREGO AND PAROTA           |
| 16         | 300 - 6  | TYPICAL DRAWING OF CHUTE AND BRIDGE               |
| 17         | 400 - 1  | PLAN AND PROFILE OF SANREGO MAIN CANAL ( 1/10)    |
| 18         | 400 - 2  | PLAN AND PROFILE OF SANREGO MAIN CANAL ( 2/10)    |
| 19         | 400 - 3  | PLAN AND PROFILE OF SANREGO MAIN CANAL ( 3/10)    |
| 20         | 400 - 4  | PLAN AND PROFILE OF SANREGO MAIN CANAL ( 4/10)    |
| 21         | 400 - 5  | PLAN AND PROFILE OF SANREGO MAIN CANAL ( 5/10)    |
| 22         | 400 - 6  | PLAN AND PROFILE OF SANREGO MAIN CANAL ( 6/10)    |
| 23         | 400 - 7  | PLAN AND PROFILE OF SANREGO MAIN CANAL ( 7/10)    |
| 24         | 400 - 8  | PLAN AND PROFILE OF SANREGO MAIN CANAL ( 8/10)    |
| 25         | 400 - 9  | PLAN AND PROFILE OF SANREGO MAIN CANAL ( 9/10)    |
| 26         | 400 - 10 | PLAN AND PROFILE OF SANREGO MAIN CANAL (10/10)    |



Biru Intake Weir

Sanrego Intake Weir

Poroto Intake Weir

Foo S.C.

Topale S.C.

EP of Sanrego Main Canal

Maradda Irrigation Scheme

Labosi S.C.

Maradda S.C.

Walanae River

Bolu Tolu S.C.

Poporopa S.C.

Jeramale S.C.

Legend

Aming S.C.

Condrona S.C.

— : Sanrego Main Canal

Sorani S.C.

- - - : Secondary Canal

Baru-A S.C.

- · - · - : Connecting Canal

Baru-B S.C.

Falaflo

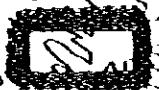
● : BP and EP of Secondary Canal

Lima S.C.

Aming S.C.

Mulo S.C.

Pucing S.C.



□ : Boundary of Project Area

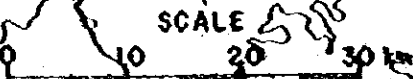
Aming S.C.

Masogo S.C.

Mociraga Intake Weir

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
SANREGO IRRIGATION PROJECT

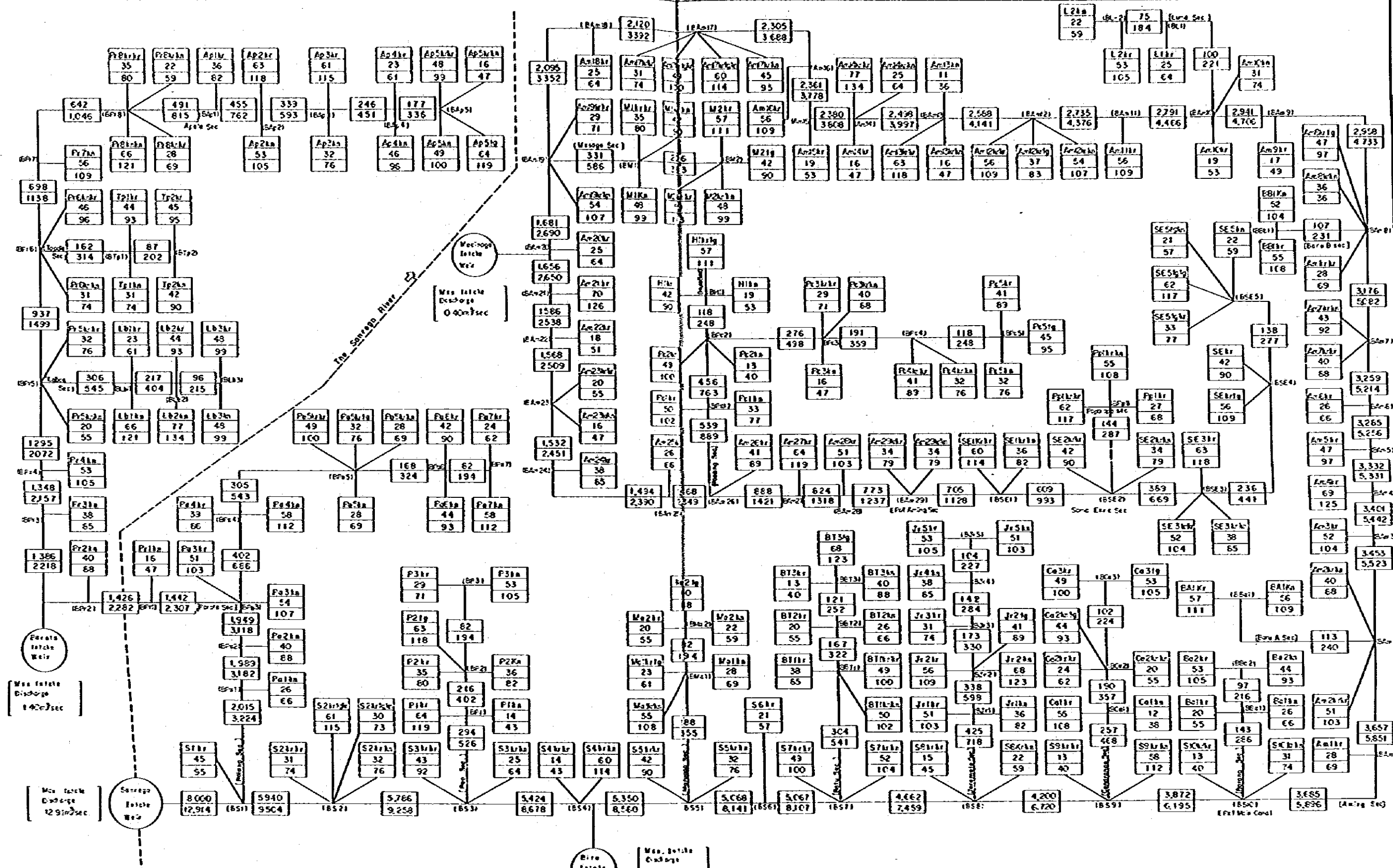
TITLE OF DRAWING  
IRRIGATION CANAL LAYOUT



JAPAN INTERNATIONAL COOPERATION AGENCY  
TOKYO

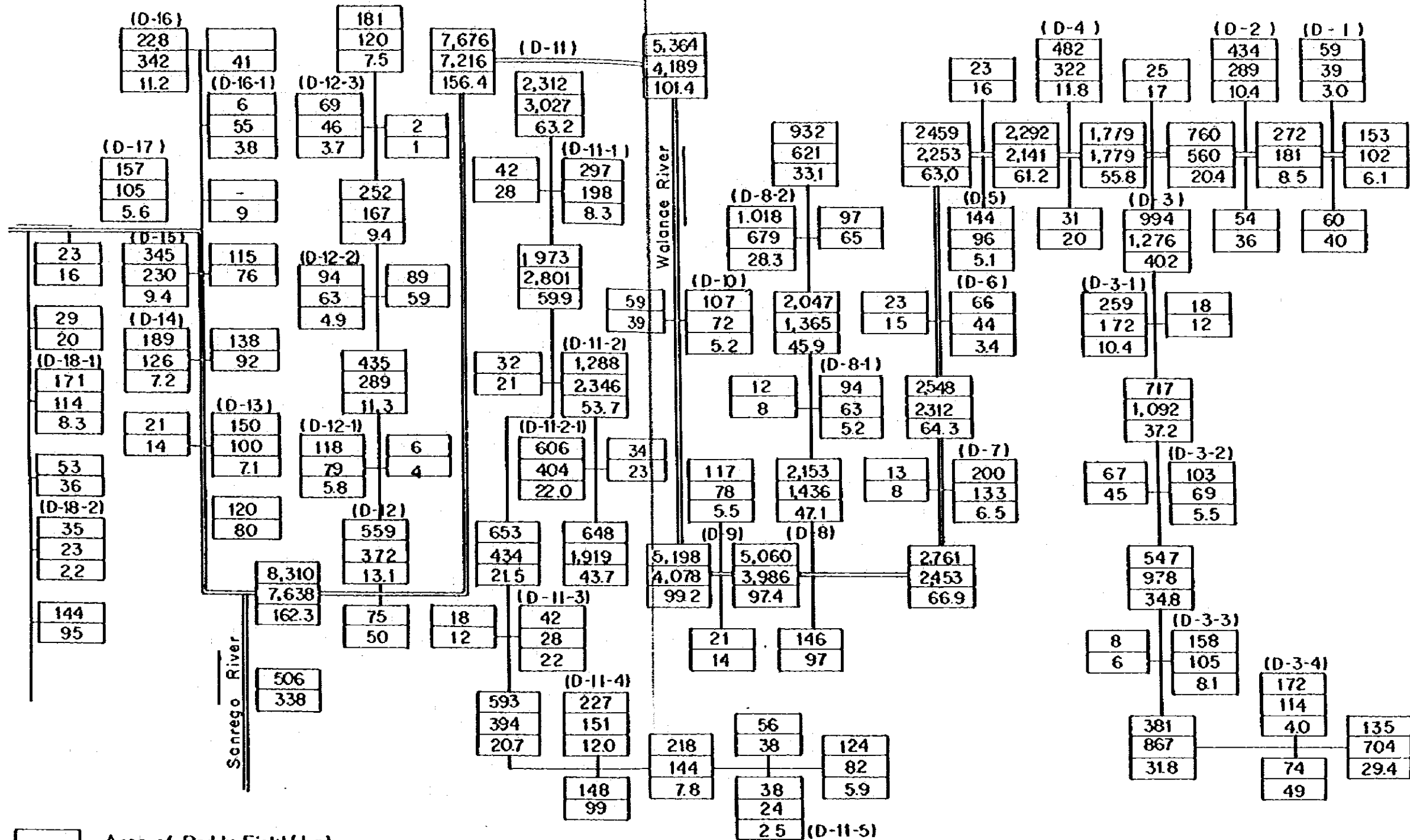
DWG. NO.  
100-1





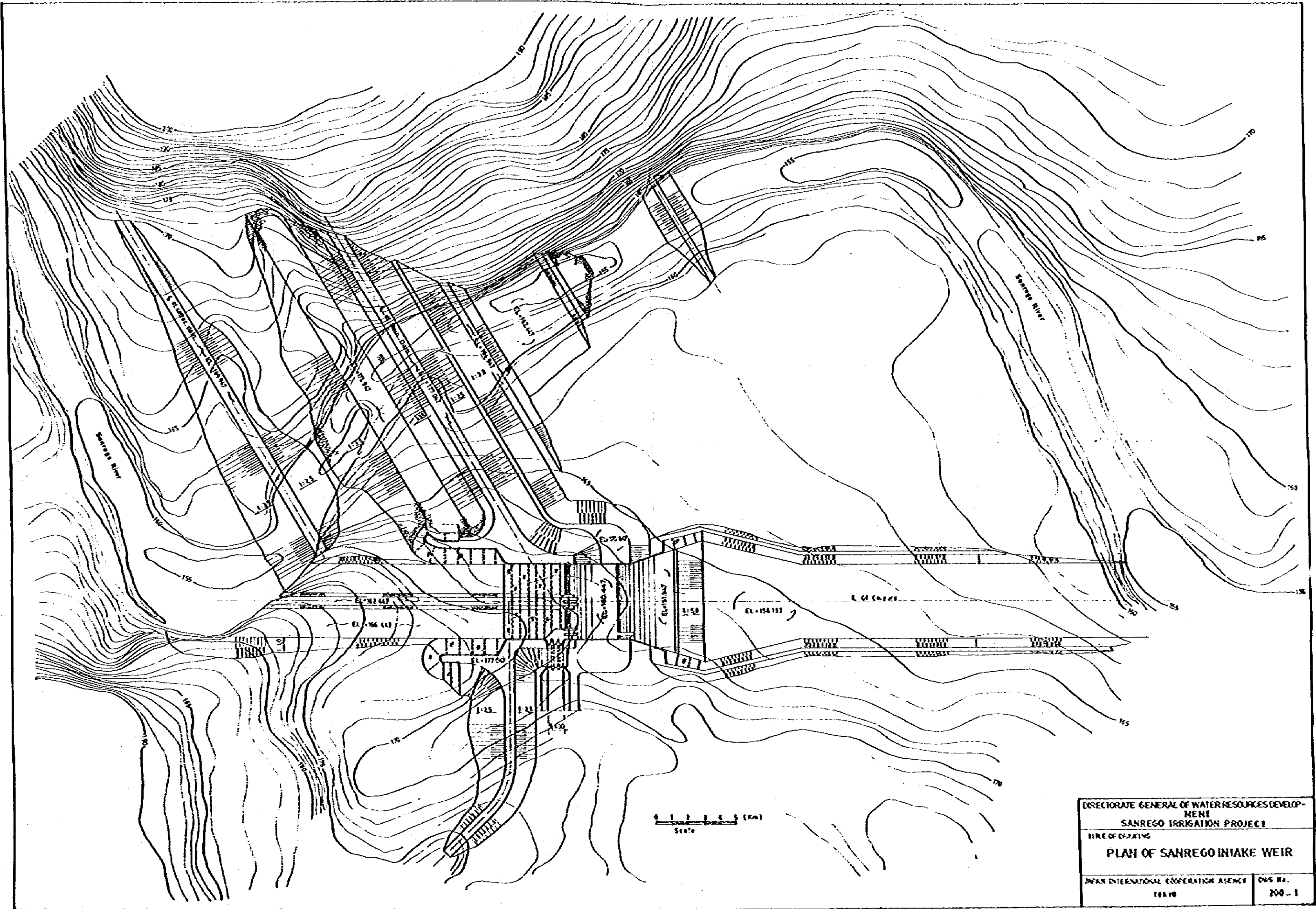
- LEGEND**
- : Name of Tertiary Block
  - : Net Irrigate Area (ha)
  - : Design Water Discharge (lit/sec)
  - : Abandoned Irrigate Area (ha)
  - : Design Water Discharge (lit/sec)

DISCRETE GENERAL OF WATER RESOURCES DEVELOPMENT  
**SANREGO IRRIGATION PROJECT**  
 TITLE OF DRAWING  
**IRRIGATION DIAGRAM**  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO  
 C/S NO.  
 100-2

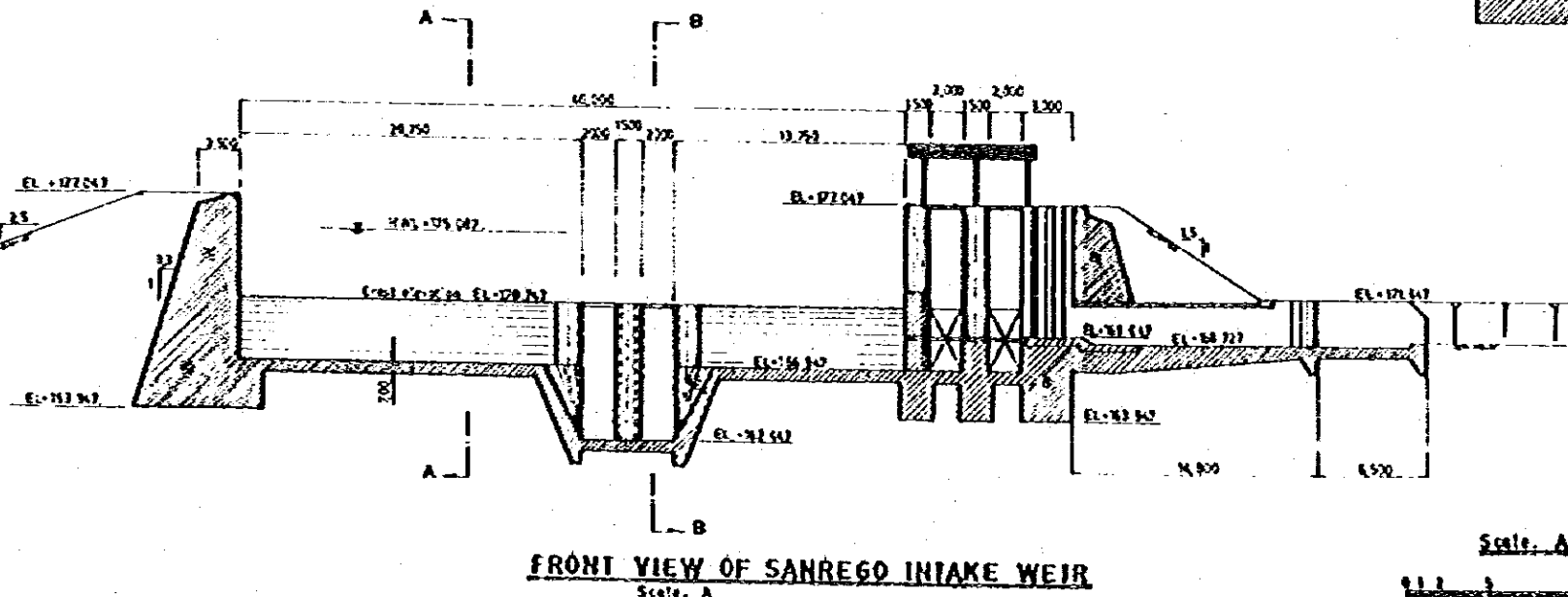
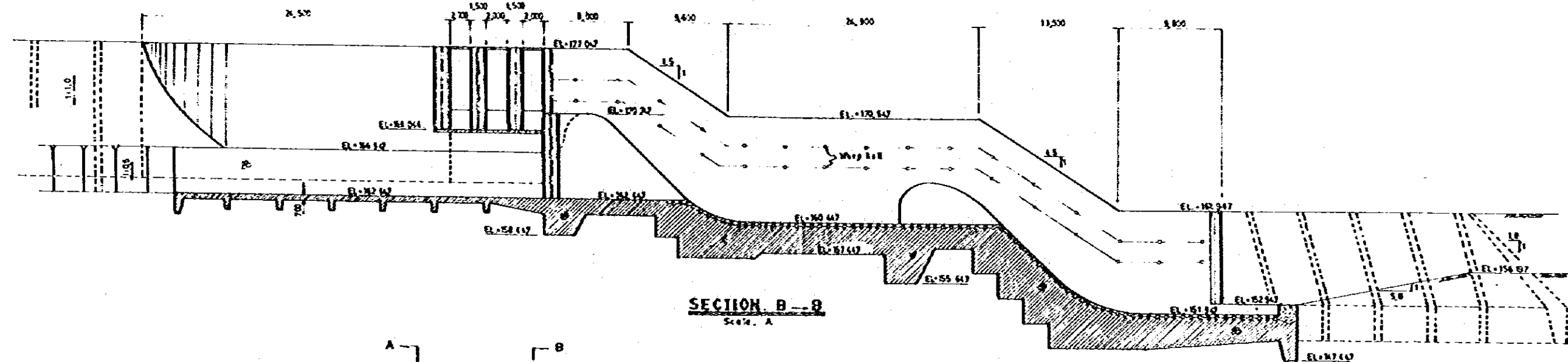
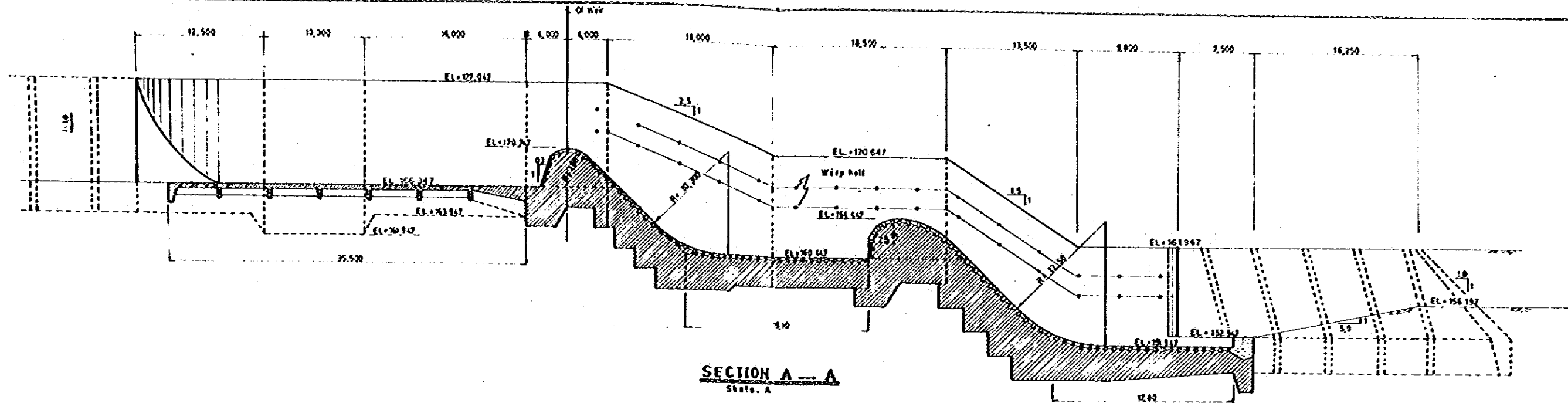


- Area of Paddy Field (ha)
- Area of non Paddy Field (ha)
- Accumulated Area of Paddy Field (ha)
- Accumulated Area of non Paddy Field (ha)
- Design Drainage Water Discharge (m<sup>3</sup>/sec.)
- Main Stream of the Walance and the Sanrego Rivers.
- Tributaries as Mayor Drains

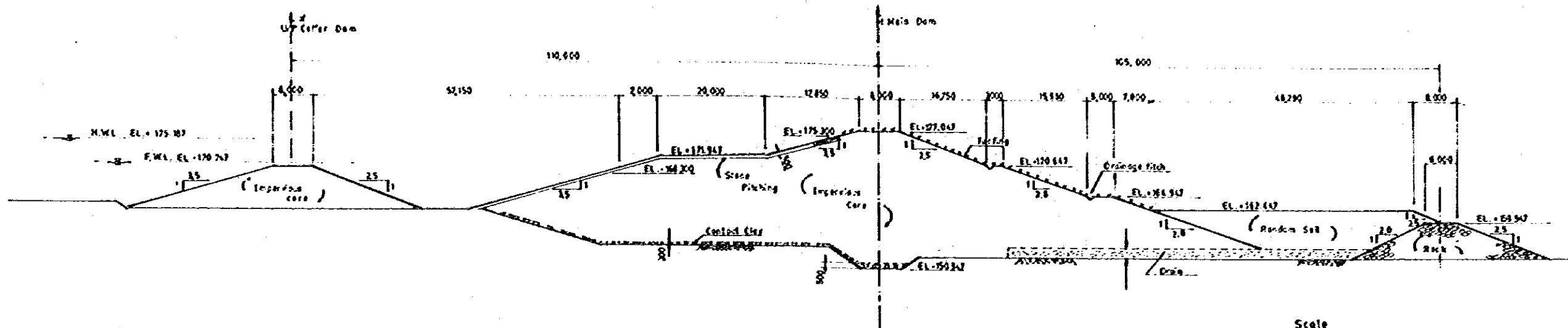
|  |                  |
|--|------------------|
| DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT |                  |
| SANREGO IRRIGATION PROJECT                         |                  |
| TITLE OF DRAWING                                   |                  |
| <b>DRAINAGE DIAGRAM</b>                            |                  |
| JAPAN INTERNATIONAL COOPERATION AGENCY<br>TOKYO    | DWG. NO<br>100-3 |



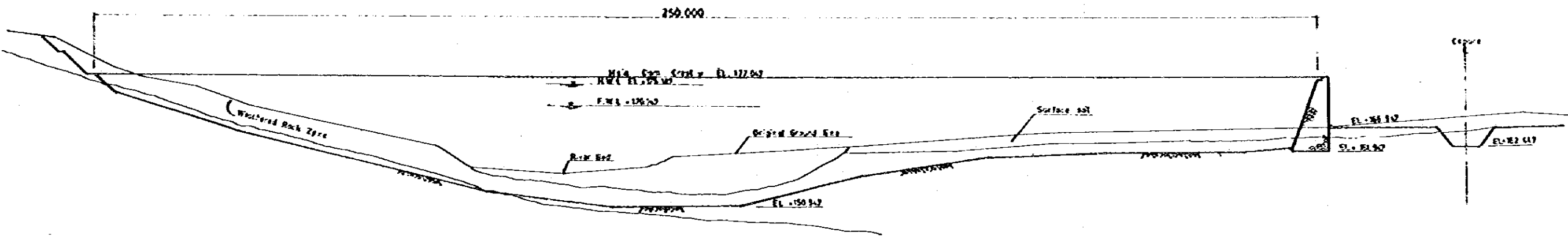
|  |          |
|--|----------|
| DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT |          |
| SANREGO IRRIGATION PROJECT                         |          |
| TITLE OF DRAWING                                   |          |
| PLAN OF SANREGO INTAKE WEIR                        |          |
| UNEP INTERNATIONAL COOPERATION AGENCY              | DWG. NO. |
| 10070  | 200-1    |



|   |                    |
|---|--------------------|
| DIRECTORAT GENERAL OF WATER RESOURCES DEVELOPMENT<br>SANREGO IRRIGATION PROJECT |                    |
| TITLE OF DRAWING<br>PROFILE OF SANREGO INTAKE WEIR                              |                    |
| JAPAN INTERNATIONAL COOPERATION AGENCY  | DWG. NO.<br>1070-2 |

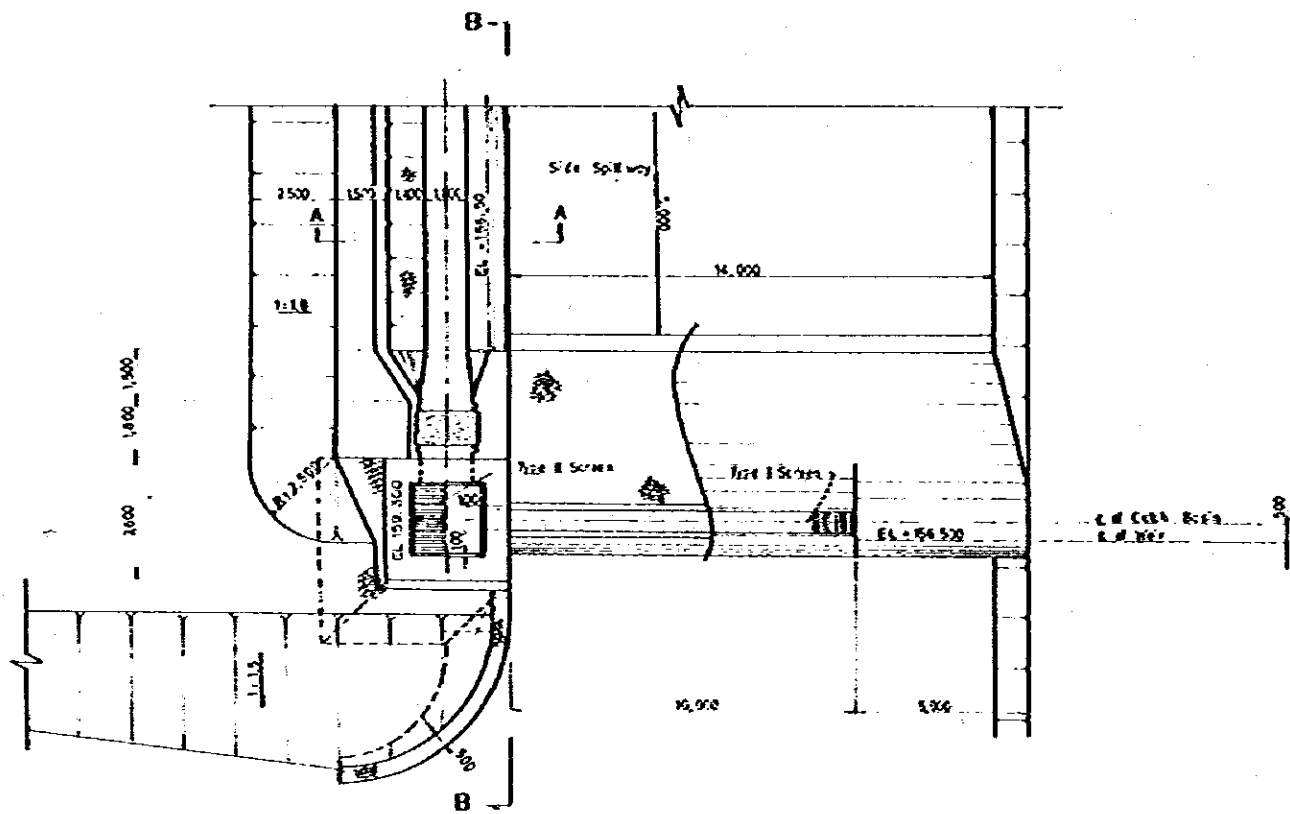


**TYPICAL CROSS SECTION OF CLOSING DIKE & VS COFFERDAM**  
(Homogeneous Type)

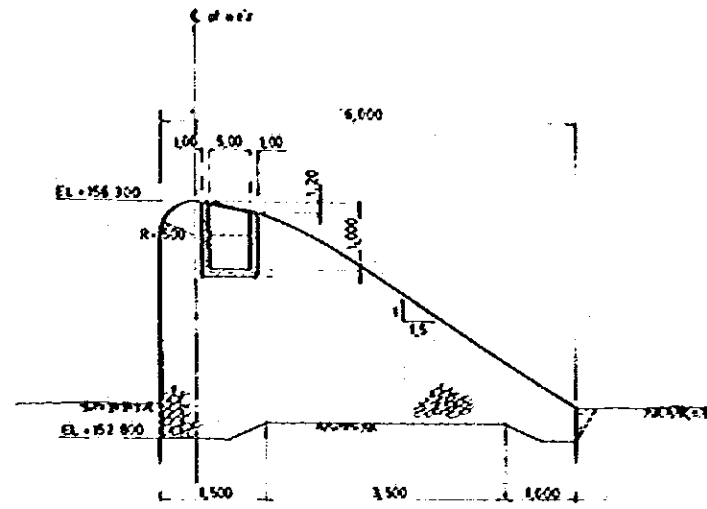


**PROFILE OF CLOSING DIKE**

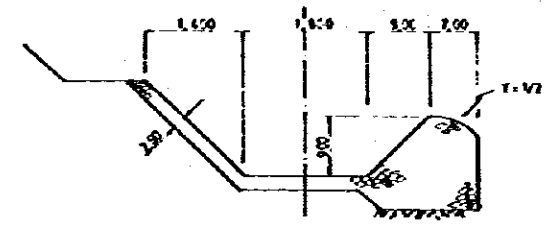
|  |         |
|--|---------|
| DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT |         |
| SANREGO IRRIGATION PROJECT                         |         |
| TITLE OF DRAWING                                   |         |
| PROFILE AND TYPICAL CROSS SECTION OF CLOSING DIKE  |         |
| JAPAN INTERNATIONAL COOPERATION AGENCY             | OWS No. |
| 10X10  | 200-3   |



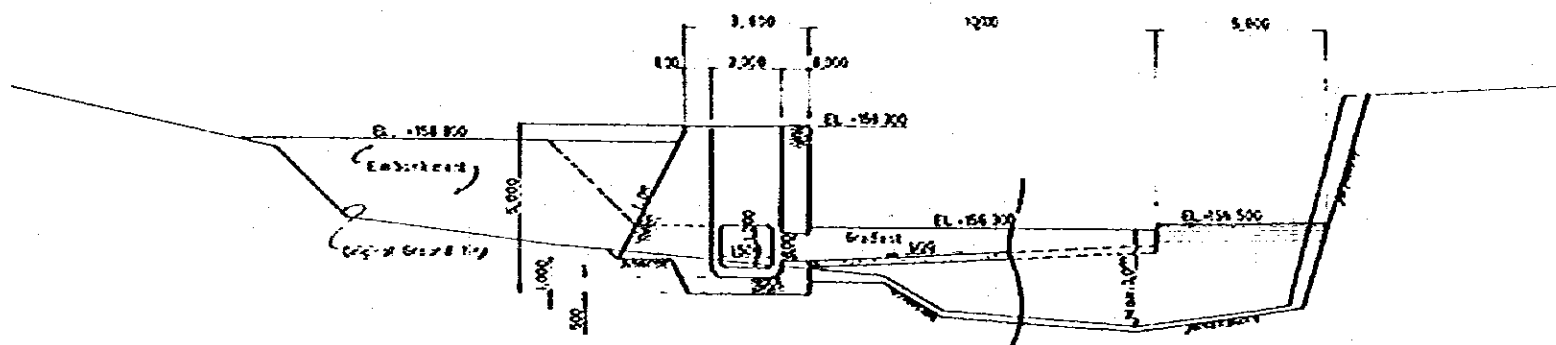
**PLAN**  
Scale A



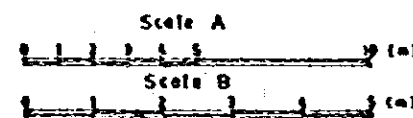
**CROSS SECTION WEIR**  
Scale B



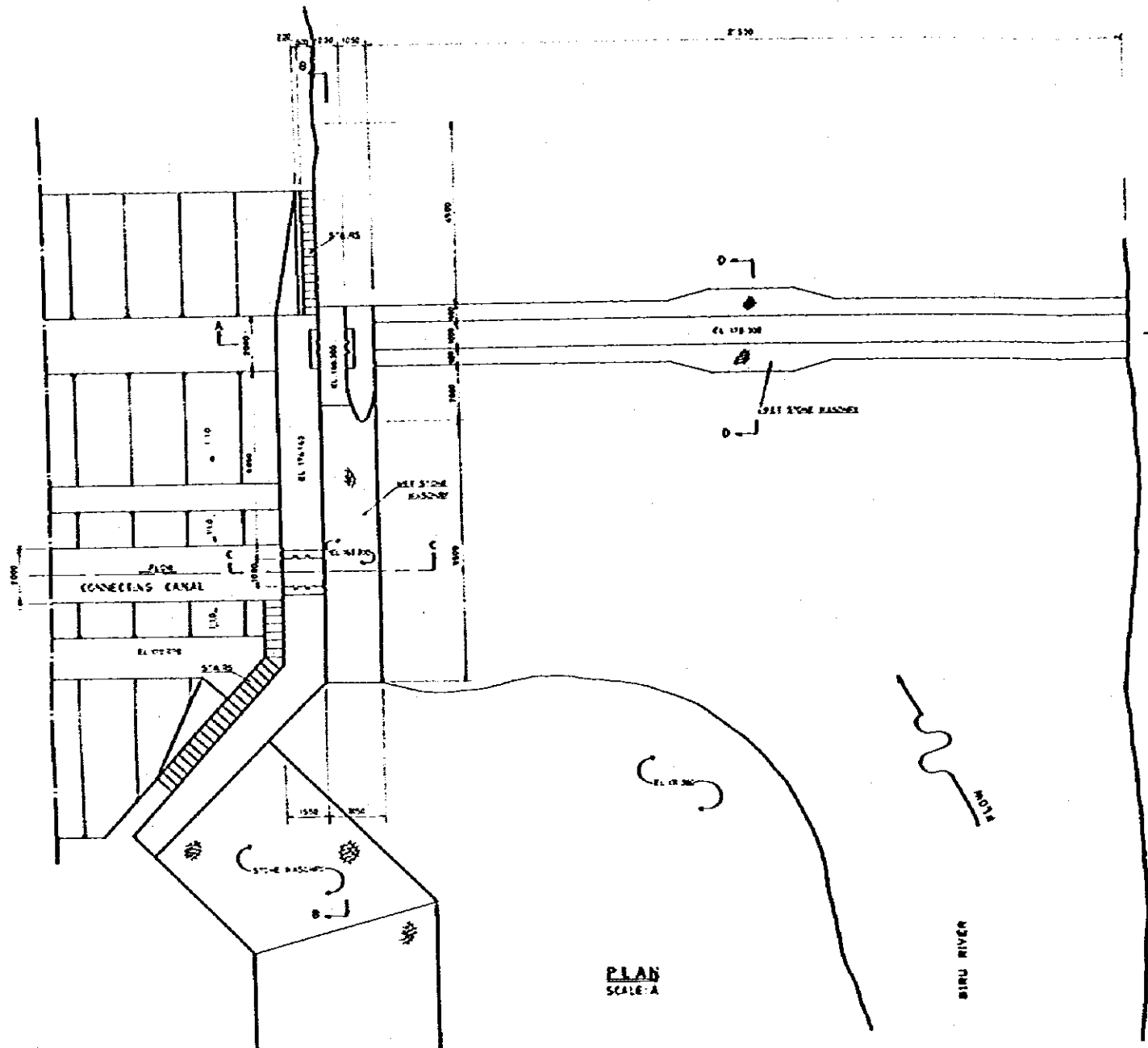
**SECTION A-A**  
Scale B



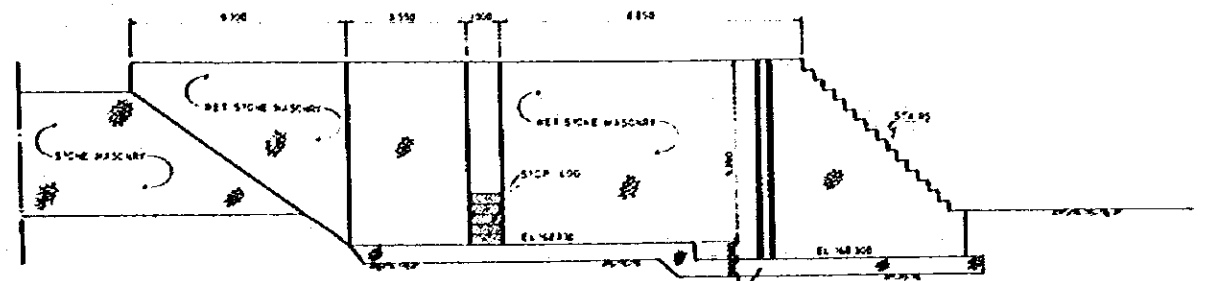
**PROFILE**  
Scale A



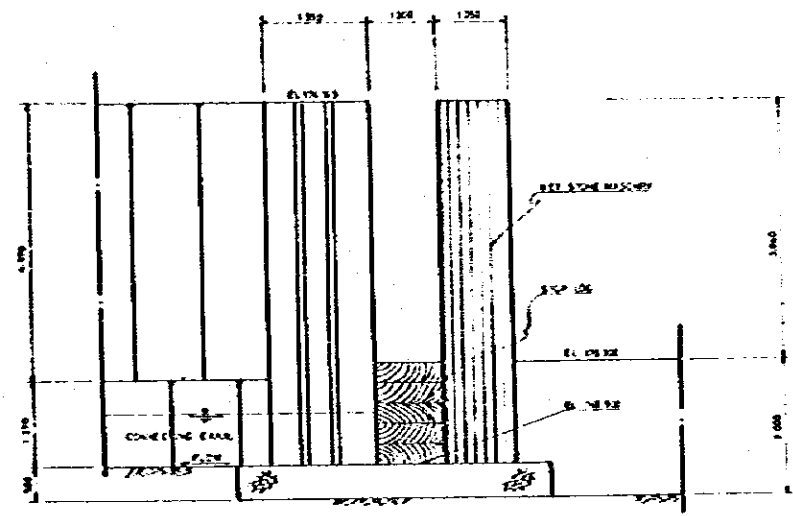
|  |         |
|--|---------|
| DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT |         |
| SANREGO IRRIGATION PROJECT                         |         |
| TITLE OF DRAWING                                   |         |
| PAROTA INTAKE WEIR                                 |         |
| JAPAN INTERNATIONAL COOPERATION AGENCY             | DWS NO. |
| ICRFD  | 200-4   |



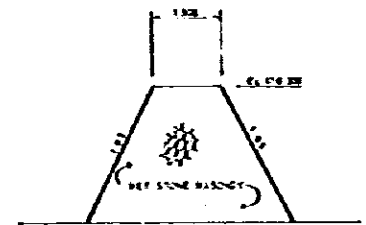
PLAN  
SCALE: A



SECTION B-B  
SCALE: A



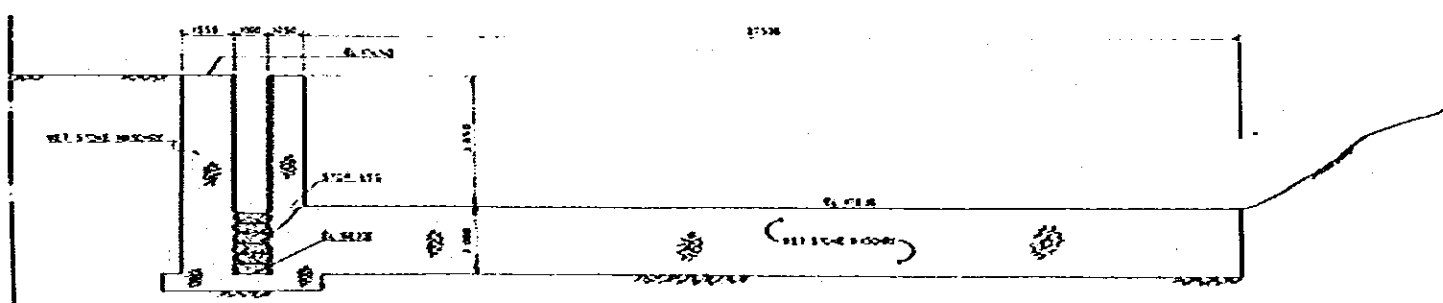
SECTION C-C  
SCALE: B



SECTION D-D  
SCALE: B



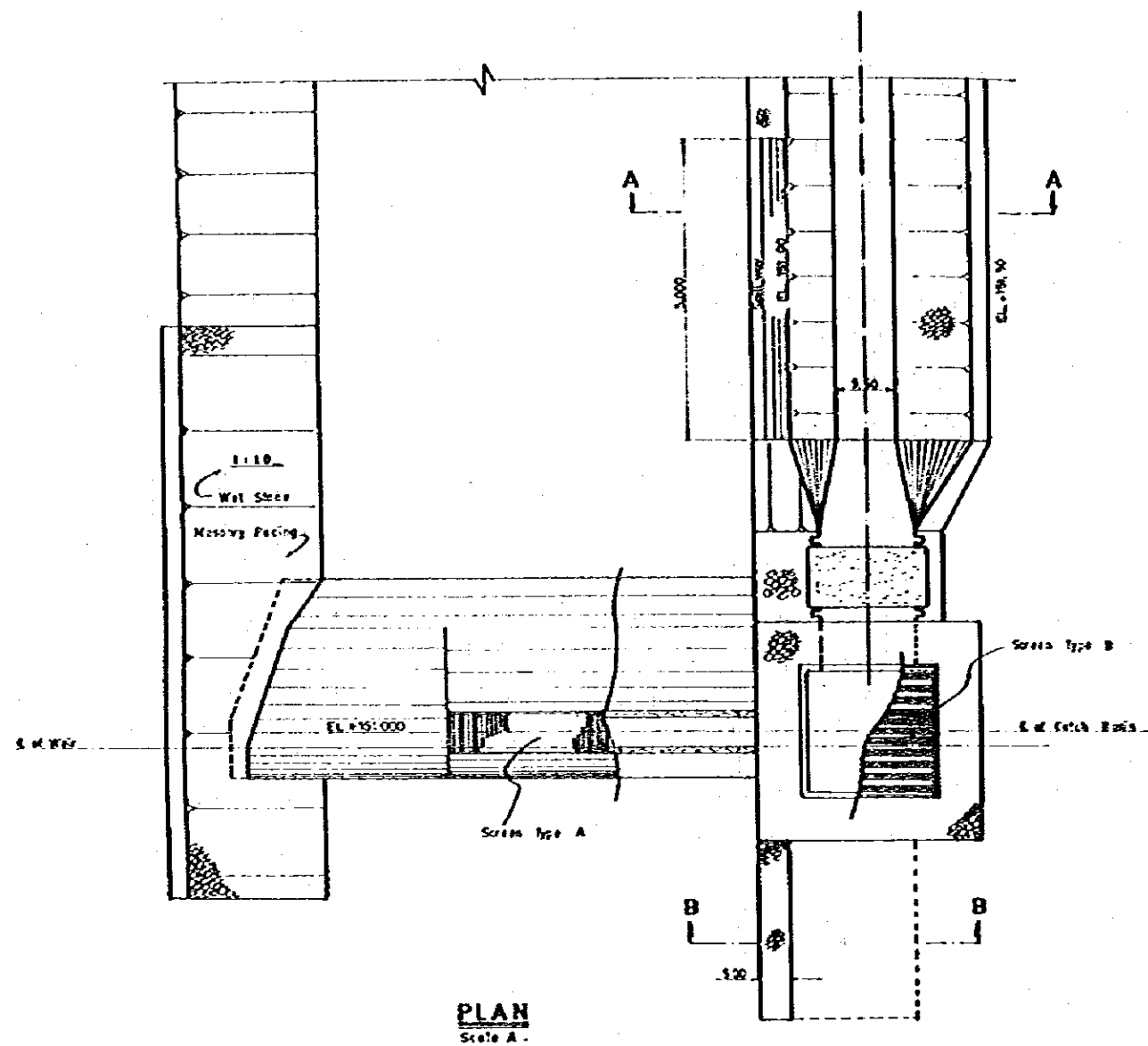
TYPICAL CROSS SECTION OF CONNECTING CANAL  
SCALE: B



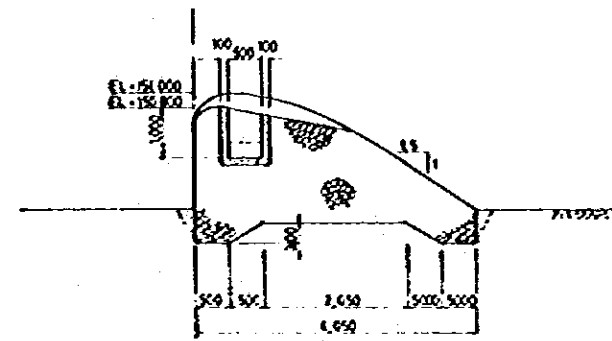
SECTION A-A  
SCALE: A

SCALE: A 1" = 20'  
SCALE: B 1" = 25'

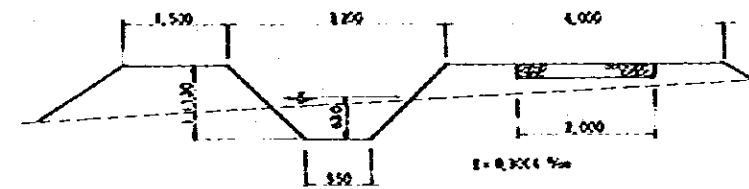
|  |          |
|--|----------|
| DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT |          |
| SANSEGO IRRIGATION PROJECT                         |          |
| TITLE OF DRAWING                                   |          |
| BIRU INTAKE WEIR                                   |          |
| JAPAN INTERNATIONAL COOPERATION AGENCY             | DWG. NO. |
| 1987B  | 200-5    |



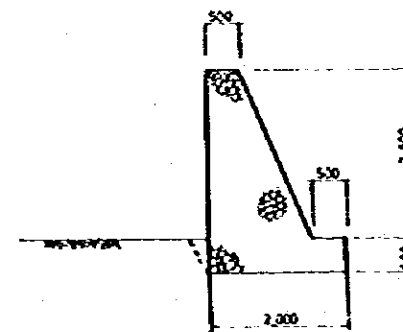
**PLAN**  
Scale A.



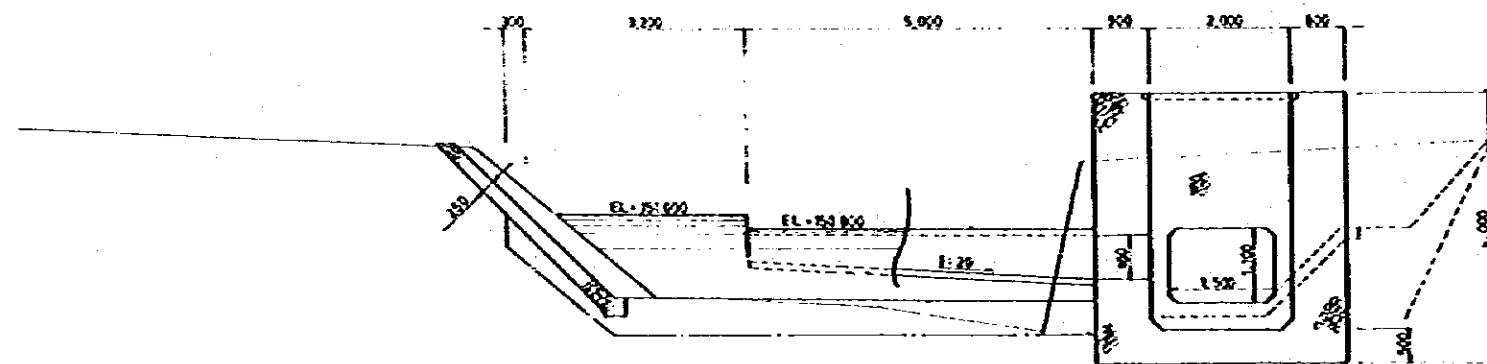
**CROSS SECTION OF WEIR**  
Scale A.



**TYPICAL CROSS SECTION OF CONNECTING CANAL**  
Scale A.



**SECTION B - B**  
Scale A.



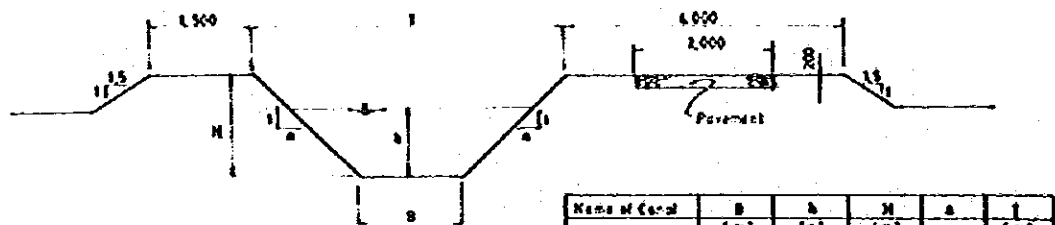
**PROFILE**  
Scale A.

Scale A



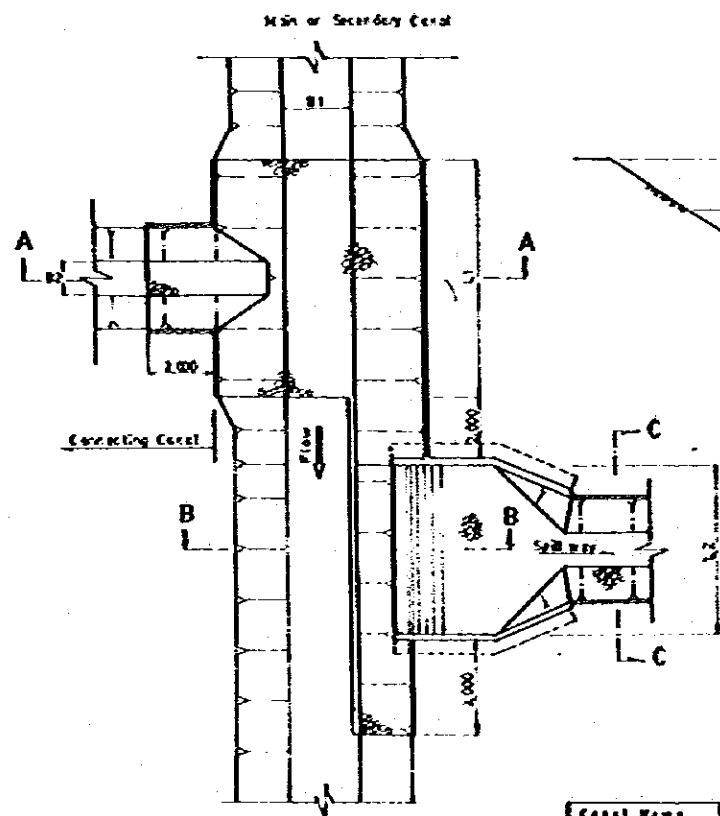
|  |        |
|--|--------|
| DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT |        |
| SANREGO IRRIGATION PROJECT                         |        |
| TITLE OF DRAWING                                   |        |
| <b>MACINAGA INTAKE WEIR</b>                        |        |
| JAPAN INTERNATIONAL COOPERATION AGENCY             | DWG NO |
| 1978   | 260-6  |





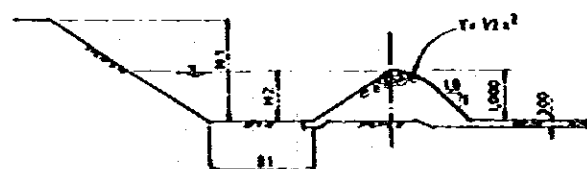
| Name of Canal | B (m) | b (m) | H (m) | a   | T (m) |
|---------------|-------|-------|-------|-----|-------|
| Paroto        | 1.90  | 0.90  | 1.40  | 1.0 | 4.60  |
| Biru          | 1.50  | 0.75  | 1.75  | 1.0 | 4.00  |
| Mosinge       | 0.95  | 0.42  | 1.12  | 1.0 | 3.24  |

Typical Cross Section of Three Connecting Canal



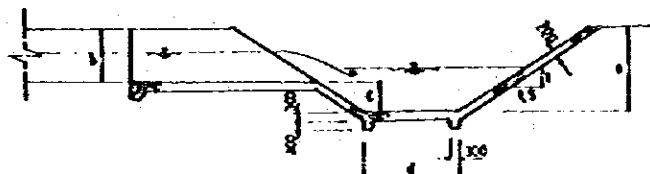
Typical Plan of Three Connecting Canal

| Canal Name | B1   | B2   | L1  | L2   |
|------------|------|------|-----|------|
| Main C     | 6.40 | 1.50 | 0.6 | 4.00 |
| Paroto SC  | 2.60 | 1.80 | 3.0 | 0.0  |
| Aming SC   | 2.75 | 0.55 | 0.0 | 3.00 |



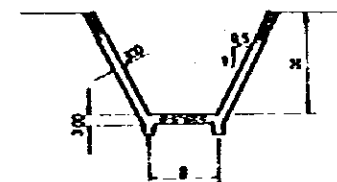
SECTION B-B

| Canal Name | B1   | B2    | H2   | Notes   |
|------------|------|-------|------|---------|
| Main C     | 6.40 | 2.622 | 1.30 | Page 5  |
| Paroto SC  | 2.60 | 1.640 | 1.04 | Page 4  |
| Aming SC   | 2.75 | 1.720 | 1.00 | Page 26 |



SECTION A-A

| Canal Name | a    | b    | c    | d    | Unit (m) |
|------------|------|------|------|------|----------|
| Main C     | 2.30 | 1.30 | 1.00 | 1.40 |          |
| Paroto SC  | 2.40 | 1.40 | 1.00 | 2.80 |          |
| Aming SC   | 2.20 | 1.20 | 1.00 | 2.75 |          |



SECTION C-C

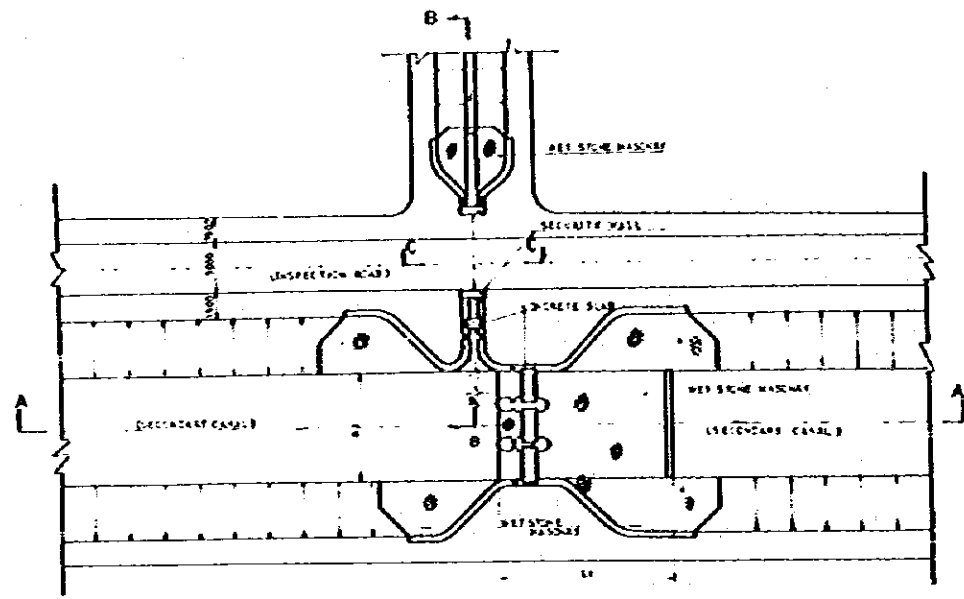
| Canal Name | B    | H    |
|------------|------|------|
| Main C     | 0.60 | 1.20 |
| Paroto SC  | 0.90 | 1.00 |
| Aming SC   | 0.50 | 1.00 |

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
SANREGO DRIGATION PROJECT

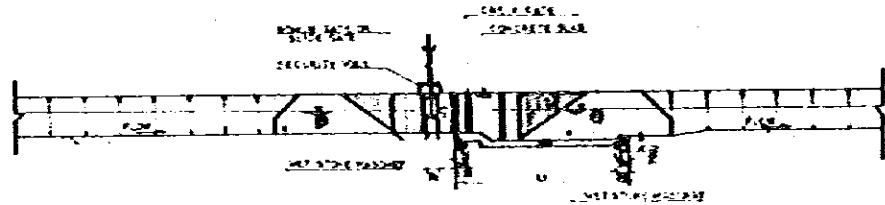
TITLE OF DRAWING  
TYPICAL DRAWING OF THREE CONNECTING CANALS

JAPAN INTERNATIONAL COOPERATION AGENCY  
19810  
DWS No.  
200-1

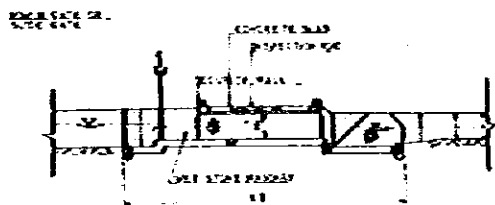
**TURNOUT TYPE I**



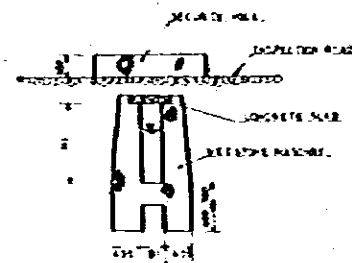
PLAN SCALE: B



PROFILE A-A SCALE: B



PROFILE B-B SCALE: B

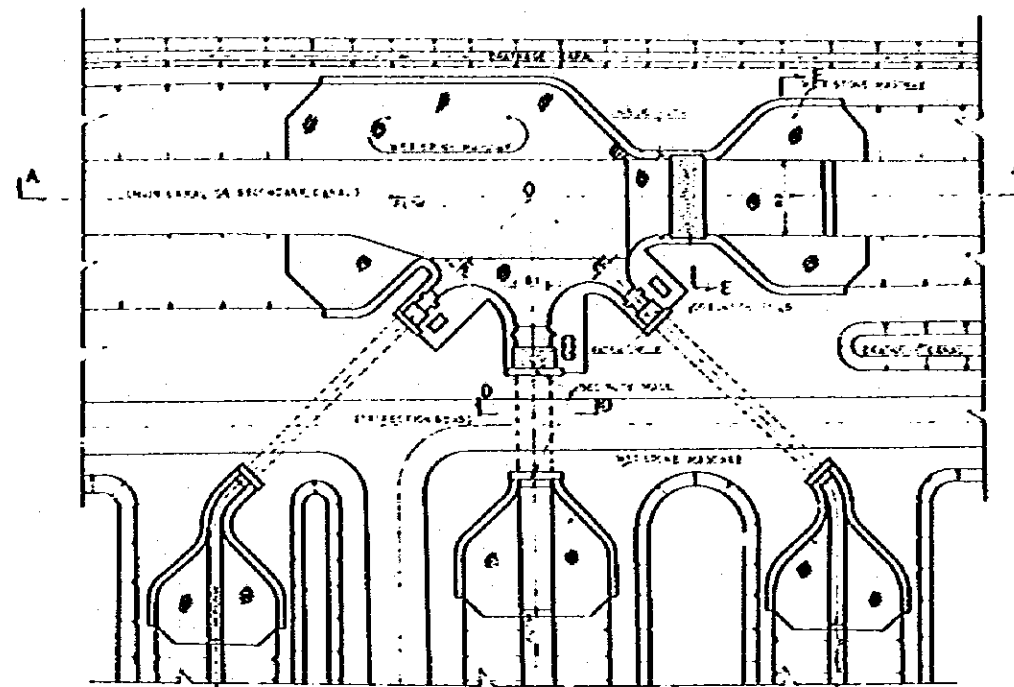


SECTION C-C SCALE: A

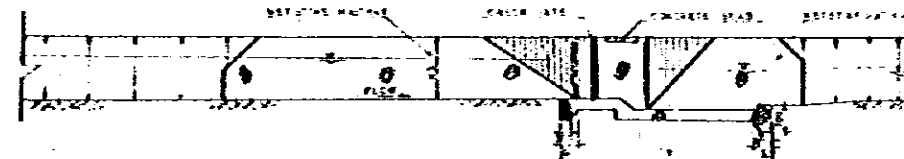
DIMENSION TABLE OF TURNOUT (TYPE I)

| Q (m <sup>3</sup> /sec) | L1 (mm) | L2 (mm) | B1 (mm) | B2 (mm) | H1 (mm) | H2 (mm) |
|-------------------------|---------|---------|---------|---------|---------|---------|
| BS 2                    | 580     | 820     | 150     | 433     | 150     | 2850    |
| BS 4                    | 858     | 1200    | 220     | 640     | 220     | 3850    |
| BS 6                    | 1135    | 1600    | 300     | 850     | 300     | 4850    |
| BS 8                    | 1500    | 2100    | 400     | 1100    | 400     | 6350    |
| BS 10                   | 2100    | 2900    | 550     | 1450    | 550     | 8350    |
| BS 12                   | 2700    | 3700    | 700     | 1900    | 700     | 10850   |
| BS 15                   | 3500    | 4800    | 900     | 2450    | 900     | 14350   |
| BS 20                   | 4500    | 6200    | 1200    | 3200    | 1200    | 18850   |
| BS 25                   | 5500    | 7700    | 1500    | 4100    | 1500    | 24350   |
| BS 30                   | 6500    | 9300    | 1800    | 5100    | 1800    | 30850   |

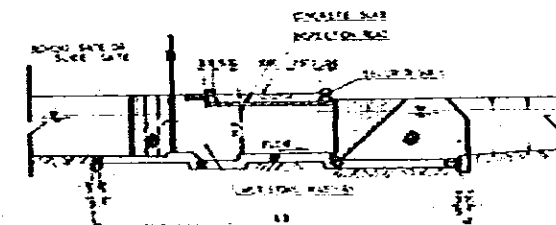
**TURNOUT TYPE II**



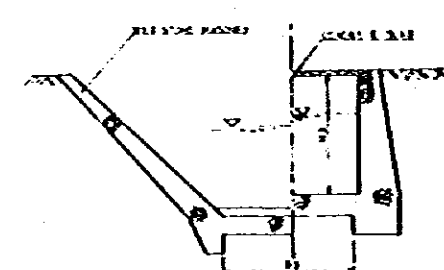
PLAN SCALE: B



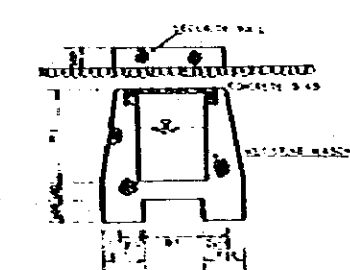
PROFILE A-A SCALE: B



PROFILE B-B SCALE: B



SECTION C-C SCALE: A



SECTION D-D SCALE: A

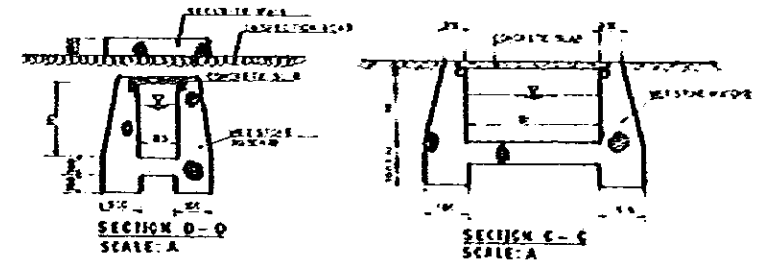
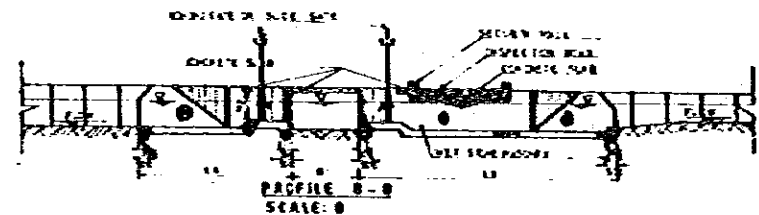
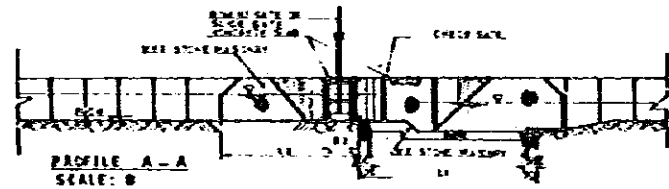
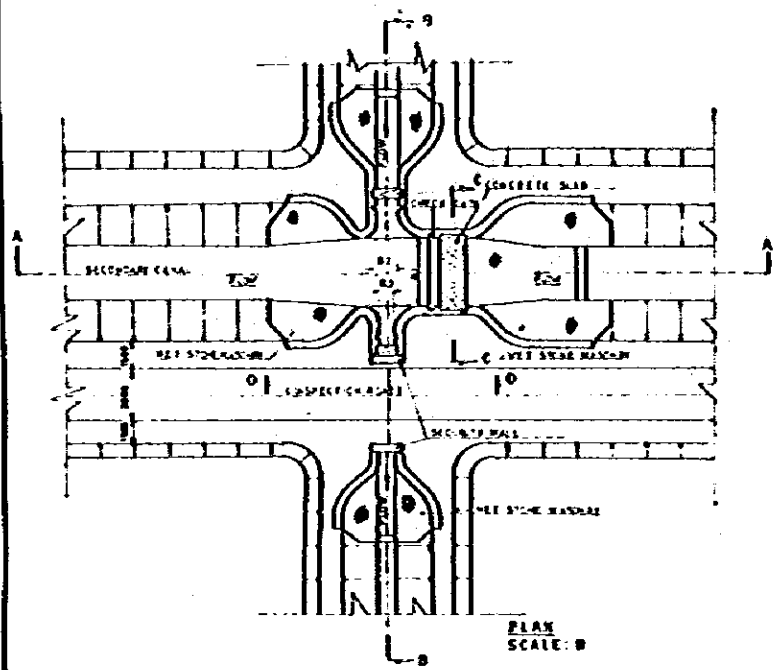
SCALE A: 1:100  
SCALE B: 1:200

DIMENSION TABLE OF TURNOUT (TYPE II)

| Q (m <sup>3</sup> /sec) | L1 (mm) | L2 (mm) | L3 (mm) | B1 (mm) | B2 (mm) | B3 (mm) | H1 (mm) | H2 (mm) | H3 (mm) |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| BS 2                    | 500     | 770     | 1200    | 150     | 200     | 350     | 1500    | 1600    | 2100    |
| BS 4                    | 700     | 1000    | 1500    | 200     | 250     | 400     | 2000    | 2100    | 2600    |
| BS 6                    | 900     | 1300    | 1800    | 250     | 300     | 450     | 2500    | 2600    | 3100    |
| BS 8                    | 1100    | 1600    | 2100    | 300     | 350     | 500     | 3000    | 3100    | 3600    |
| BS 10                   | 1300    | 1900    | 2400    | 350     | 400     | 550     | 3500    | 3600    | 4100    |
| BS 12                   | 1500    | 2200    | 2700    | 400     | 450     | 600     | 4000    | 4100    | 4600    |
| BS 15                   | 1800    | 2700    | 3300    | 500     | 550     | 700     | 4500    | 4600    | 5100    |
| BS 20                   | 2300    | 3500    | 4200    | 650     | 700     | 850     | 5500    | 5600    | 6100    |
| BS 25                   | 2800    | 4300    | 5000    | 800     | 850     | 1000    | 6500    | 6600    | 7100    |

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
**SANREGO IRRIGATION PROJECT**  
 TITLE OF DRAWING  
**TYPICAL DRAWING OF TURNOUT, TYPE I & II**  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO  
 CWB NO.  
**300-1**

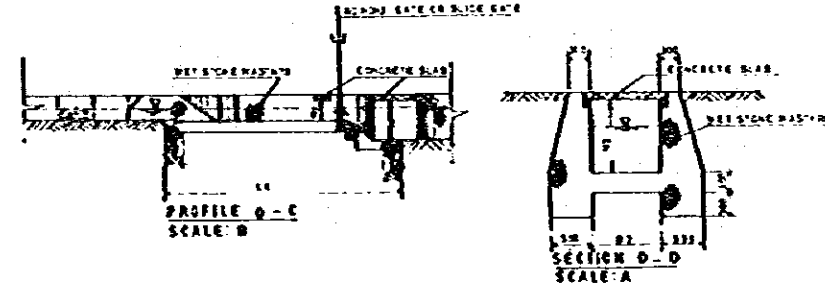
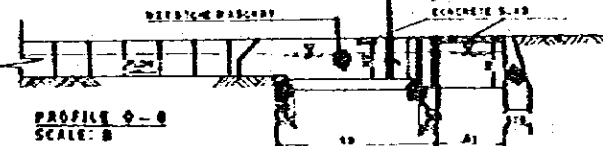
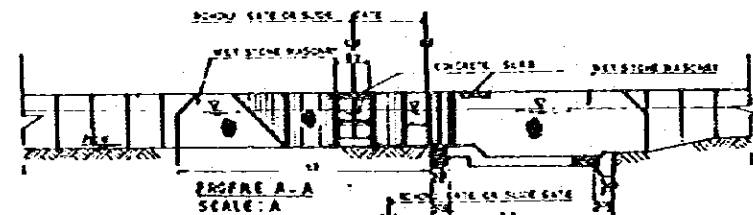
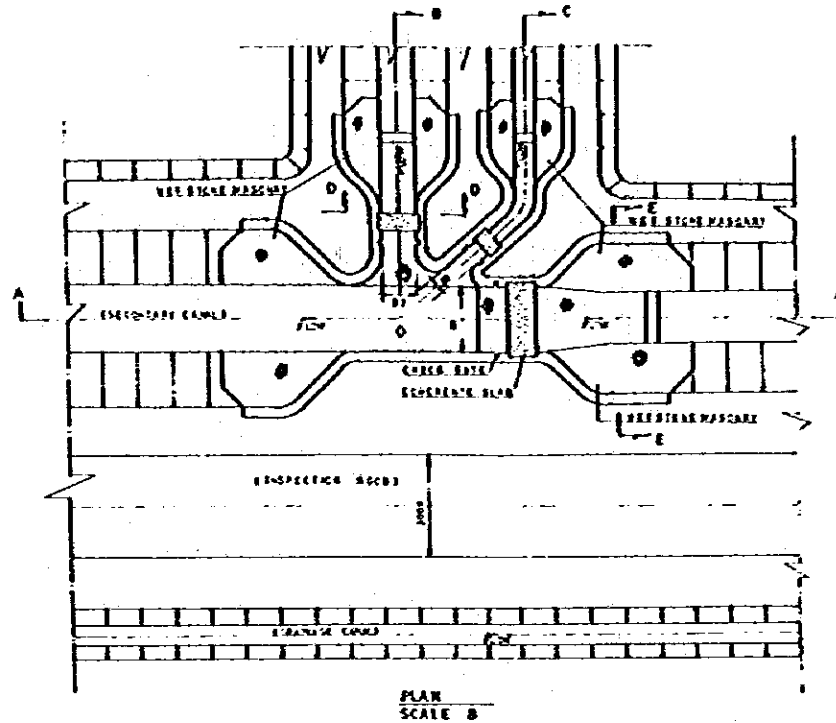
**TURNOUT TYPE III**



**DIMENSION TABLE OF TURNOUT (TYPE III)**

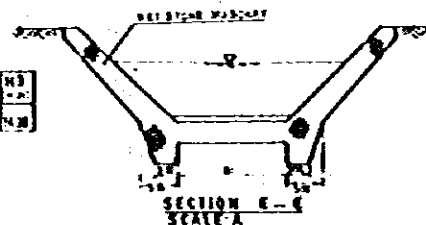
| Q (m <sup>3</sup> /sec) | L1  | L2  | L3  | L4  | B1  | B2  | B3  | H1  | H2  | H3   |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| BP 0 0.146              | 420 | 630 | 740 | 530 | 270 | 300 | 300 | 220 | 600 | 1000 |
| BP 0 2.501              | 450 | 650 | 760 | 550 | 300 | 330 | 330 | 240 | 650 | 1100 |
| BP 0 0.624              | 450 | 650 | 760 | 550 | 300 | 330 | 330 | 240 | 650 | 1100 |
| BP 0 0.345              | 500 | 700 | 810 | 600 | 350 | 380 | 380 | 280 | 700 | 1200 |
| BP 1 2.541              | 500 | 700 | 810 | 600 | 350 | 380 | 380 | 280 | 700 | 1200 |

**TURNOUT TYPE IV**

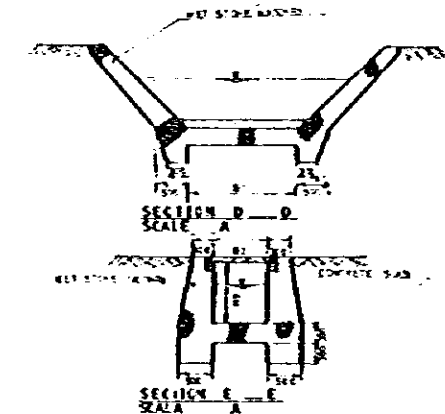
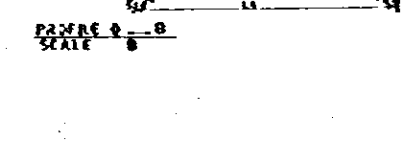
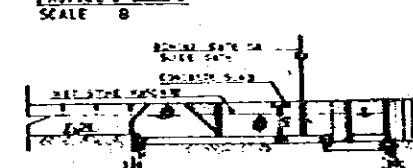
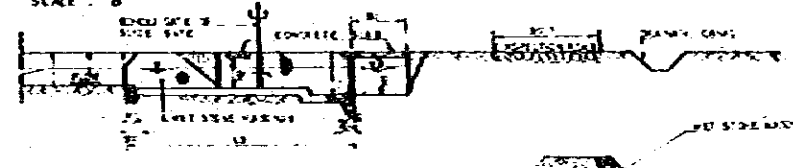
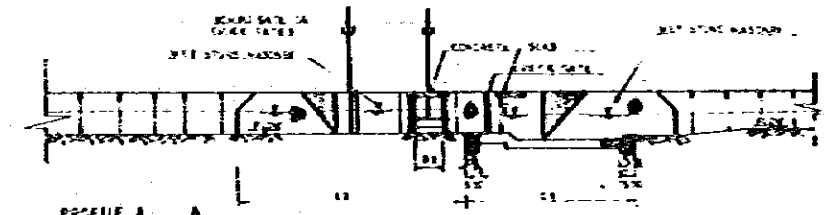
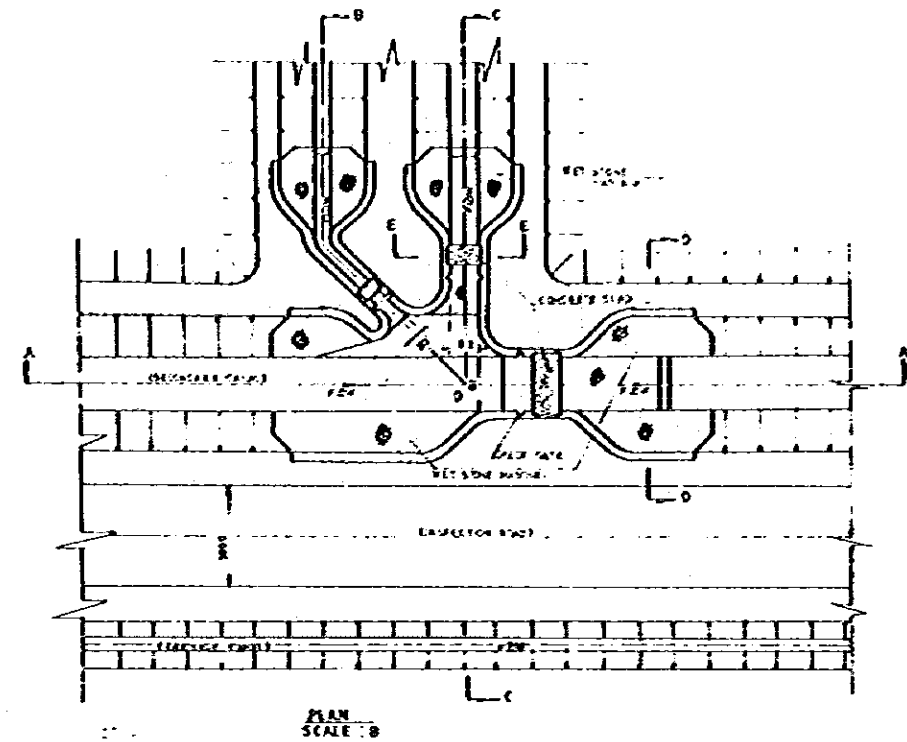


**DIMENSION TABLE OF TURNOUT (TYPE IV)**

| Q (m <sup>3</sup> /sec) | L1  | L2  | L3   | L4  | B1  | B2  | B3  | H1  | H2   | H3   |
|-------------------------|-----|-----|------|-----|-----|-----|-----|-----|------|------|
| BS 1 12.94              | 600 | 850 | 1000 | 750 | 400 | 450 | 450 | 300 | 1000 | 1500 |



**TURNOUT TYPE V**

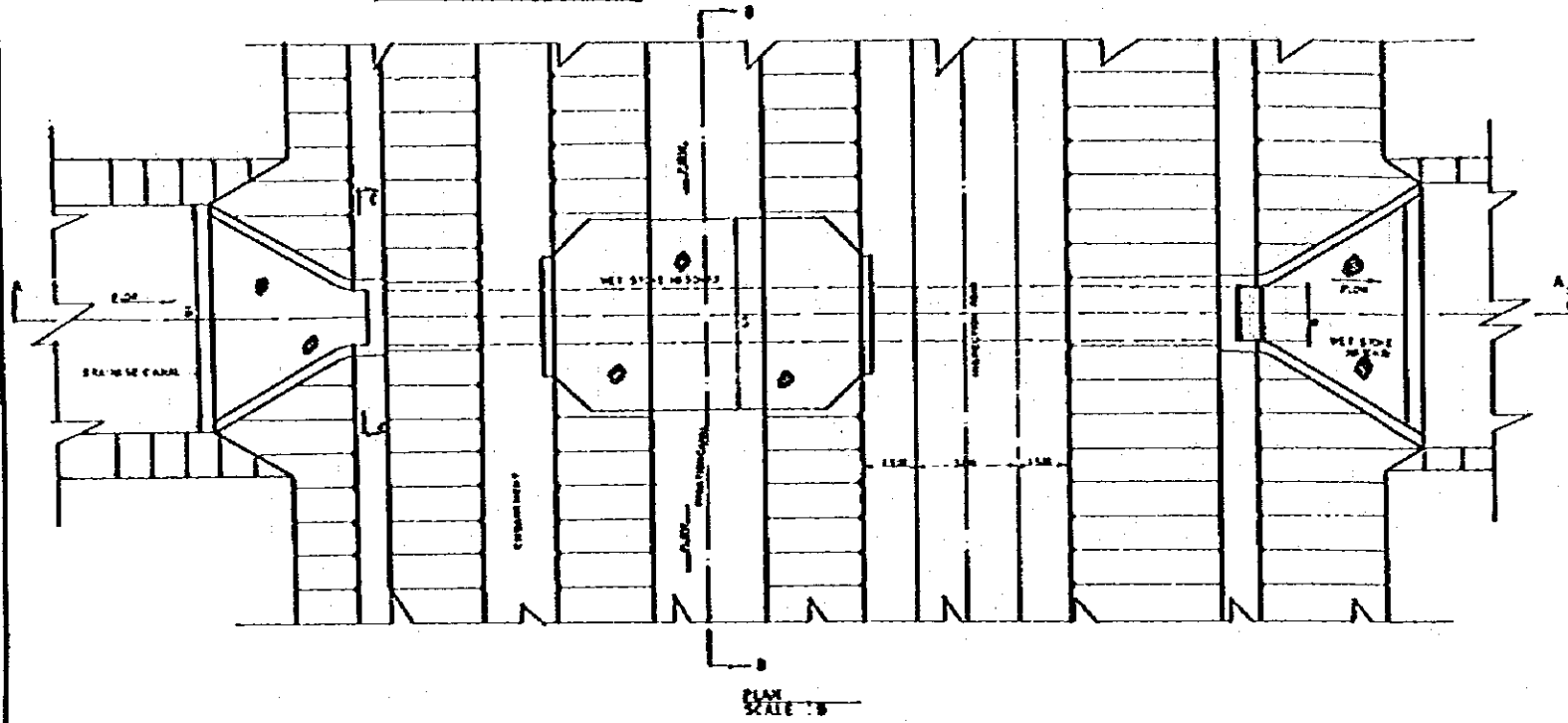


**DIMENSION TABLE OF TURNOUT (TYPE V)**

| Q (m <sup>3</sup> /sec) | L1  | L2  | L3  | L4  | B1  | B2  | B3  | H1  | H2  | H3  |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| BS 0 0.143              | 300 | 450 | 500 | 350 | 150 | 180 | 180 | 100 | 400 | 500 |
| BP 0 3.342              | 300 | 450 | 500 | 350 | 150 | 180 | 180 | 100 | 400 | 500 |

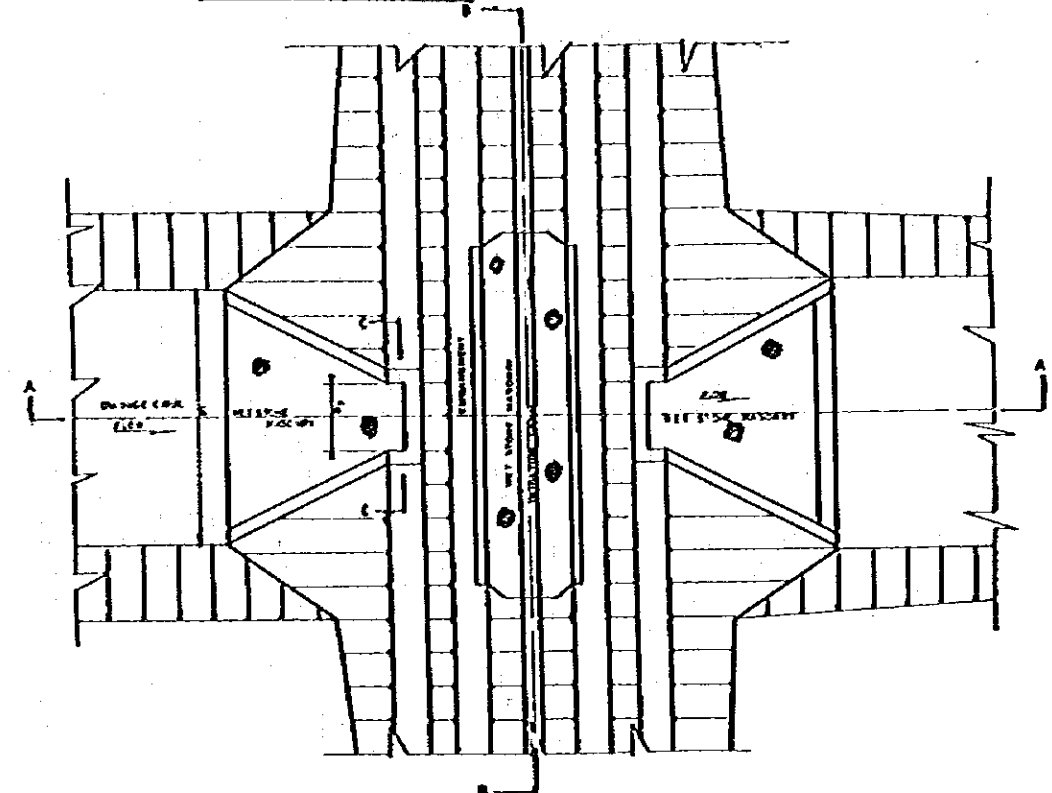
DESIGNED BY GENERAL OF WATER RESOURCES DEVELOPMENT  
 SANREGO IRRIGATION PROJECT  
 TITLE OF DRAWING  
**TYPICAL DRAWING OF  
 TURNOUT, TYPE III, IV AND V**  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO  
 DWG NO  
 300-2

**DRAIN CULVERT TYPE I**

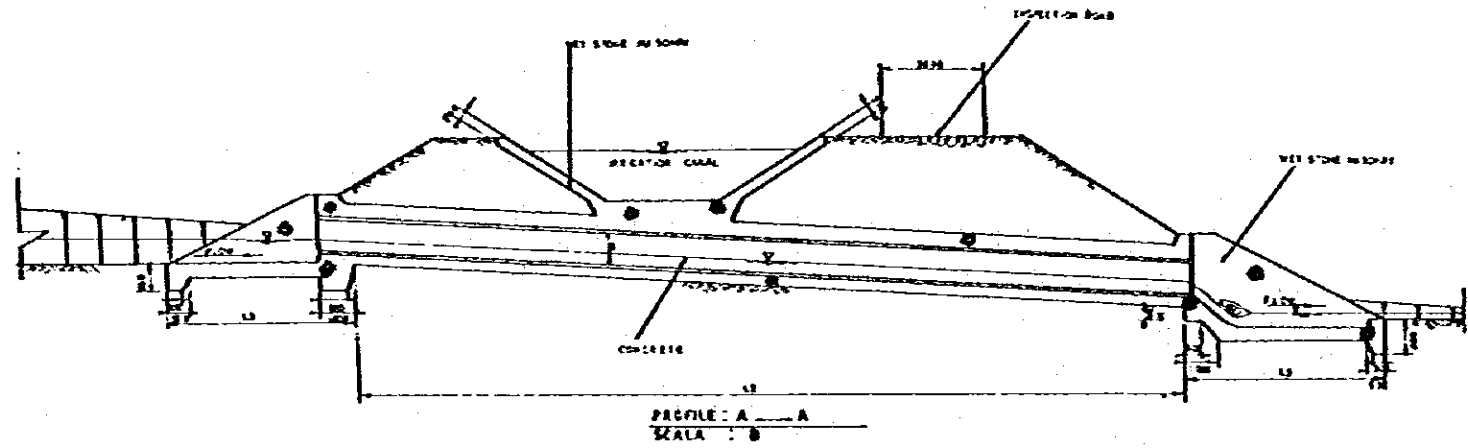


PLAN SCALE : B

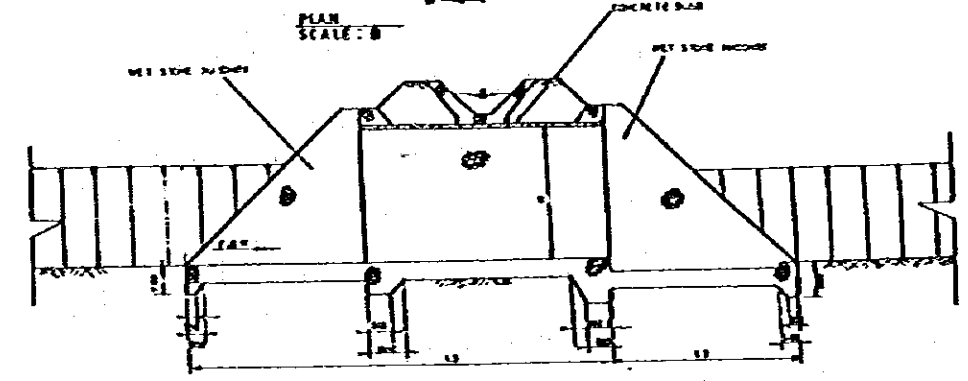
**DRAIN CULVERT TYPE II**



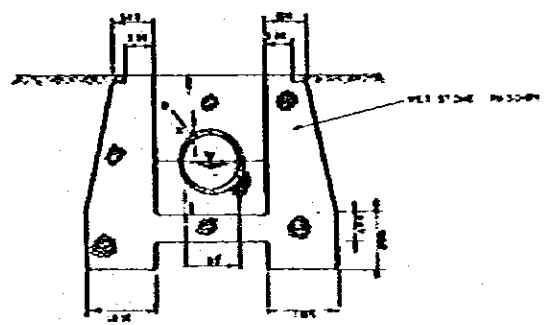
PLAN SCALE : B



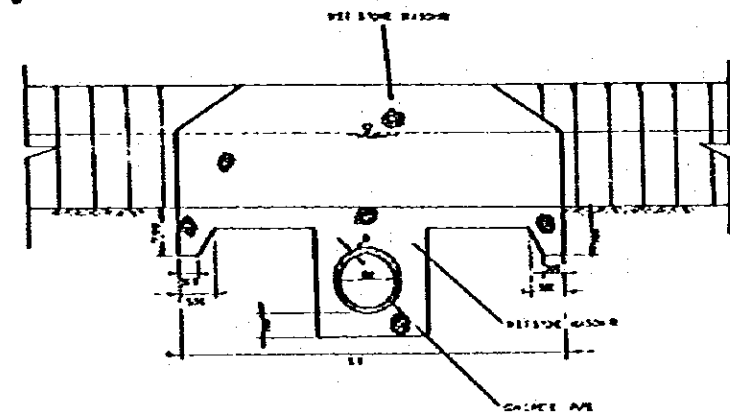
PROFILE A-A SCALE : B



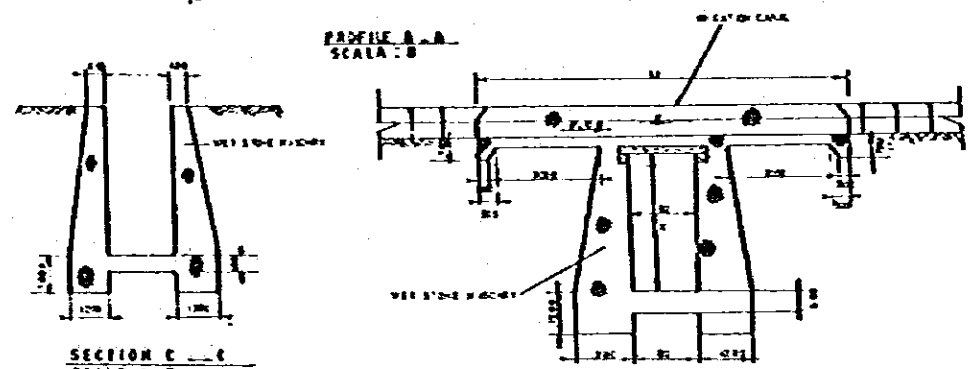
PROFILE A-A SCALE : B



SECTION C-C SCALE : A



PROFILE B-B SCALE : A



SECTION C-C SCALE : B

PROFILE B-B SCALE : B

**DIMENSION TABLE OF DRAIN CULVERT (TYPE I)**

| STATION | DISCHARGE (m <sup>3</sup> /sec) | L (mm) |       |      | B (mm) |     | H (mm) | D (mm) |
|---------|---------------------------------|--------|-------|------|--------|-----|--------|--------|
|         |                                 | L1     | L2    | L3   | B1     | B2  |        |        |
| 05 5a   | 0339                            | 7000   | 2300  | 2600 | 800    | 800 | 1800   | 100    |
| 05 5b   | 0225                            | 4900   | 21700 | 2500 | 800    | 800 | 1400   | 100    |
| 05 5c   | 0372                            | 11500  | 36450 | 4200 | 5500   | 800 | 1800   | 100    |

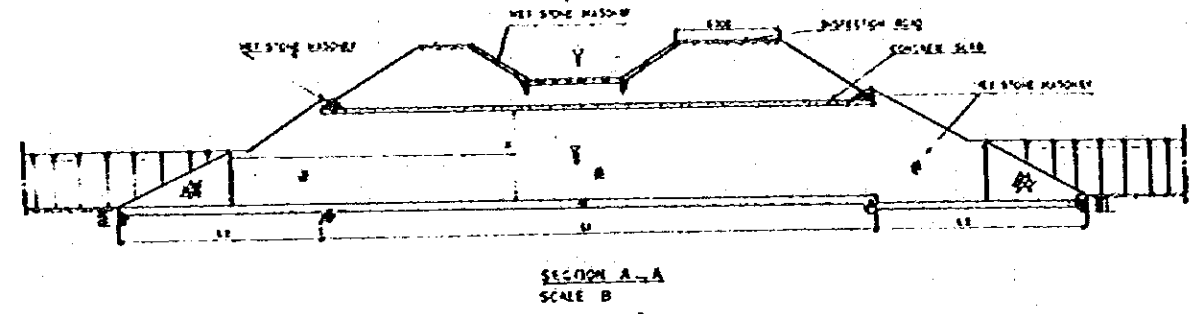
**DIMENSION TABLE OF DRAIN CULVERT (TYPE II)**

| STATION | DISTANCE (m) | L (mm) |       |      | B (mm) |     | H (mm) |
|---------|--------------|--------|-------|------|--------|-----|--------|
|         |              | L1     | L2    | L3   | B1     | B2  |        |
| 05 5a   | 1100         | 7000   | 2300  | 2600 | 800    | 800 | 1800   |
| 05 5b   | 1100         | 4900   | 21700 | 2500 | 800    | 800 | 1400   |
| 05 5c   | 1100         | 11500  | 36450 | 4200 | 5500   | 800 | 1800   |

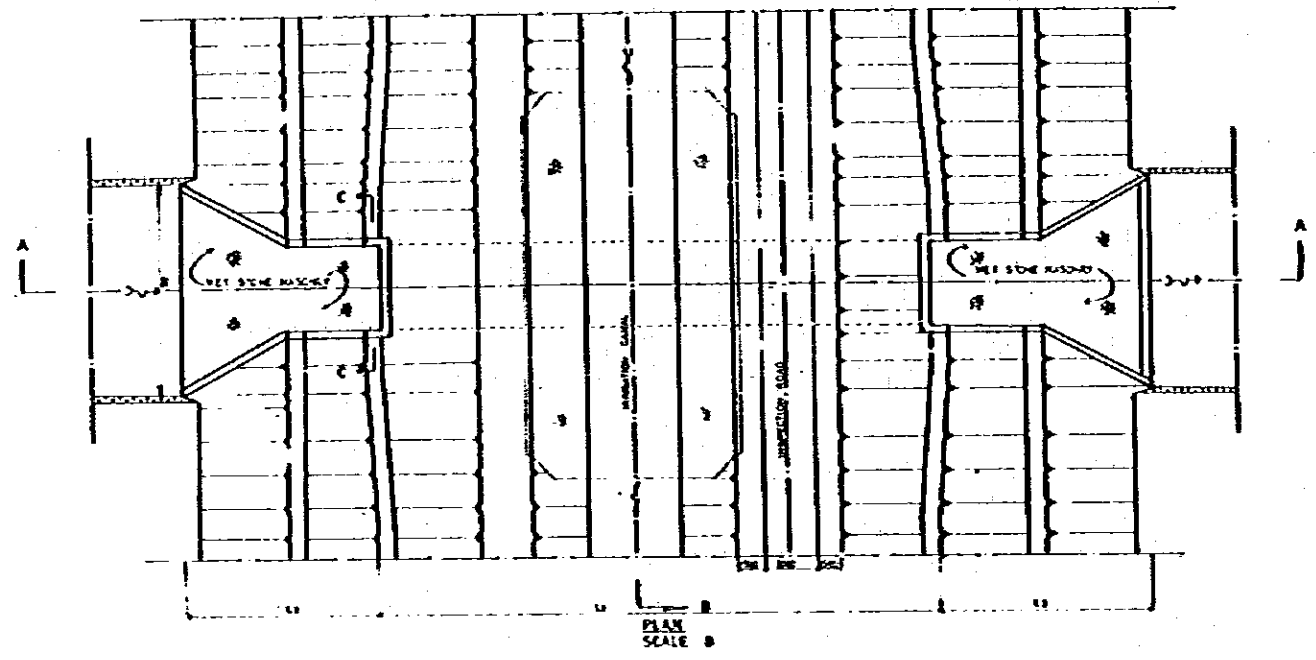


COORDINATE GENERAL OF WATER RESOURCES DEVELOPMENT  
**SANREGO IRRIGATION PROJECT**  
 TITLE OF DRAWING  
**TYPICAL DRAWING OF DRAIN CULVERT TYPE I II**  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 1989  
 DWG NO. 300-3

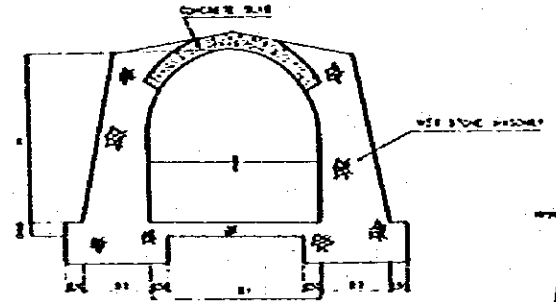
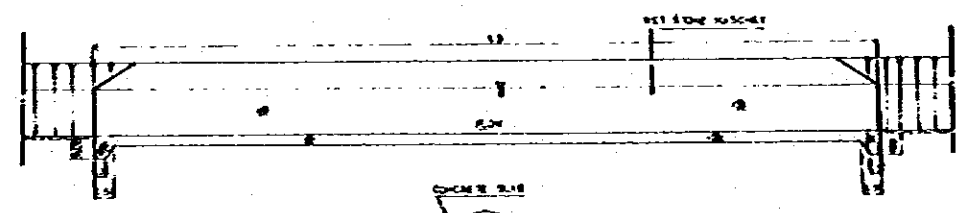
**DRAIN CULVERT TYPE III**



SECTION A-A  
SCALE B

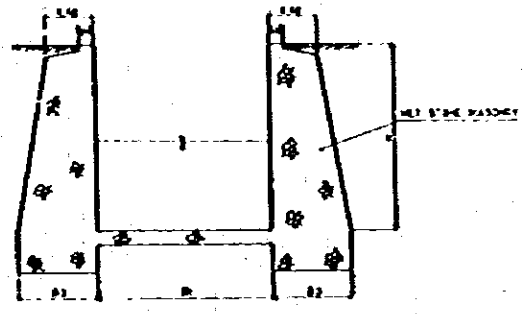


PLAN  
SCALE B



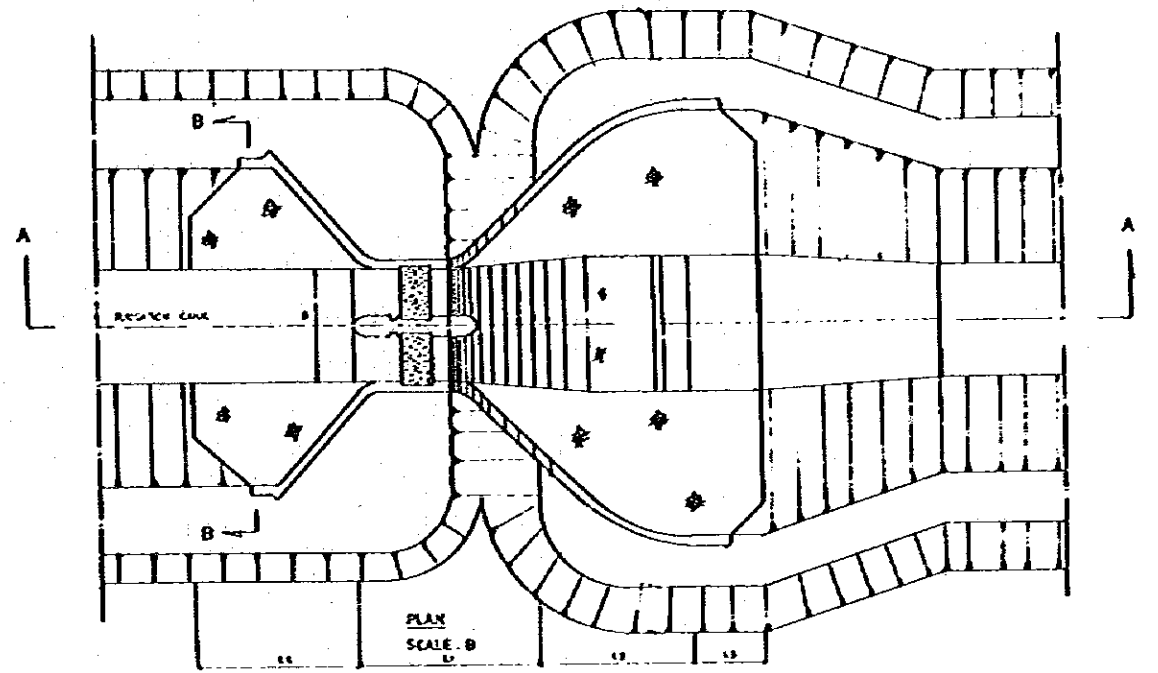
SECTION B-B  
SCALE A

| Q<br>(m <sup>3</sup> /sec) | D<br>(m) | H<br>(m) | L1<br>(m) | L2<br>(m) | L3<br>(m) | B1<br>(m) | B2<br>(m) | STATION |
|----------------------------|----------|----------|-----------|-----------|-----------|-----------|-----------|---------|
| 22373                      | 310      | 5200     | 3700      | 13200     | 22200     | 5000      | 21200     | B2-03   |
| 24594                      | 320      | 5230     | 3550      | 12610     | 22000     | 5000      | 20550     | B2-04   |
| 26961                      | 330      | 5260     | 3400      | 12020     | 21800     | 5000      | 19900     | B2-05   |

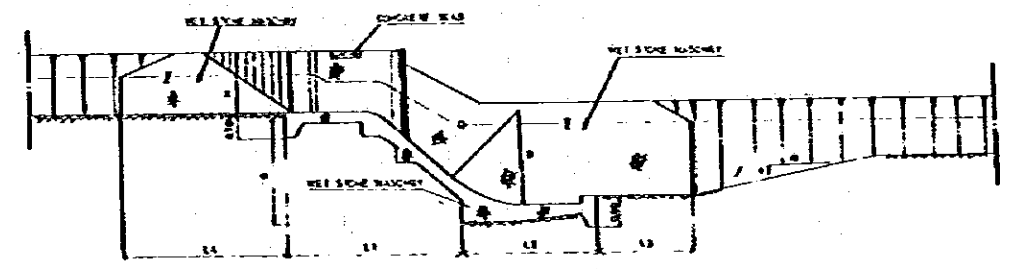


SECTION C-C  
SCALE A

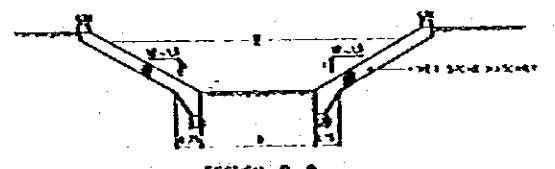
**DROP**



PLAN  
SCALE B

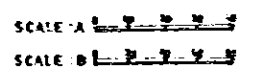


SECTION A-A  
SCALE A



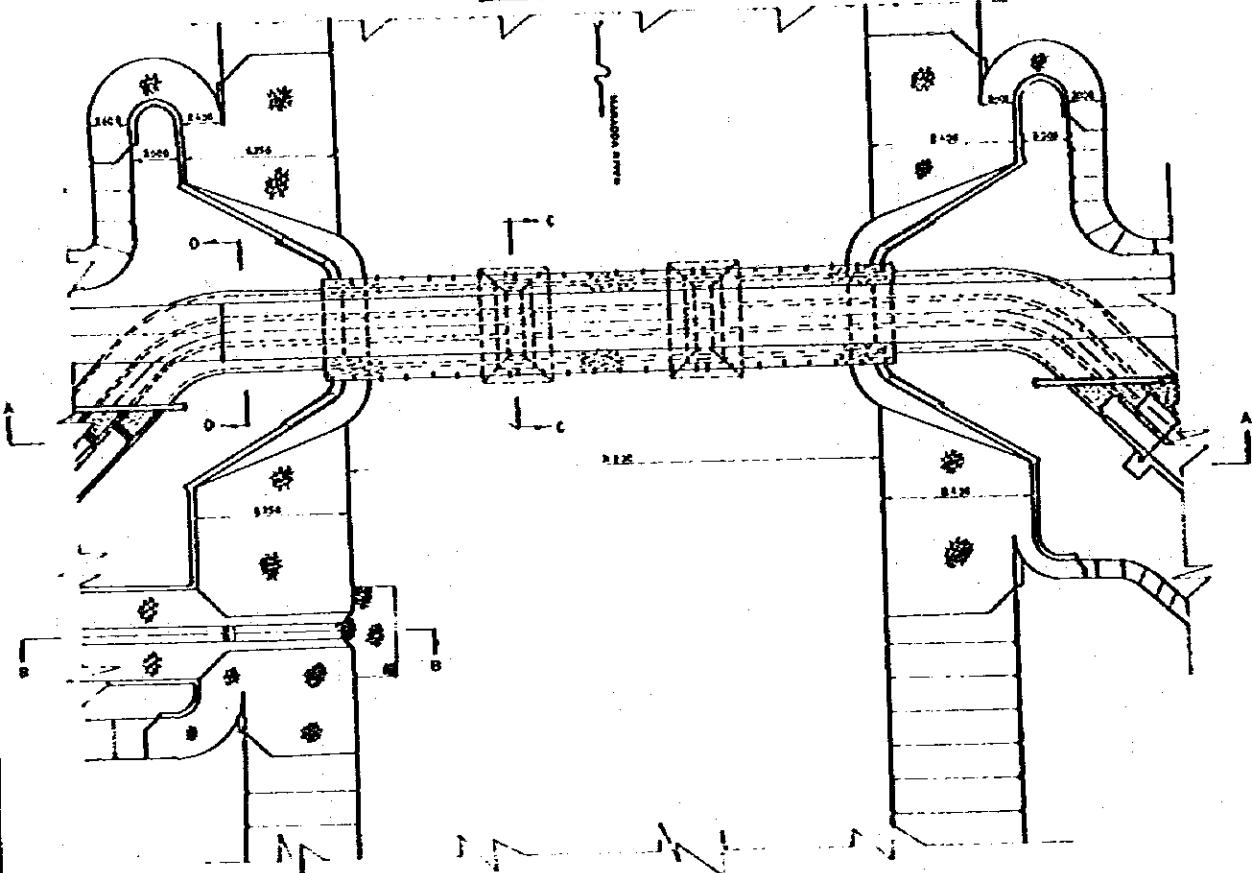
SECTION B-B  
SCALE A

| Q<br>(m <sup>3</sup> /sec) | D<br>(m) | H<br>(m) | L1<br>(m) | L2<br>(m) | L3<br>(m) | B1<br>(m) | B2<br>(m) | STATION |
|----------------------------|----------|----------|-----------|-----------|-----------|-----------|-----------|---------|
| 3525                       | 280      | 5        | 1830      | 4500      | 4200      | 2000      | 4700      | B2-06   |
| 3309                       | 280      | 5        | 1860      | 4500      | 4200      | 2000      | 5500      | B2-07   |
| 3734                       | 300      | 5        | 1920      | 5200      | 4400      | 2200      | 3500      | B2-08   |
| 508                        | 2200     | 5        | 1914      | 4500      | 3400      | 1800      | 5000      | B2-09   |
| 5020                       | 2400     | 5        | 1914      | 5000      | 4350      | 2100      | 4700      | B2-10   |
| 5070                       | 2600     | 5        | 1914      | 5000      | 4350      | 2100      | 4700      | B2-11   |
| 6065                       | 2800     | 5        | 1914      | 5750      | 3400      | 1900      | 4700      | B2-12   |
| 6825                       | 3000     | 5        | 1971      | 5300      | 4550      | 1900      | 4700      | B2-13   |
| 6045                       | 3000     | 5        | 1883      | 4250      | 2150      | 3200      | 4500      | B2-14   |
| 2183                       | 1650     | 5        | 1760      | 3700      | 2750      | 3500      | 5700      | B2-15   |
| 2310                       | 1650     | 5        | 1700      | 3500      | 2150      | 3000      | 2500      | B2-16   |

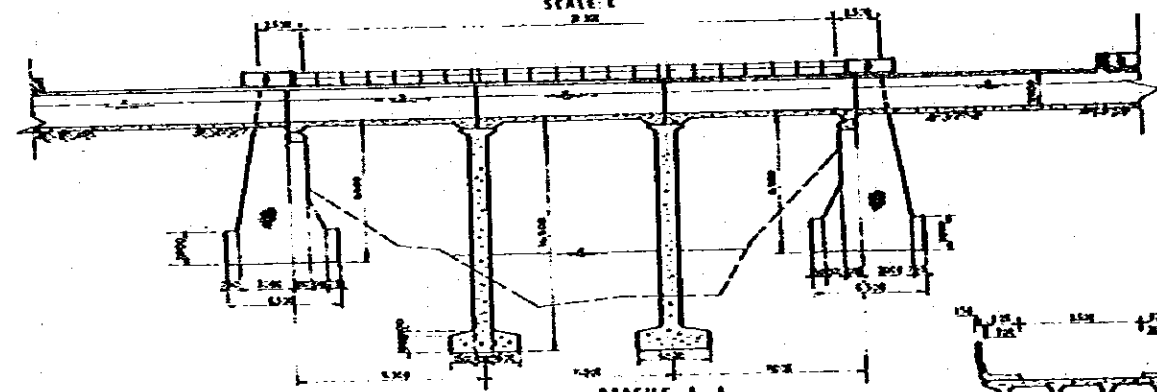


DIRECTOR GENERAL OF WATER RESOURCES DEVELOPMENT  
**SANREO IRRIGATION PROJECT**  
 TITLE OF DRAWING  
**TYPICAL DRAWING OF  
 DRAIN CULVERT, TYPE III AND DROP**  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 DWG NO  
**300-4**  
 DATE

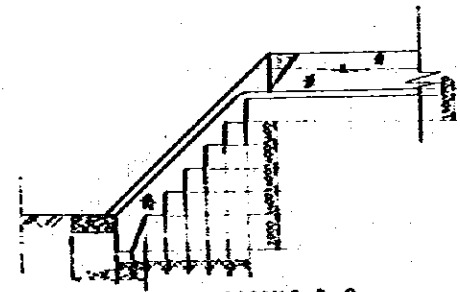
AQUEDUCT OF MARADDA



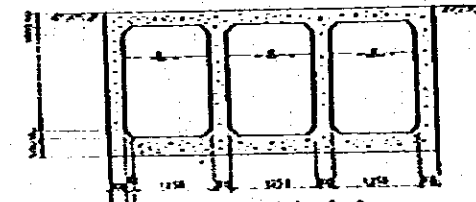
PLAN SCALE: C



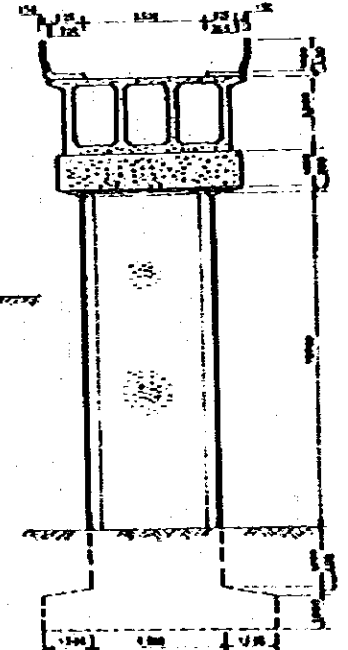
PROFILE A-A SCALE: C



PROFILE B-B SCALE: C

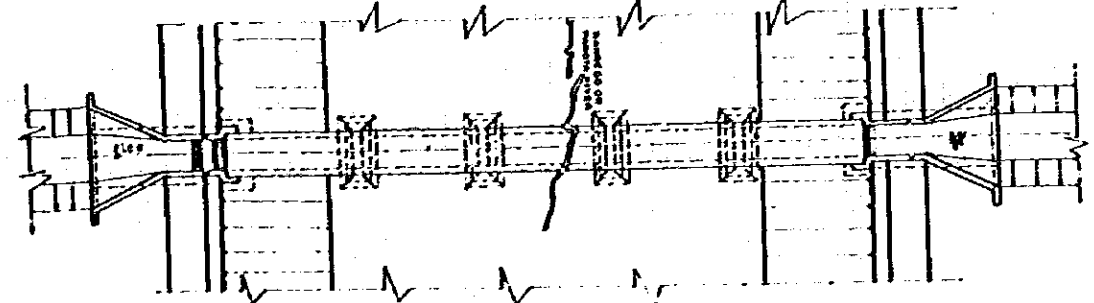


SECTION D-D SCALE: A

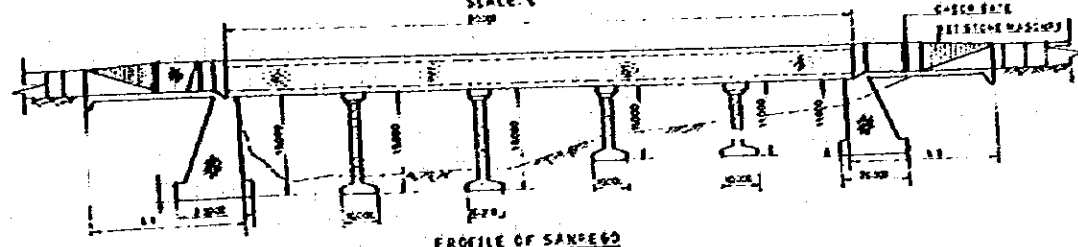


SECTION C-C SCALE: B

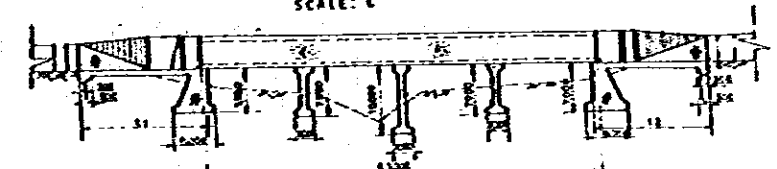
AQUEDUCT OF SANREGO & PAROTA



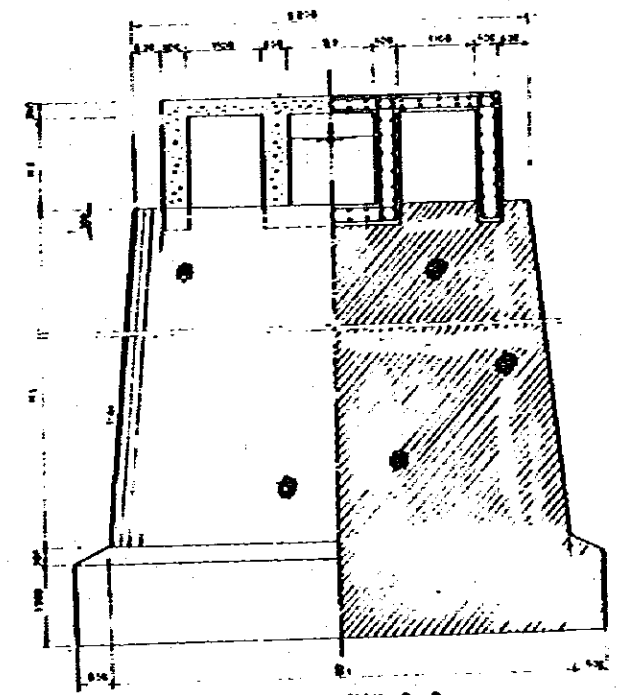
PLAN SCALE: C



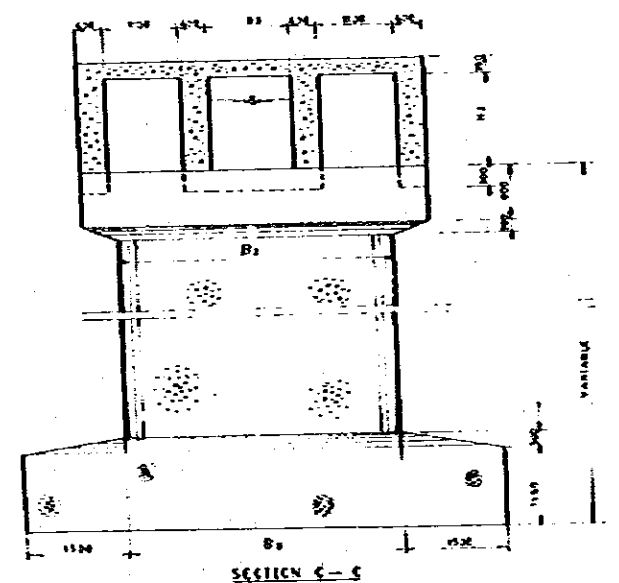
PROFILE OF SANREGO SCALE: C



PROFILE OF PAROTA SCALE: C



SECTION B-B SCALE: A



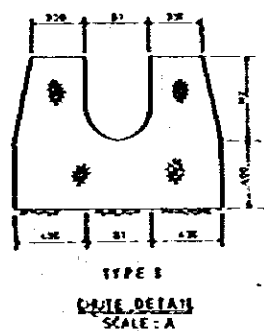
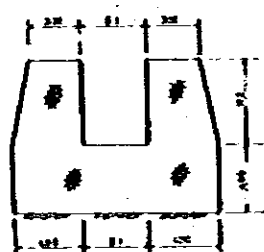
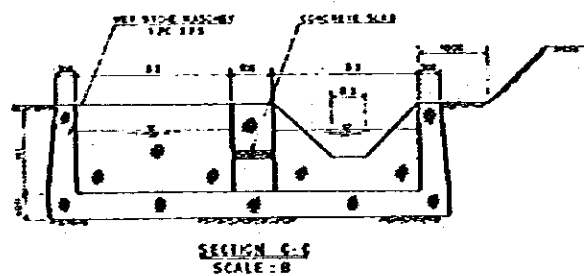
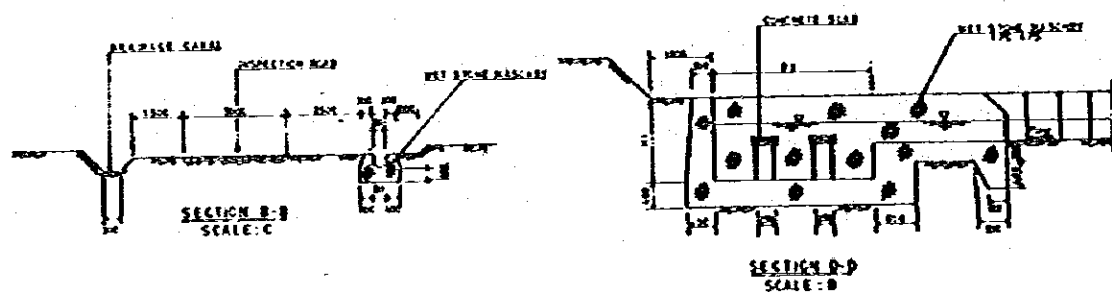
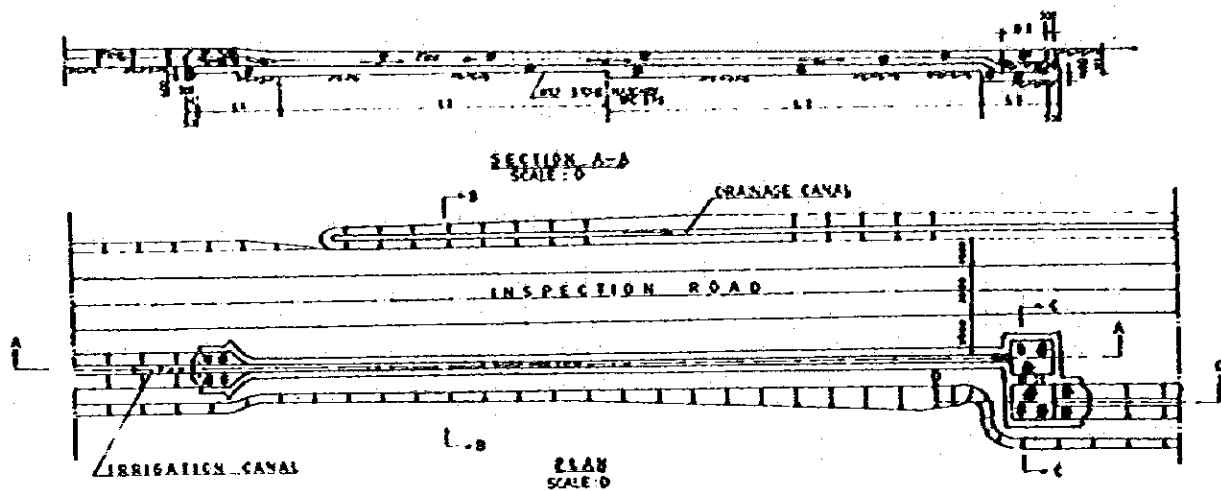
SECTION C-C SCALE: A

SCALE A: 1:50  
SCALE B: 1:10  
SCALE C: 1:20

| Q (m <sup>3</sup> /sec) | H1 (m) | H2 (m) | L1 (m) | L2 (m) | B1 (m) | B2 (m) | B3 (m) |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|
| SANREGO                 | 6300   | 1550   | 2250   | 2250   | 1000   | 1000   | 1200   |
| PAROTA                  | 3200   | 1350   | 1800   | 1800   | 1000   | 1000   | 1200   |

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
SANREGO IRRIGATION PROJECT  
TITLE OF DRAWING: AQUEDUCT OF MARADDA, SANREGO AND PAROTA  
JAPAN INTERNATIONAL COOPERATION AGENCY DBS NO. 300-5  
TKR10

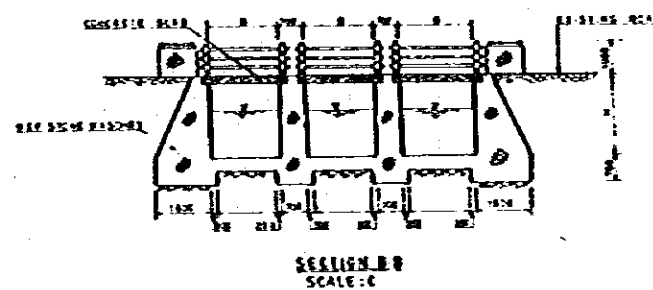
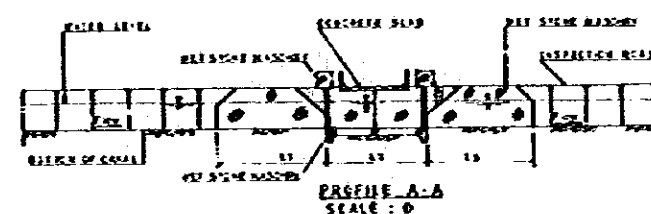
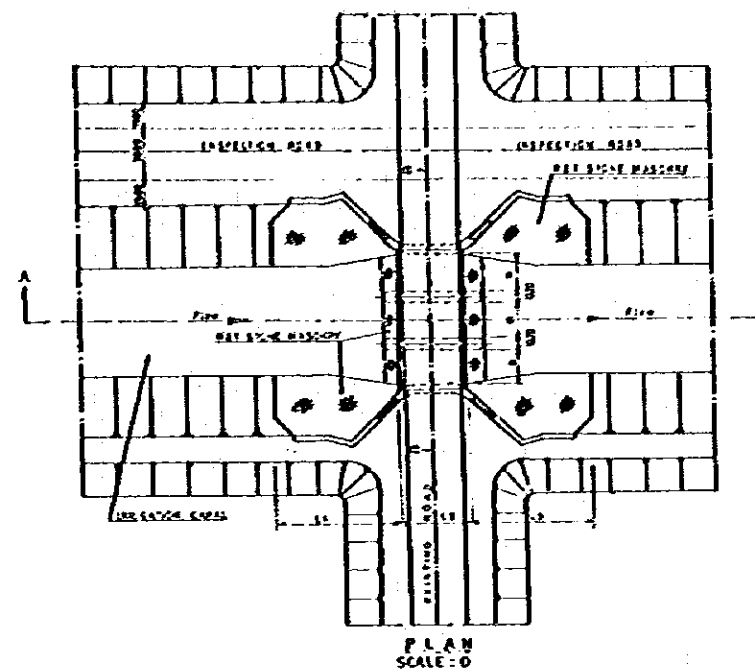
**CHUTE**



DIMENSION TABLE OF CHUTE

| Q (m <sup>3</sup> /sec) | R (m/m) | B1 (m/m) | B2 (m/m) | B3 (m/m) | L1 (m/m) | L2 (m/m) | L3 (m/m) | H1 (m/m) | H2 (m/m) | TYPE     |
|-------------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.371                   | 2.00    | 1.50     | 4.50     | 5.50     | 5400     | 12.21250 | 1030     | 1800     | 600      | 1.02x.54 |
| 0.724                   | -       | 1.50     | 4.50     | 5.50     | 8.700    | 14.15500 | 1350     | 1900     | 600      | 1.02x.60 |
| 1.518                   | -       | 1.50     | 7.50     | 7.50     | 5.500    | 14.2000  | 8000     | 2700     | 750      | 1.02x.75 |
| 0.258                   | 2.50    | 1.80     | 4.50     | 5.50     | 3800     | 11.13750 | 740      | 1200     | 540      | 1.02x.54 |
| 0.758                   | 2.50    | 1.80     | 4.50     | 5.50     | 3800     | 11.00000 | 740      | 1200     | 540      | 1.02x.60 |
| 0.212                   | 2.50    | 1.80     | 4.50     | 5.50     | 3800     | 11.19000 | 740      | 1200     | 540      | 1.02x.75 |

**BRIDGE**

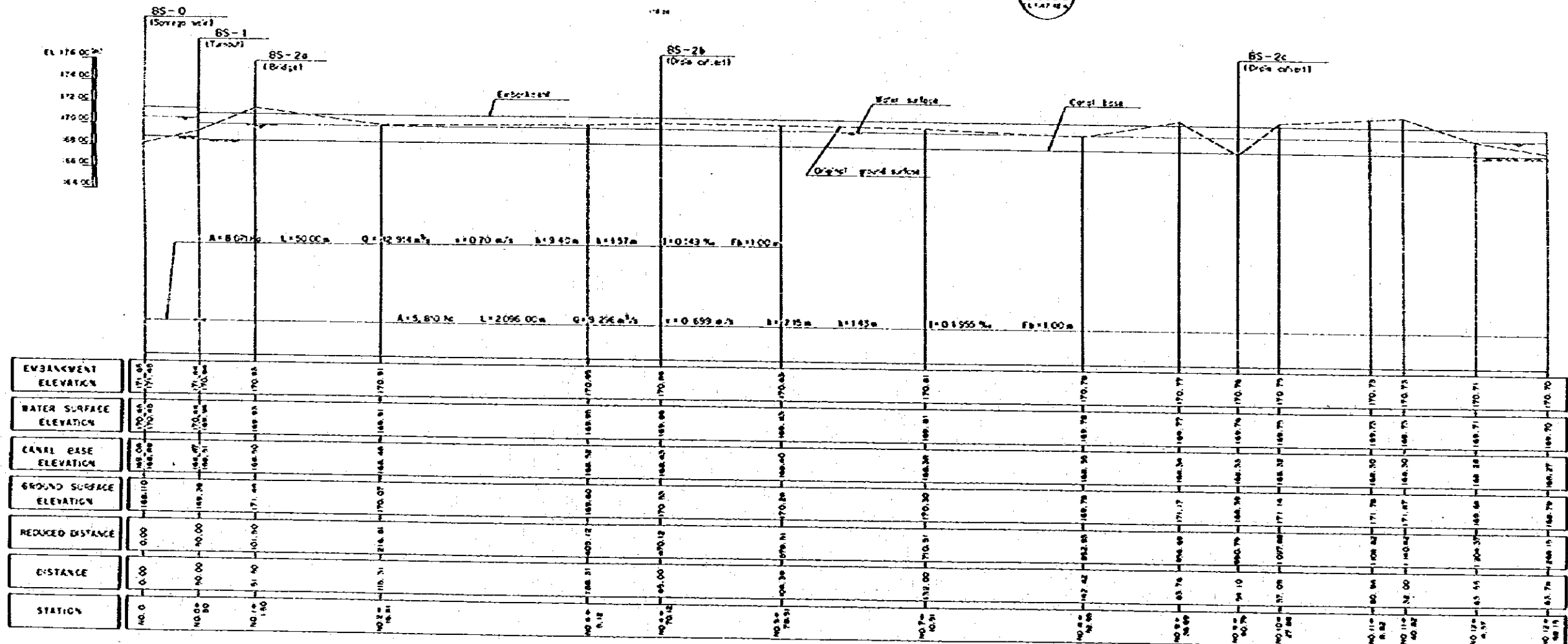
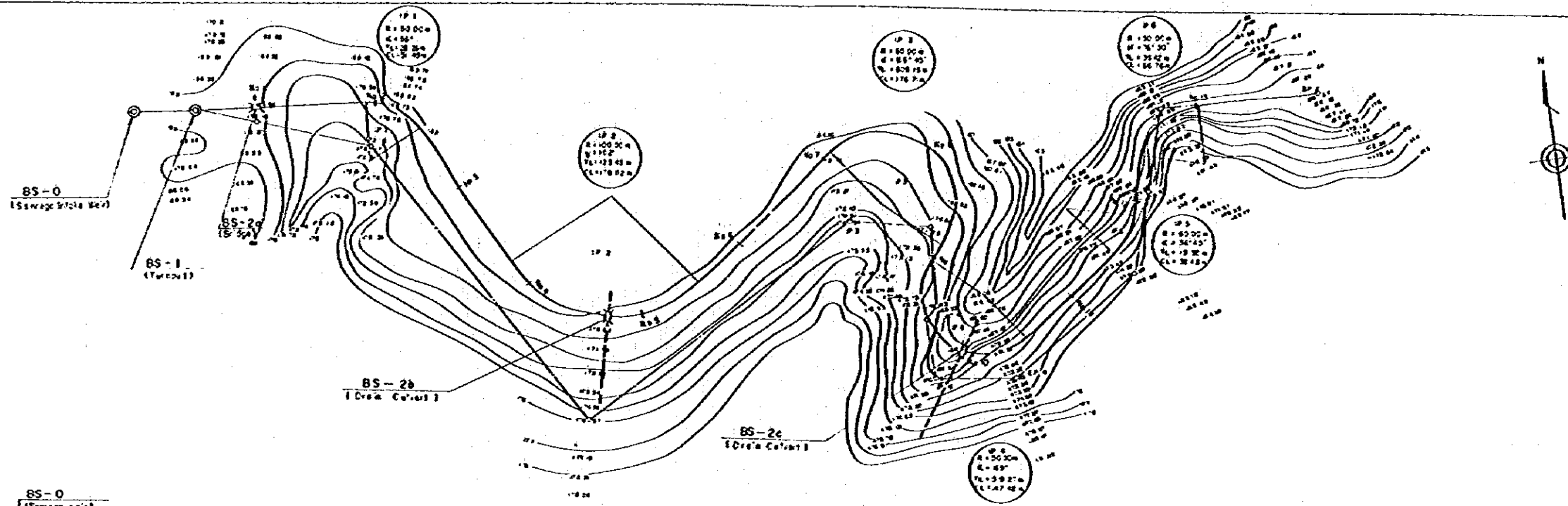


DIMENSION TABLE OF BRIDGE

| Q (m <sup>3</sup> /sec) | R (m/m) | L1 (m/m) | L2 (m/m) | L3 (m/m) | H (m/m) |
|-------------------------|---------|----------|----------|----------|---------|
| 0.371                   | 2.00    | 11.20    | 11.20    | 4.500    | 3500    |
| 0.724                   | 2.50    | 11.20    | 11.20    | 4.500    | 3500    |
| 1.518                   | 2.50    | 11.20    | 11.20    | 4.500    | 3500    |
| 0.258                   | 2.50    | 11.20    | 11.20    | 4.500    | 3500    |
| 0.758                   | 2.50    | 11.20    | 11.20    | 4.500    | 3500    |
| 0.212                   | 2.50    | 11.20    | 11.20    | 4.500    | 3500    |

SCALE: A 1:100  
SCALE: B 1:50  
SCALE: C 1:25  
SCALE: D 1:10

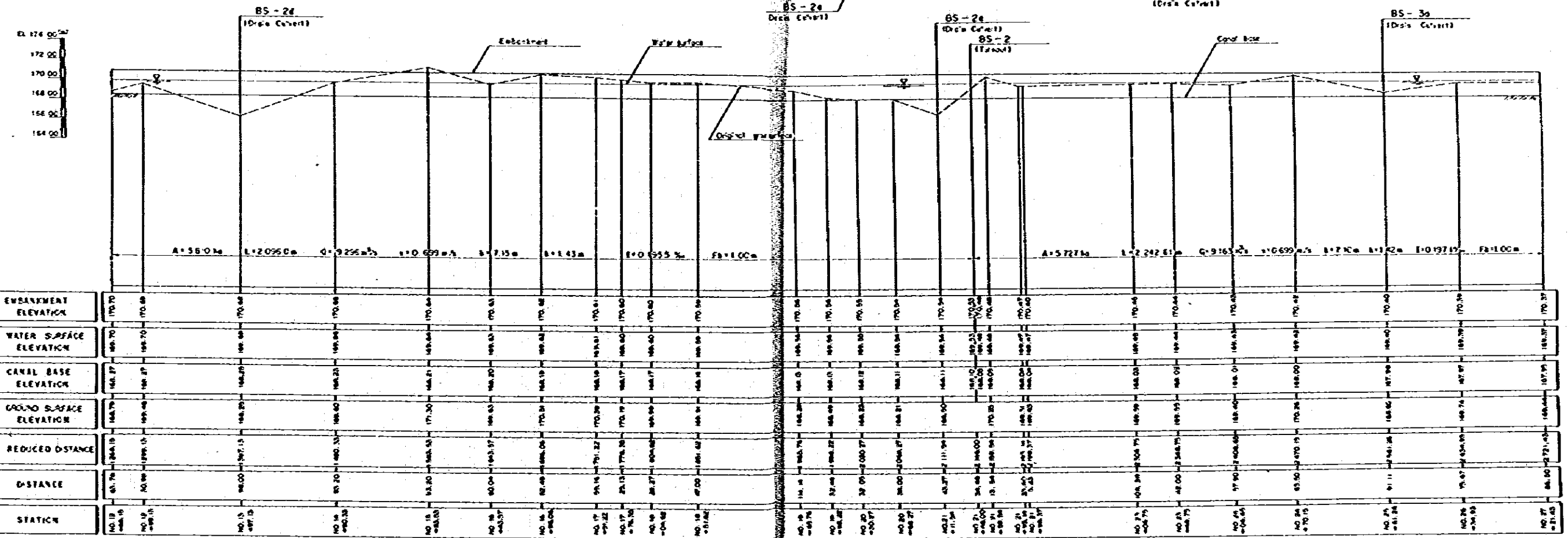
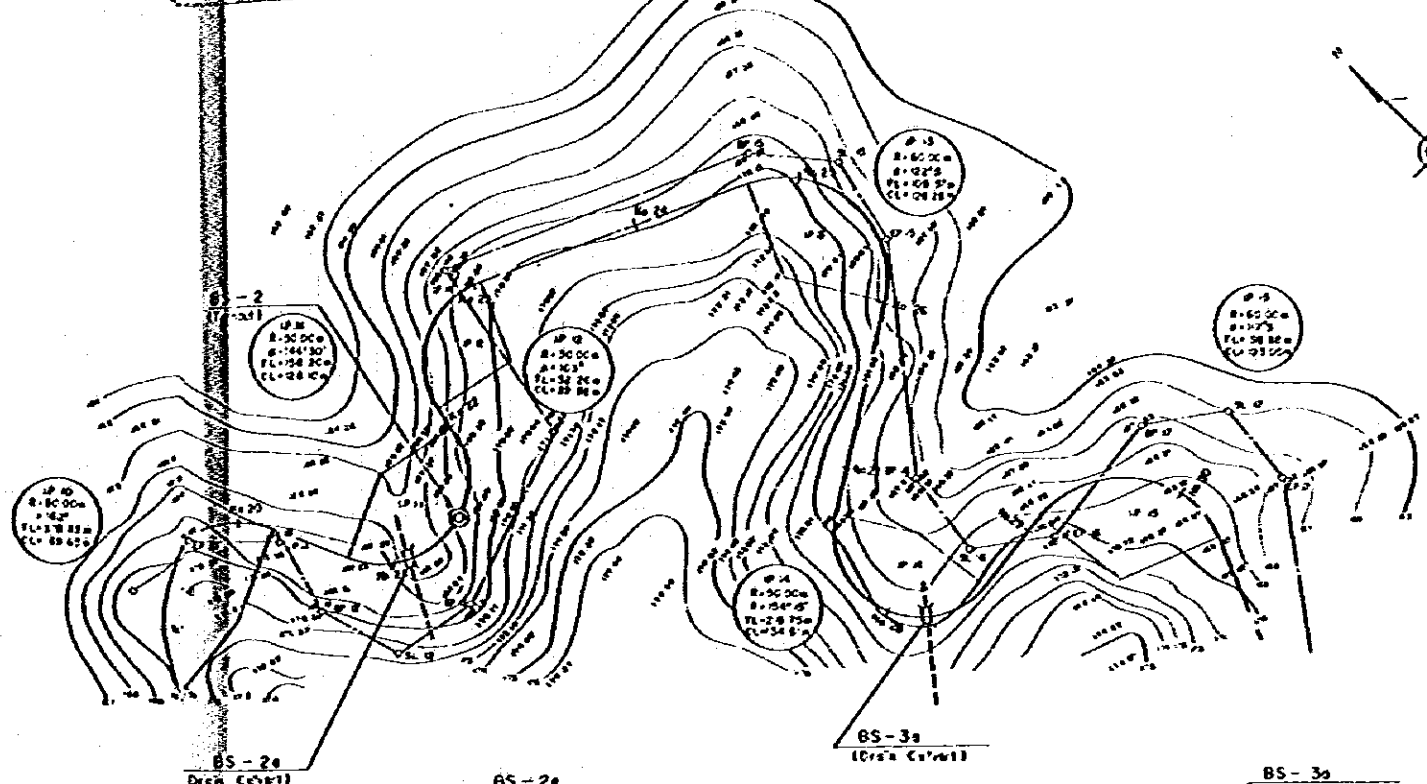
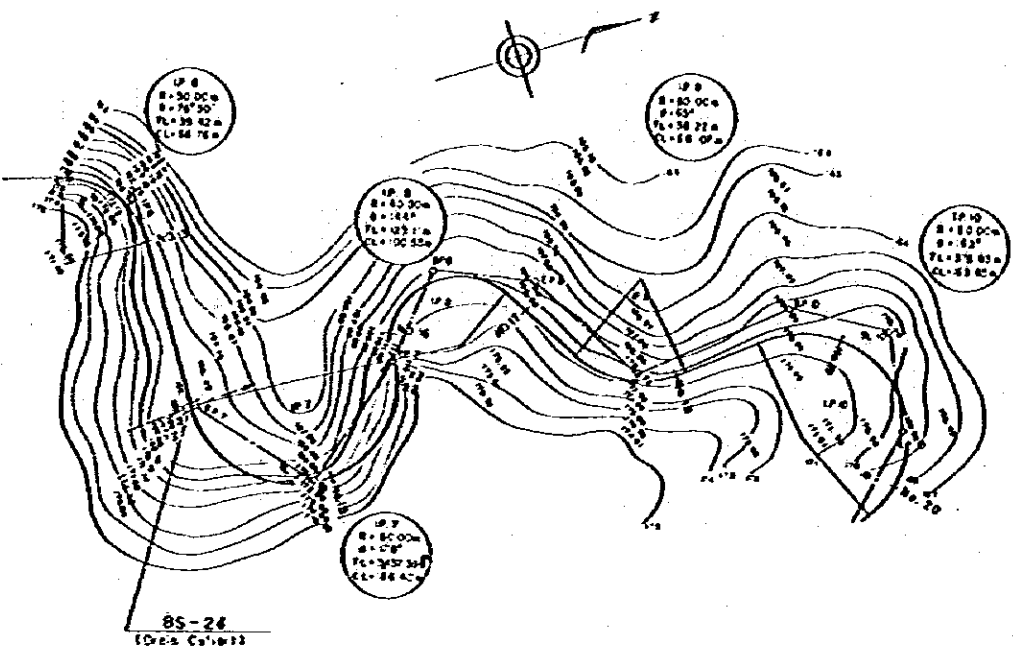
DISSEMINATE GENERAL OF WATER RESOURCES DEVELOPMENT  
SANRGO IRRIGATION PROJECT  
TITLE OF DRAWING  
**TYPICAL DRAWING OF CHUTE AND BRIDGE**  
JAPAN INTERNATIONAL COOPERATION AGENCY  
1987  
DWS NO  
300-6



DIRECTOR GENERAL OF WATER RESOURCES DEVELOPMENT  
 SANREGO IRRIGATION PROJECT  
 TITLE OF DRAWING  
**PLAN AND PROFILE OF SANREGO MAIN CANAL (11/10)**  
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) NO.  
 TOKYO 400-1

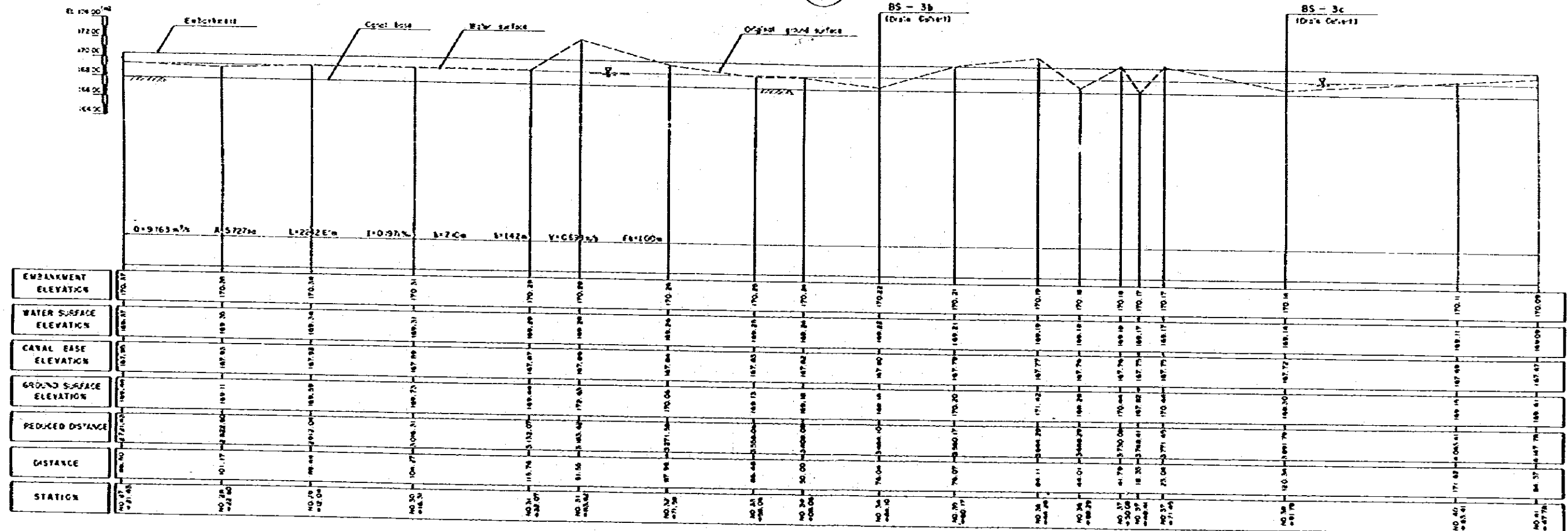
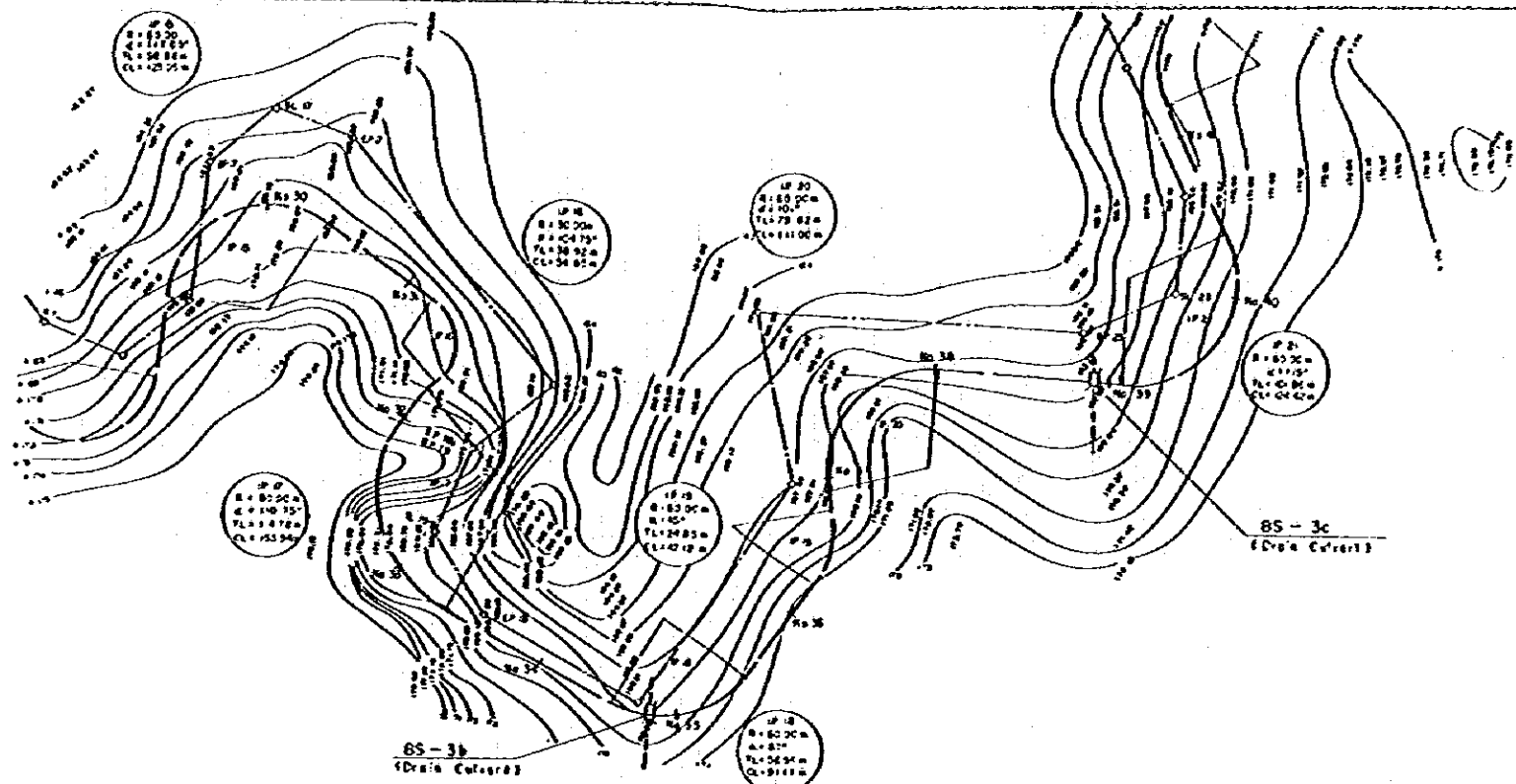
SCALE 1:2000





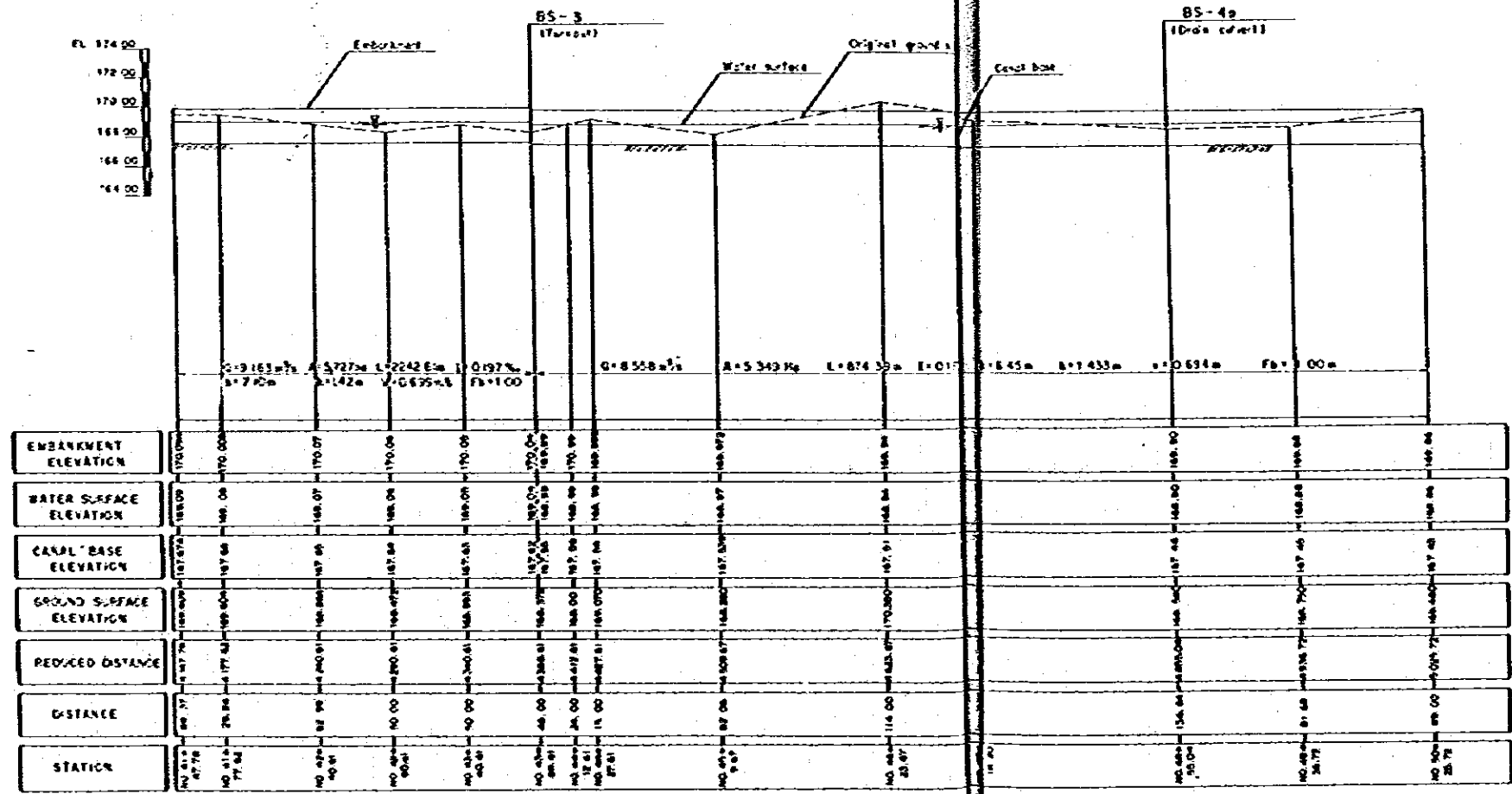
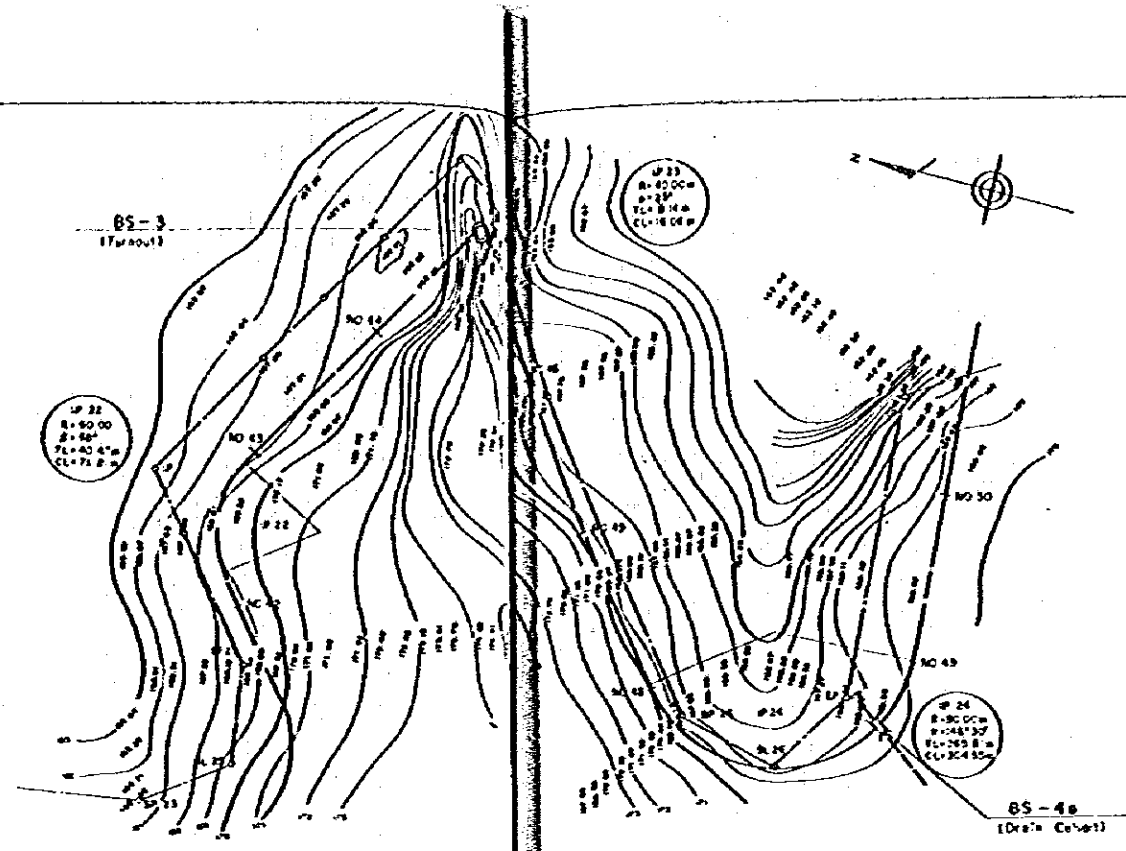
SCALE 1:2000

DISCRETE GENERAL OF WATER RESOURCES DEVELOPMENT  
 SANREGO IRRIGATION PROJECT  
 TITLE OF DRAWING  
**PLAN AND PROFILE OF SANREGO  
 MAIN CANAL (2/01)**  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO  
 085 NO  
 400-2



SCALE 1:2000

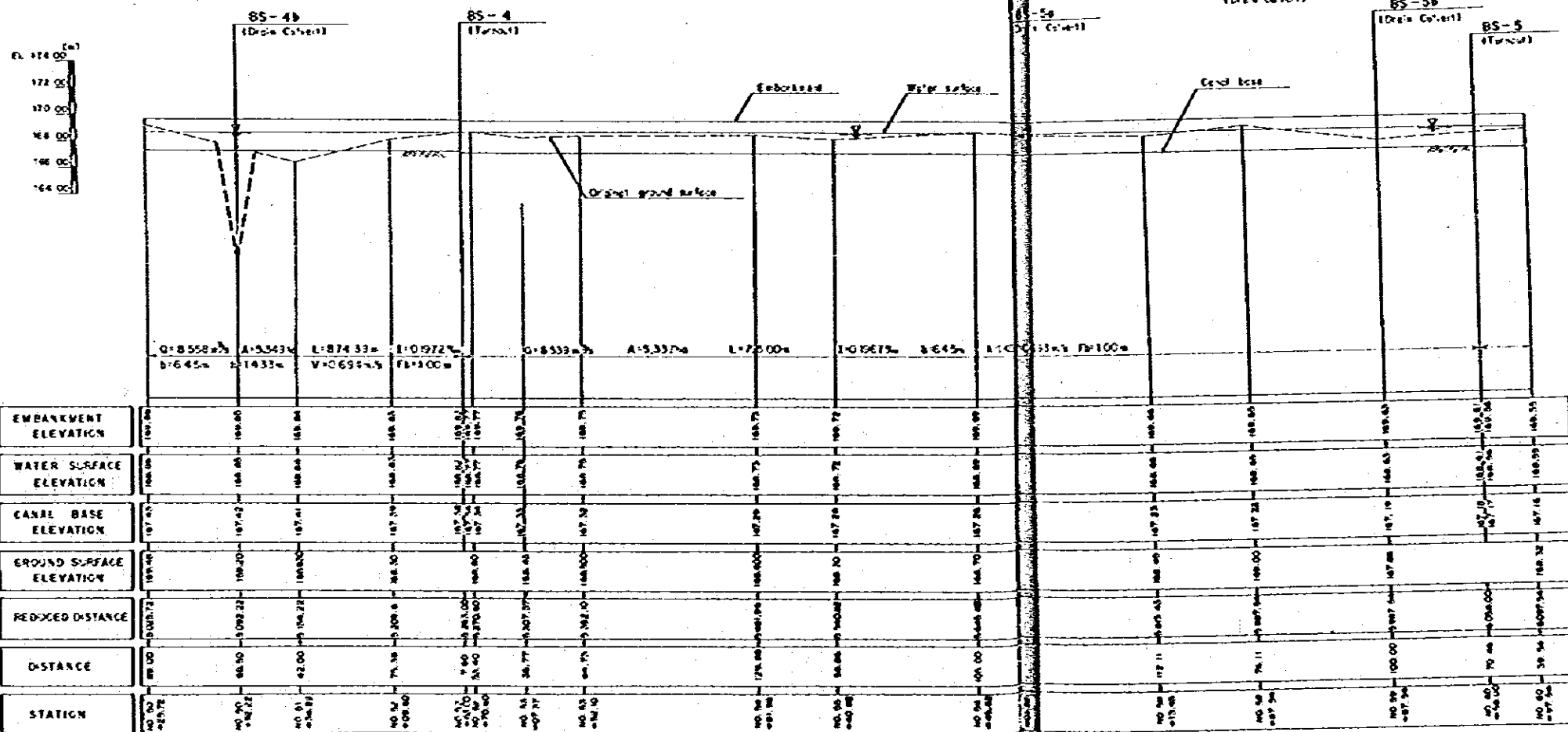
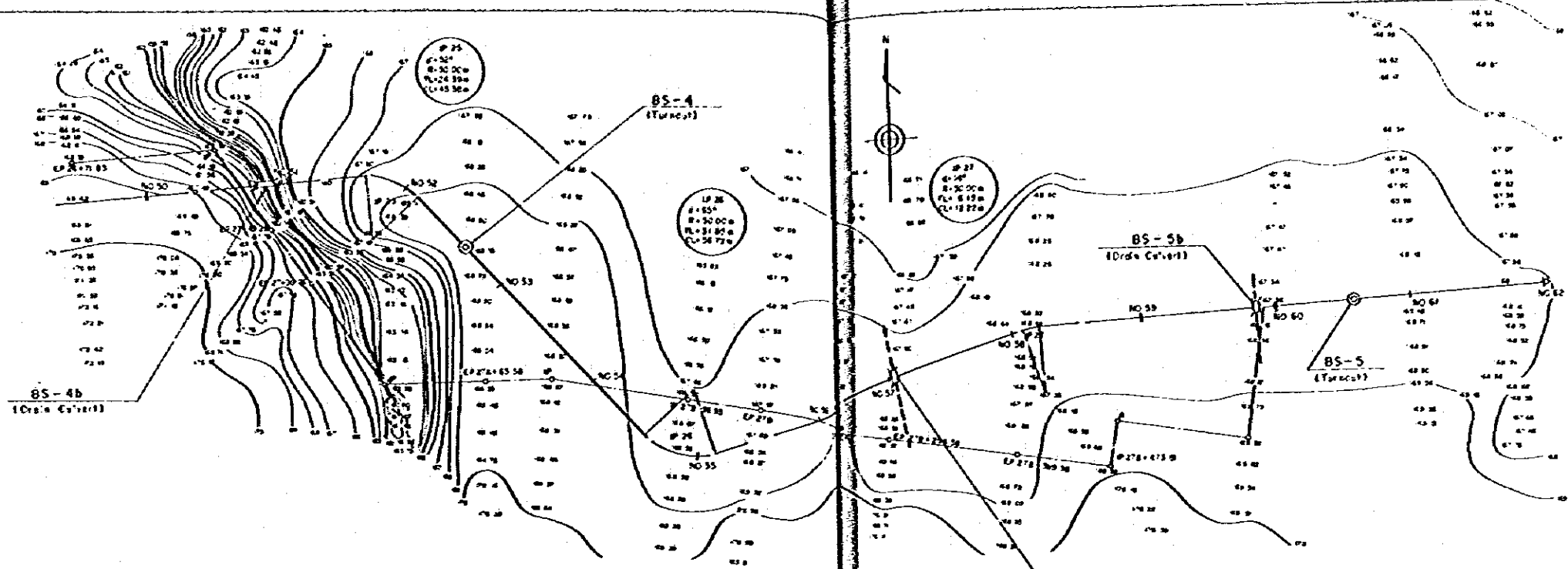
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
 SANREGO IRRIGATION PROJECT  
 TITLE OF DRAWING  
**PLAN AND PROFILE OF SANREGO MAIN CANAL** (13/10)  
 JAPAN INTERNATIONAL COOPERATION AGENCY DWS NO  
 TOKYO 400-3



| EMBAKMENT ELEVATION | WATER SURFACE ELEVATION | CANAL BASE ELEVATION | GROUND SURFACE ELEVATION | REDUCED DISTANCE | DISTANCE | STATION |
|---------------------|-------------------------|----------------------|--------------------------|------------------|----------|---------|
| 174.00              | 173.00                  | 172.00               | 171.00                   | 0.00             | 0.00     | 0+00    |
| 173.00              | 172.00                  | 171.00               | 170.00                   | 10.00            | 10.00    | 0+10    |
| 172.00              | 171.00                  | 170.00               | 169.00                   | 20.00            | 20.00    | 0+20    |
| 171.00              | 170.00                  | 169.00               | 168.00                   | 30.00            | 30.00    | 0+30    |
| 170.00              | 169.00                  | 168.00               | 167.00                   | 40.00            | 40.00    | 0+40    |
| 169.00              | 168.00                  | 167.00               | 166.00                   | 50.00            | 50.00    | 0+50    |
| 168.00              | 167.00                  | 166.00               | 165.00                   | 60.00            | 60.00    | 0+60    |
| 167.00              | 166.00                  | 165.00               | 164.00                   | 70.00            | 70.00    | 0+70    |
| 166.00              | 165.00                  | 164.00               | 163.00                   | 80.00            | 80.00    | 0+80    |
| 165.00              | 164.00                  | 163.00               | 162.00                   | 90.00            | 90.00    | 0+90    |
| 164.00              | 163.00                  | 162.00               | 161.00                   | 100.00           | 100.00   | 0+100   |

SCALE 1:2000

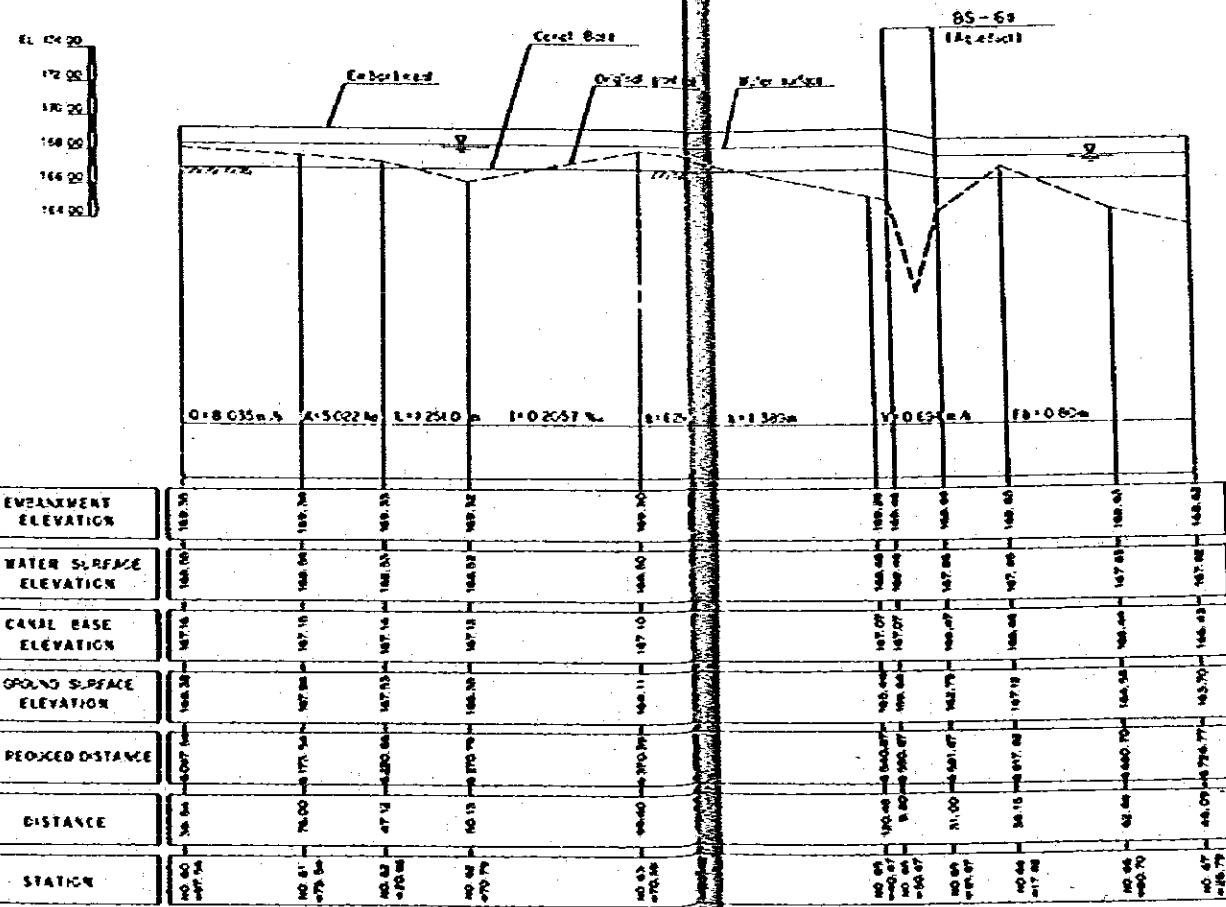
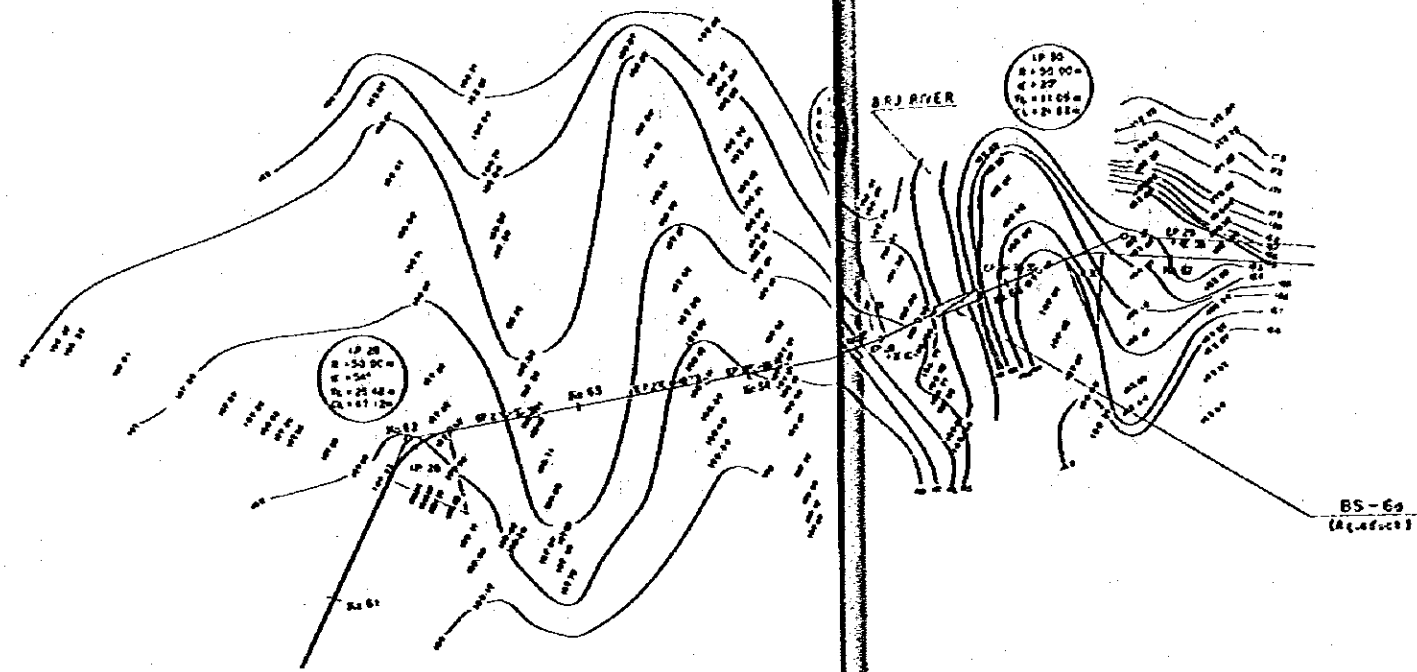
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
 SANREGO IRRIGATION PROJECT  
 TITLE OF DRAWING  
**PLAN AND PROFILE OF SANREGO  
 MAIN CANAL** (4/101)  
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) NO.  
 TOKYO 400-4



SCALE 1:2000

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
 SANREGO IRRIGATION PROJECT  
 TITLE OF DRAWING  
**PLAN AND PROFILE OF SANREGO MAIN CANAL** 15/101  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO

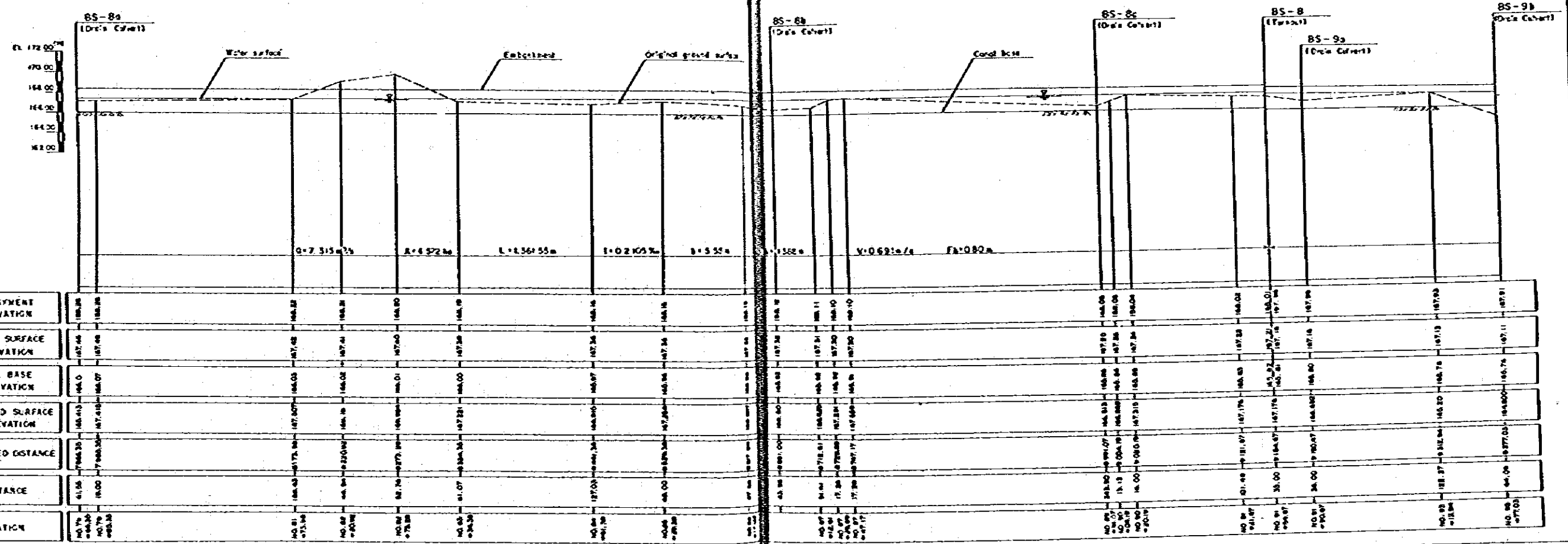
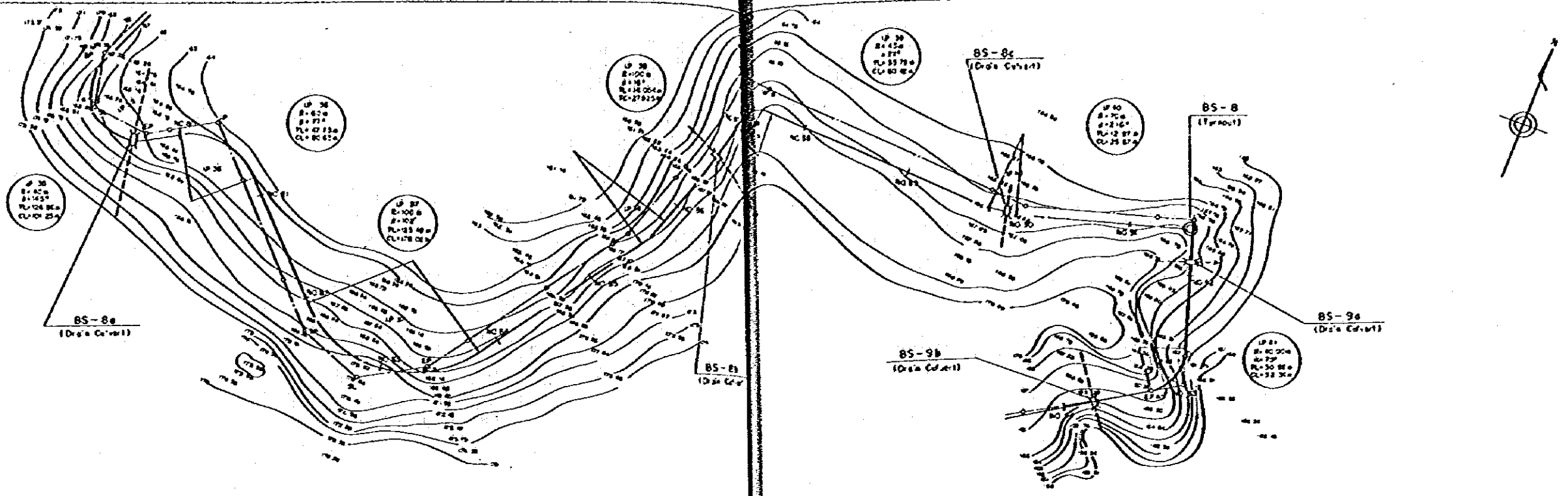
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| DWS NO | 400-5 |
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SCALE 1:2000

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
 SANREGO IRRIGATION PROJECT  
 TITLE OF DRAWING  
**PLAN AND PROFILE OF SANREGO MAIN CANAL** (6/10)  
 JAPAN INTERNATIONAL COOPERATION AGENCY CWS NO. 400-6  
 TOKYO





SCALE 1:2000

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
 SANREGO IRRIGATION PROJECT  
 TITLE OF DRAWING  
**PLAN AND PROFILE OF SANREGO MAIN CANAL** (18/101)  
 JAPAN INTERNATIONAL COOPERATION AGENCY CWS 30  
 TOKYO 400-8







JICA

