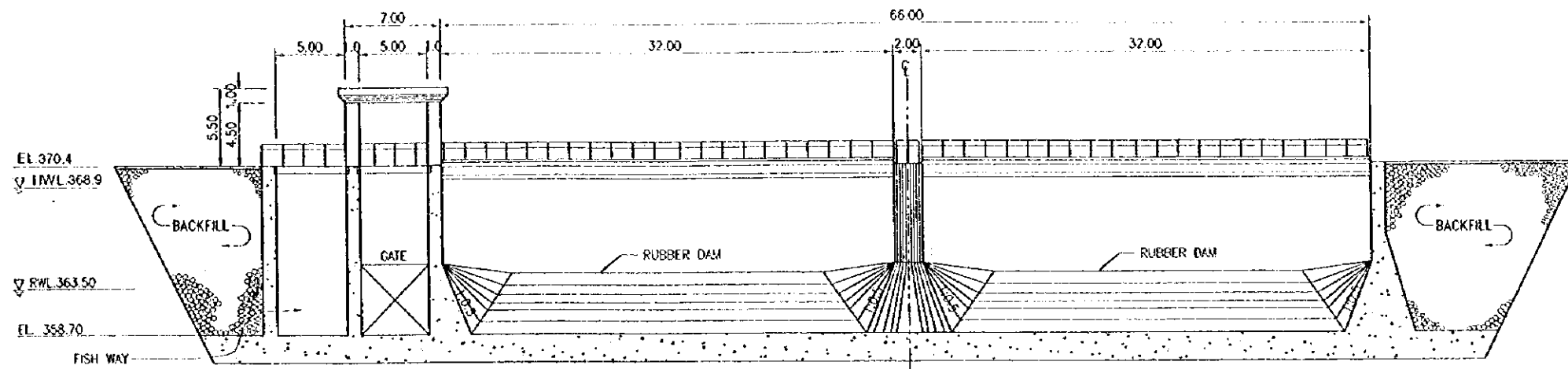


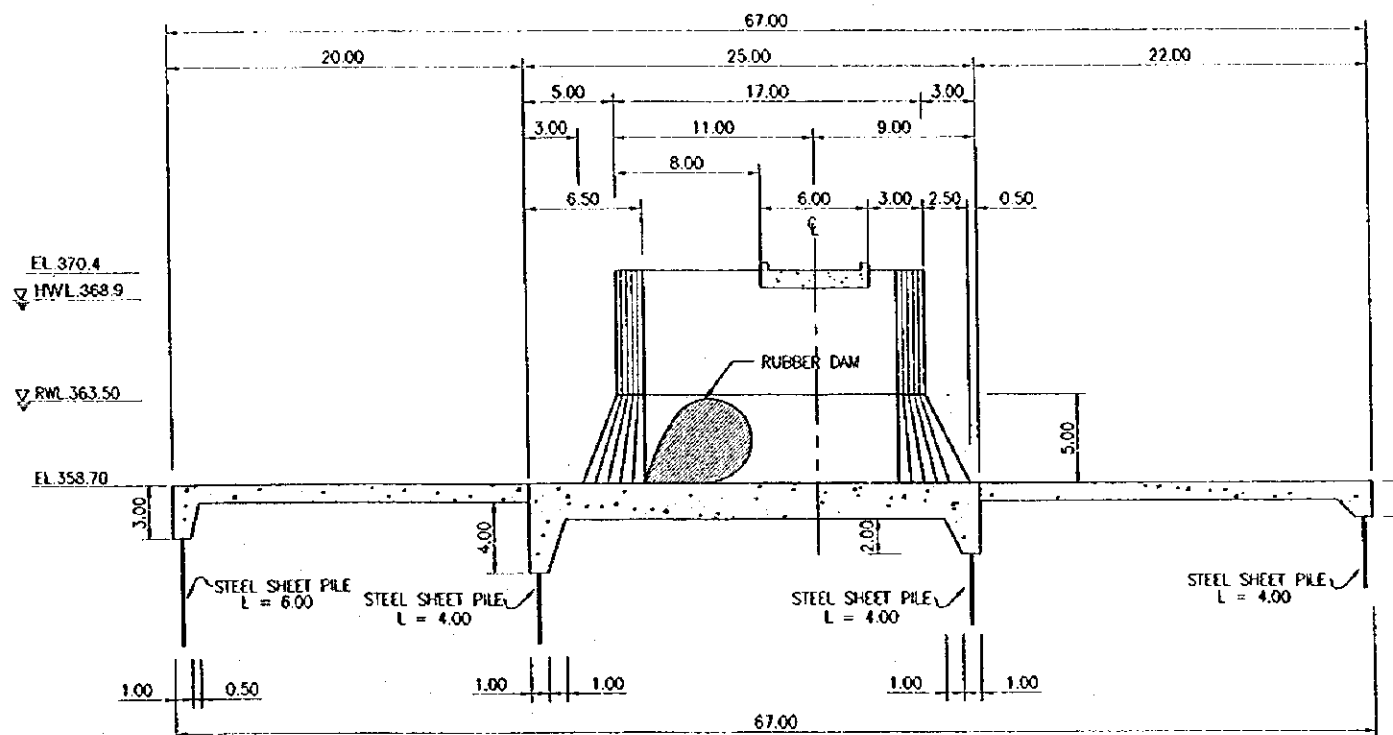
2,174,900 mN  
 2,174,800 mN  
 2,174,700 mN  
 2,174,600 mN  
 2,174,500 mN  
 2,174,400 mN  
 2,174,300 mN  
 2,174,200 mN

623,800 mE  
 623,900 mE  
 624,000 mE  
 624,100 mE  
 624,200 mE  
 624,300 mE  
 624,400 mE  
 624,500 mE

|  |                    |
|--|--------------------|
| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| General Plan of Ing Diversion Weir and Intake    | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.3-2           |

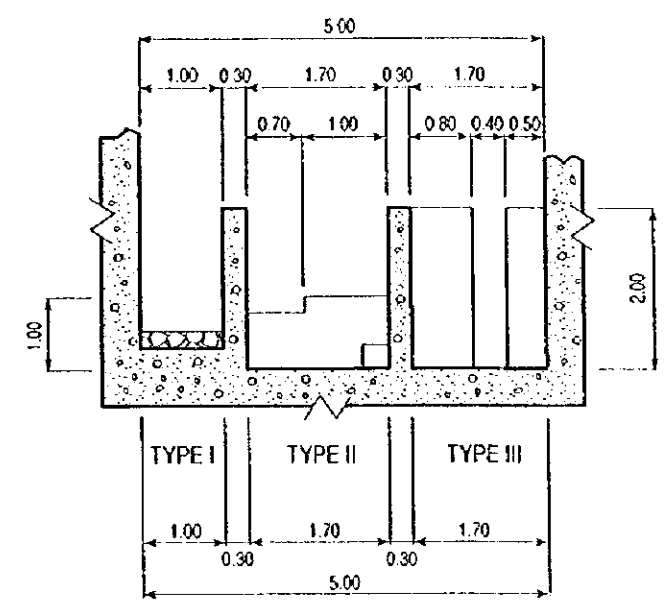
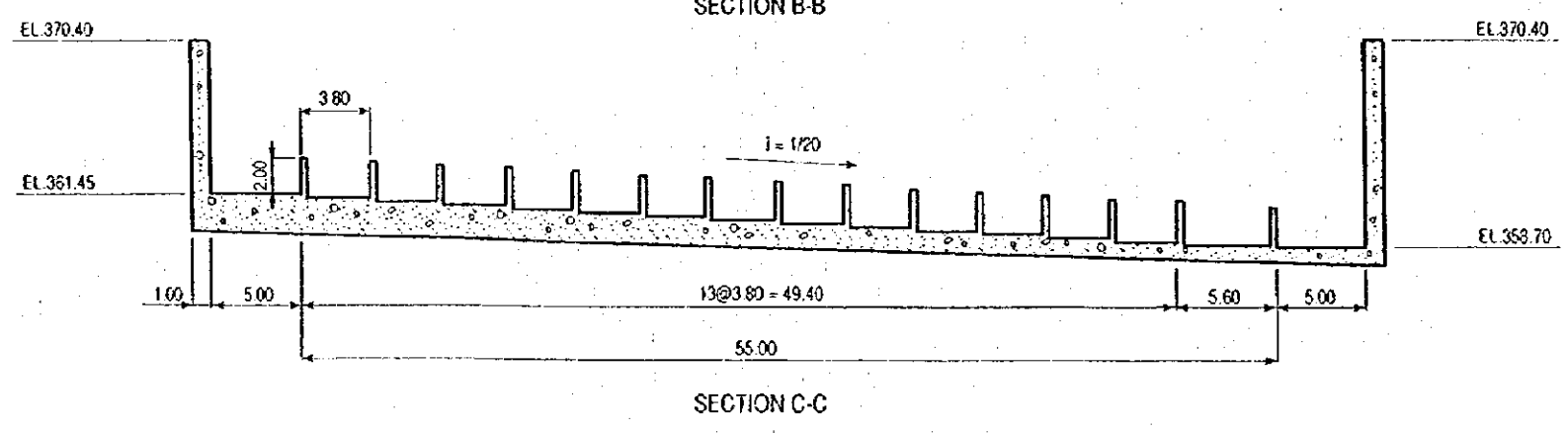
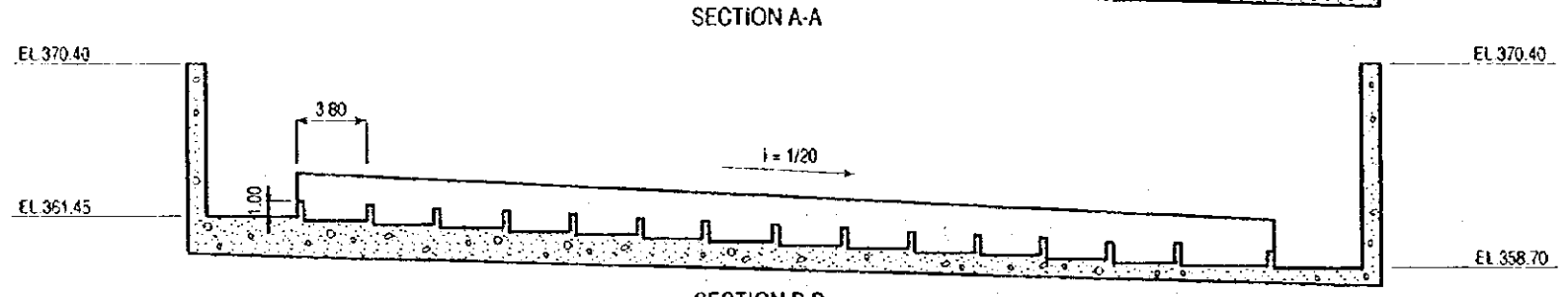
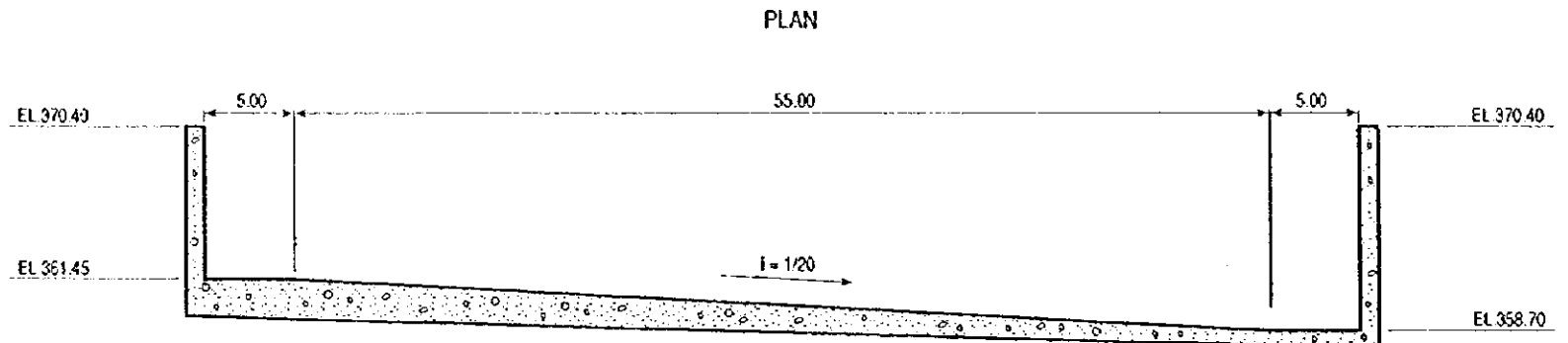
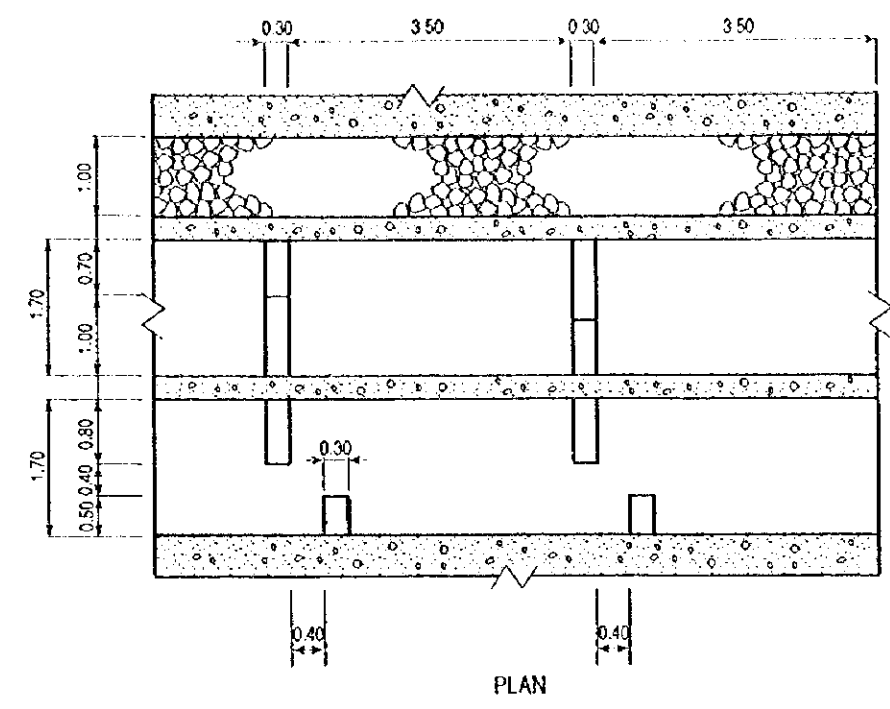
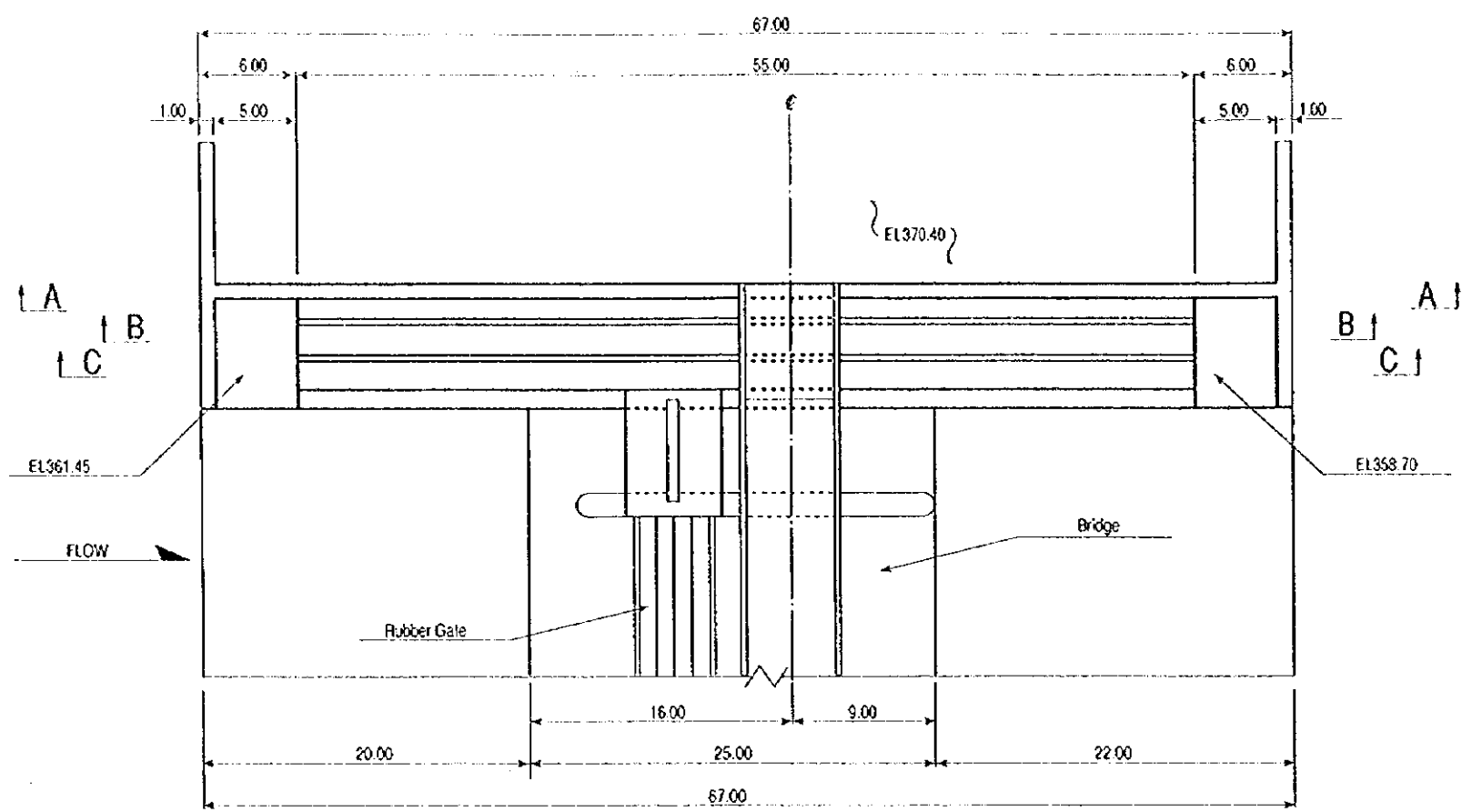


UPSTREAM VIEW



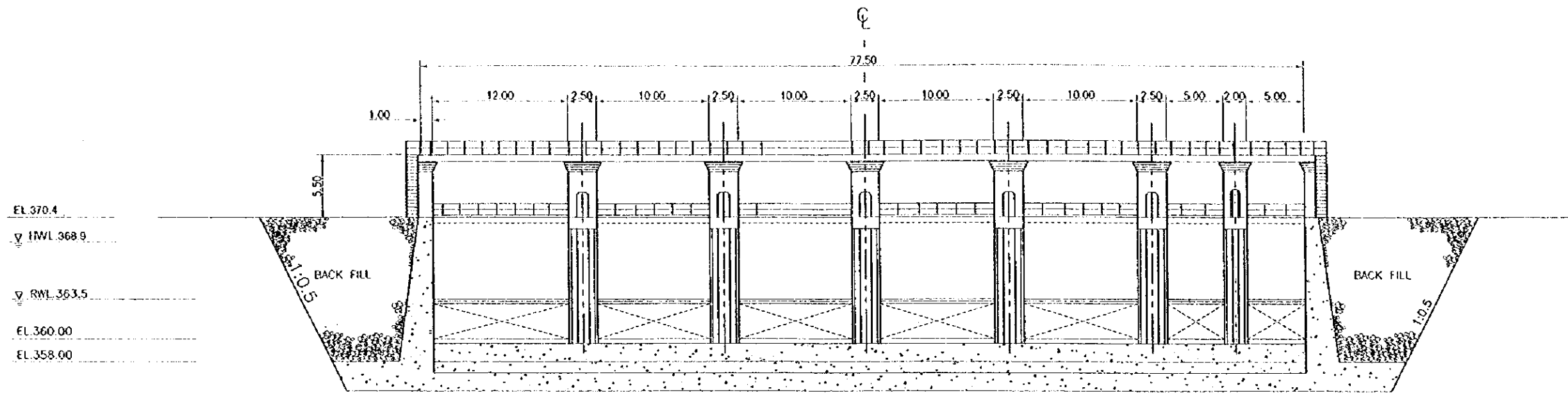
PROFILE  
ING DIVERSION WEIR

|  |                    |
|--|--------------------|
| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| Profile of Ing Diversion Weir                    | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.3-3           |

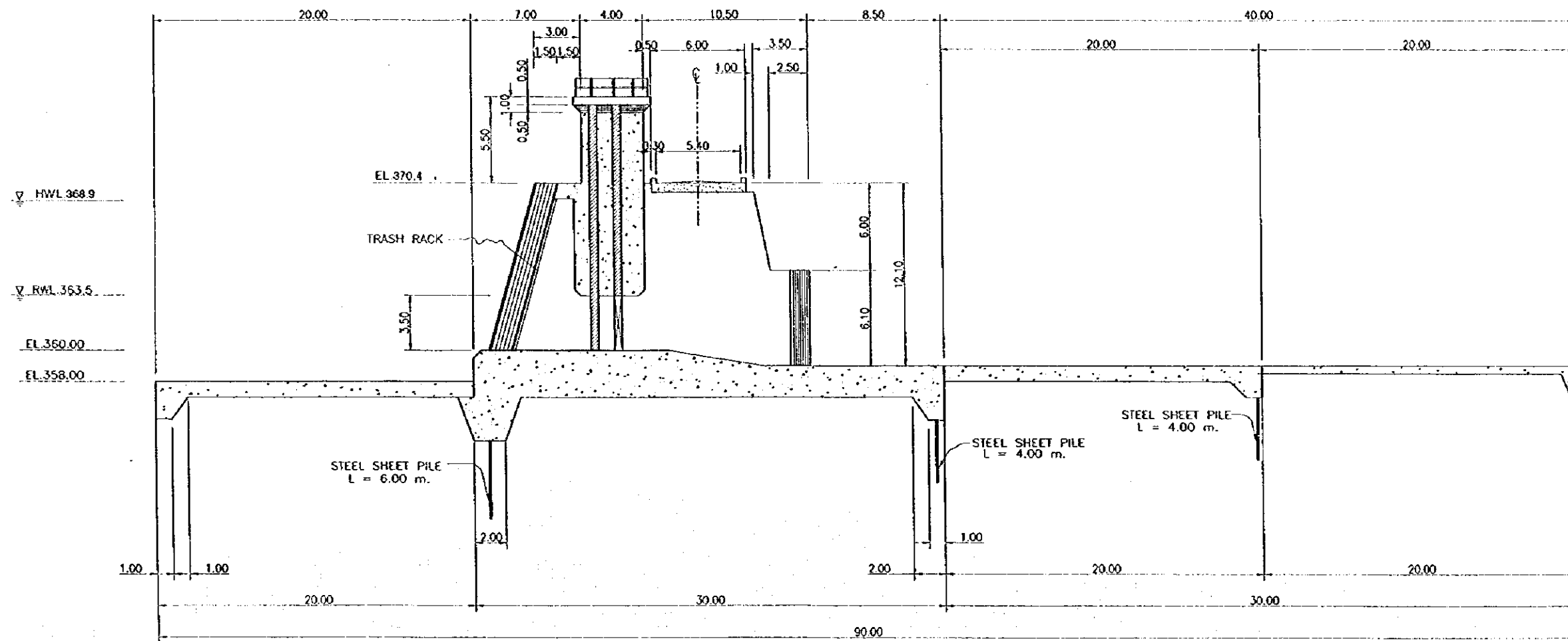


- NOTES:  
 TYPE I : SLOPE TYPE WITH RUBBLE STONE SURFACE  
 TYPE II : LADDER TYPE  
 TYPE III : VERTICAL SLOT TYPE

|  |                    |
|--|--------------------|
| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| Fish-way of Ing Diversion Weir                   | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.3-4           |



UPSTREAM VIEW



PROFILE OF INTAKE

|  |                   |
|--|-------------------|
| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                   |
| Profile of Ing Intake Structure                  | MAP & Drawings No |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure            |
| SANYU CONSULTANTS INC. & NIPPON KOBI CO., LTD.   | 11.2.3-5          |

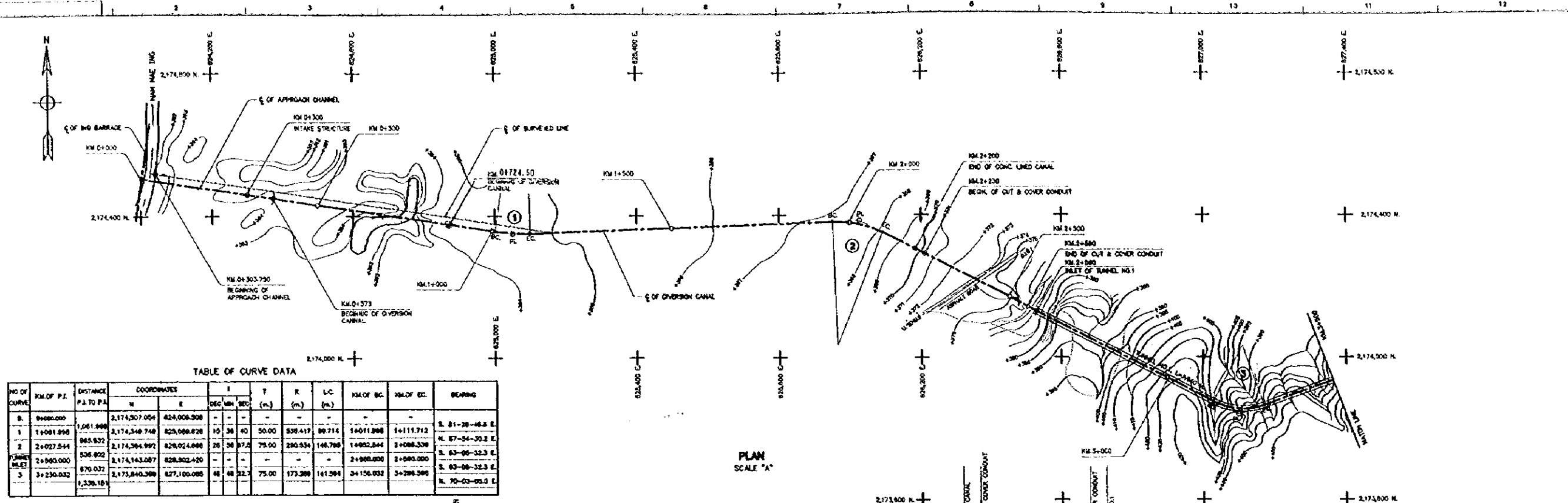
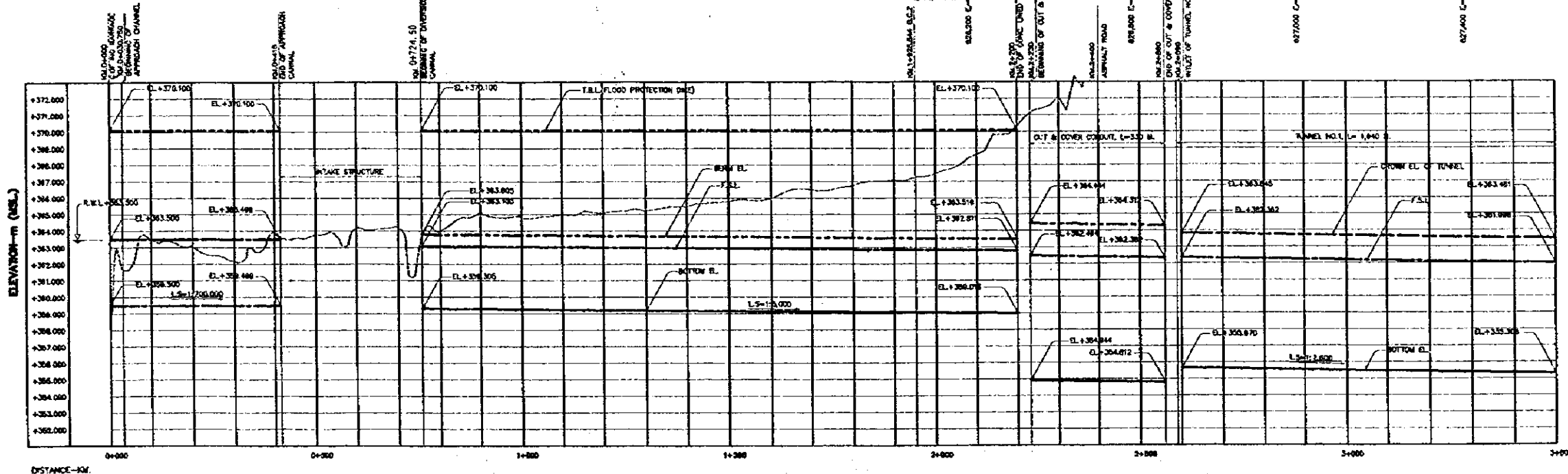
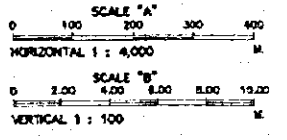


TABLE OF CURVE DATA

| NO OF CURVE | KM OF P.I. | DISTANCE P.I. TO P.C. | COORDINATES   |             | I  | T    | R     | L.C.    | KM OF B.C. | KM OF E.C. | BEARING          |
|-------------|------------|-----------------------|---------------|-------------|----|------|-------|---------|------------|------------|------------------|
|             |            |                       | N             | E           |    |      |       |         |            |            |                  |
| B           | 0+000.000  |                       | 2,174,307.054 | 424,008.508 | -  | -    | -     | -       | -          | -          | S. 81-28-46.8 E. |
| 1           | 1+081.898  | 1,081.898             | 2,174,348.748 | 425,008.828 | 10 | 38   | 50.00 | 538.417 | 89.714     | 14011.288  | N. 87-54-30.2 E. |
| 2           | 2+027.544  | 945.632               | 2,174,384.992 | 426,024.488 | 28 | 38   | 37.2  | 280.534 | 146.788    | 14082.844  | S. 63-08-32.3 E. |
| 3           | 3+230.032  | 202.488               | 2,173,840.388 | 427,100.088 | 48 | 32.2 | 75.00 | 173.388 | 141.584    | 34156.032  | N. 70-02-02.0 E. |



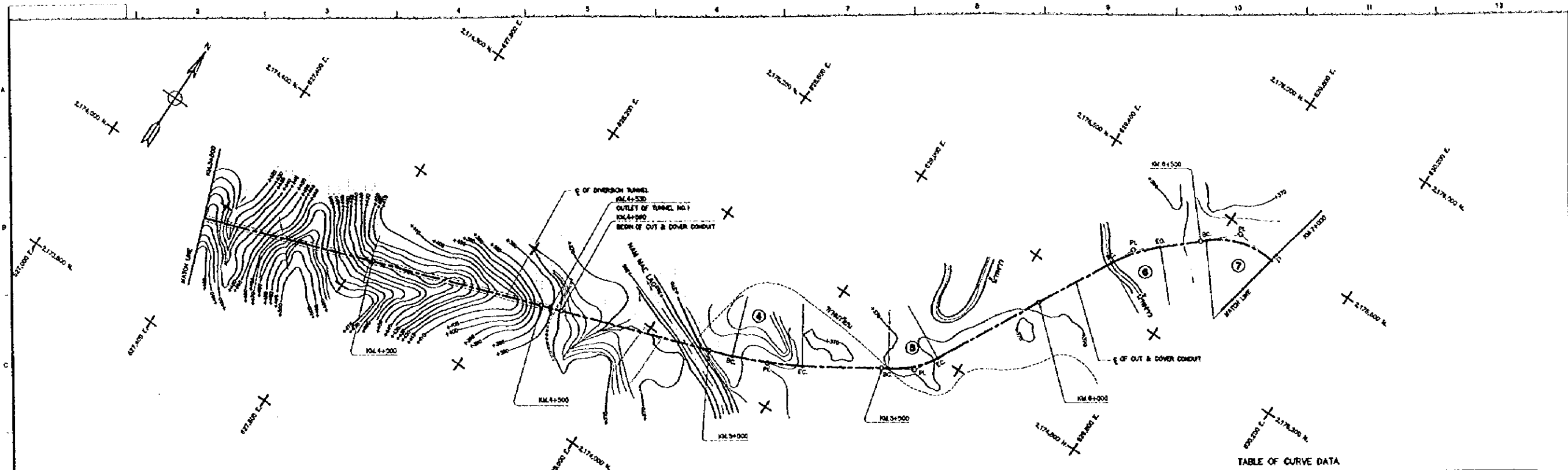
PROFILE SCALE  
HORIZONTAL "A"  
VERTICAL "B"



HYDRAULIC PROPERTIES AND DIMENSIONS OF DIVERSION CANAL

| KM TO KM  | $Q_{req}$ (m <sup>3</sup> /s) | $Q_{des}$ (m <sup>3</sup> /s) | A (m <sup>2</sup> ) | R (m) | V (m/s) | n     | L.S.        | S.S.    | B (m)  | D (m) | t (m) | H <sub>c</sub> (m) | H <sub>b</sub> (m) | B <sub>L</sub> (m) | B <sub>R</sub> (m) | T <sub>L</sub> (m) | T <sub>R</sub> (m) | R <sub>L</sub> (m) | R <sub>R</sub> (m) | REMARK                |
|-----------|-------------------------------|-------------------------------|---------------------|-------|---------|-------|-------------|---------|--------|-------|-------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-----------------------|
| 0+030.750 | 175.000                       | 174.218                       | 862.000             | 3.840 | 0.163   | 0.018 | 1 : 700,000 | 1 : 2.0 | 230.00 | 4.000 | 0.20  | -                  | WARY               | 4.00               | 4.00               | 10.00              | 8.00               | 100.00             | 100.00             | EARTH CANAL           |
| 0+724.50  | 175.000                       | 175.018                       | 87.503              | 2.805 | 1.795   | 0.018 | 1 : 5,000   | 1 : 1.8 | 20.00  | 3.785 | 0.20  | 4.50               | WARY               | 2.00               | 2.00               | 8.00               | 6.00               | 75.00              | 75.00              | CONC. LINED CANAL     |
| 2+230.000 | 175.000                       | 175.093                       | 84.373              | 2.813 | 2.720   | 0.015 | 1 : 2,500   | -       | 4.79   | 4.780 | -     | 11.80              | -                  | -                  | -                  | 8.00               | -                  | 75.00              | 75.00              | OUT & COVER CONDUIT   |
| 2+590.000 | 175.000                       | 174.981                       | 85.807              | 2.817 | 2.858   | 0.015 | 1 : 2,500   | -       | 4.45   | 4.882 | -     | 11.8178            | -                  | -                  | -                  | -                  | -                  | -                  | -                  | WIDE HORSESHOE TUNNEL |

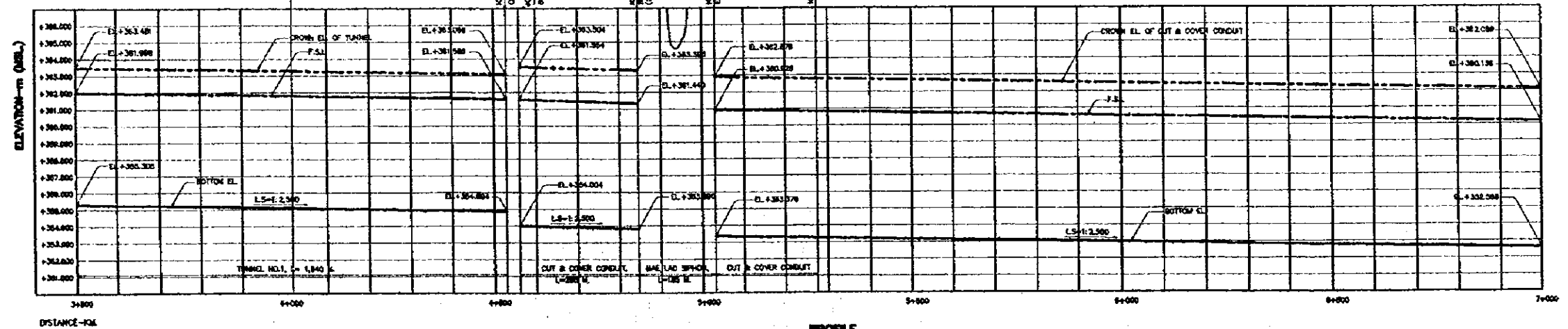
THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT  
 PLAN AND PROFILE OF ING-YOT DIVERSION CANAL (1/4)  
 KM 0+000 TO KM 3+500  
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)  
 SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.  
 Map & Draw - Ing No.  
 Figure 11.2.4-1



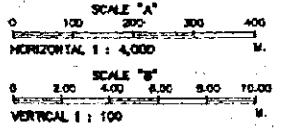
PLAN SCALE "A"

TABLE OF CURVE DATA

| NO. OF CURVE | MID. OF P.I. | DISTANCE P.I. TO P.A. | COORDINATES   |             | T (M) | Y (M) | R (M)  | L.C. (M) | X OF BC | Y OF BC   | BEARING   |                  |
|--------------|--------------|-----------------------|---------------|-------------|-------|-------|--------|----------|---------|-----------|-----------|------------------|
|              |              |                       | N             | E           |       |       |        |          |         |           |           |                  |
| 3            | 3+330.000    | 1,336.10              | 2,175,845.396 | 827,102.889 | 40    | 22.7  | 75.00  | 175.799  | 141.564 | 3+189.432 | 3+594.568 | N. 70-03-08.0 E. |
| 4            | 4+000.000    | 915.728               | 2,174,384.898 | 826,307.781 | -     | 0.4   | -      | -        | -       | 4+000.000 | 4+000.000 | N. 70-03-04.7 E. |
| 5            | 5+000.000    | 420.063               | 2,174,728.380 | 826,288.088 | 20    | 24.4  | 75.00  | 207.836  | 144.737 | 5+020.780 | 5+087.517 | N. 58-39-21.6 E. |
| 6            | 6+000.000    | 715.889               | 2,170,273.171 | 828,617.843 | 33    | 29.48 | 75.00  | 281.428  | 147.801 | 6+233.048 | 6+300.947 | N. 27-24-08.8 E. |
| 7            | 7+000.000    | 781.108               | 2,170,548.877 | 828,686.328 | 50    | 12.44 | 100.00 | 213.116  | 187.033 | 8+115.610 | 8+708.943 | S. 78-03-41.3 E. |



PROFILE SCALE "A" HORIZONTAL "A" VERTICAL "B"



HYDRAULIC PROPERTIES AND DIMENSIONS OF DIVERSION CANAL

| KM TO KM  | $Q_{req}$ (m <sup>3</sup> /s) | $Q_{des}$ (m <sup>3</sup> /s) | A (m <sup>2</sup> ) | R (m)  | V (m/s) | n     | L.S.      | S.S. | B (m)  | D (m)   | t (m) | Hc (m)  | Hb (m) | Bc (m) | Bb (m) | Tc (m) | Tb (m) | Rc (m) | Rb (m) | REMARK |                       |
|-----------|-------------------------------|-------------------------------|---------------------|--------|---------|-------|-----------|------|--------|---------|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|-----------------------|
| 3+500.000 | 4+530.000                     | 175.000                       | 174.861             | 89.867 | 2.817   | 0.015 | 1 : 2,500 | -    | r=0.45 | 6-6.800 | -     | H=8.170 | -      | -      | -      | -      | -      | -      | -      | -      | WIDE HORSESHOE TUNNEL |
| 4+580.000 | 4+848.000                     | 175.000                       | 175.083             | 84.373 | 2.813   | 0.015 | 1 : 2,500 | -    | r=0.75 | 6-7.900 | -     | H=9.50  | -      | -      | -      | 8.00   | -      | 75.00  | 75.00  | -      | CUT & COVER CONDUIT   |
| 5+030.000 | 7+000.000                     | 175.000                       | 175.063             | 84.373 | 2.813   | 0.015 | 1 : 2,500 | -    | r=0.75 | 6-7.500 | -     | H=9.50  | -      | -      | -      | 6.00   | -      | 75.00  | 75.00  | -      | CUT & COVER CONDUIT   |

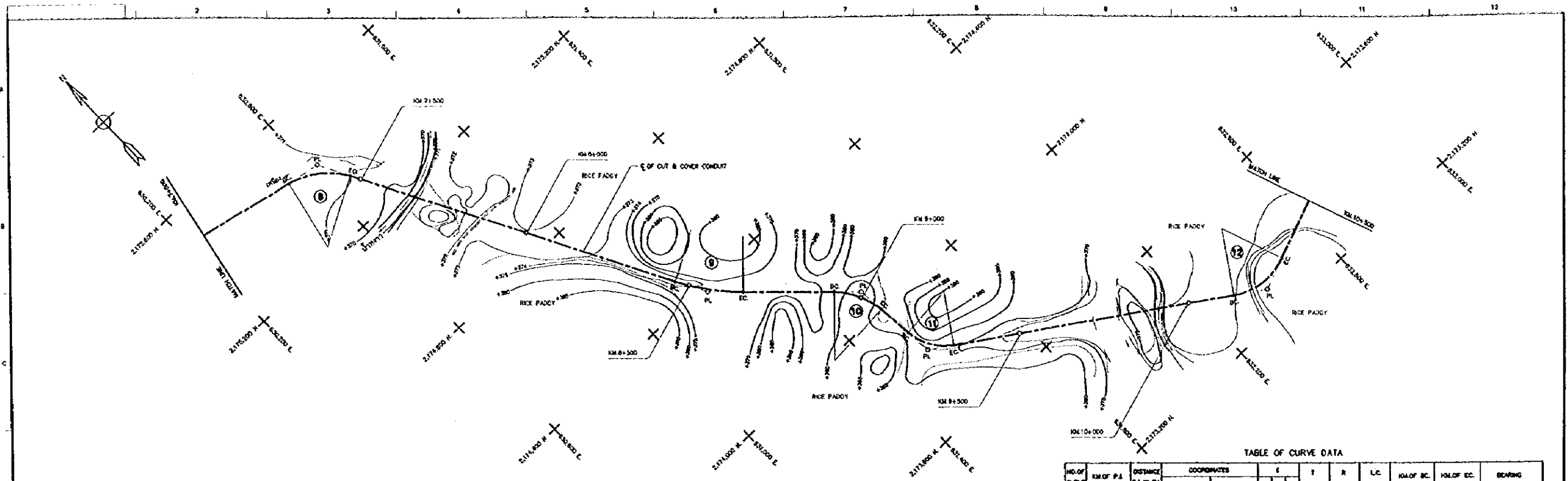
**THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT**

PLAN AND PROFILE OF ING-YOT DIVERSION CANAL (2/4)  
KM.3+500 TO KM.7+000

Map & Draw-  
ing No.

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)  
SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.

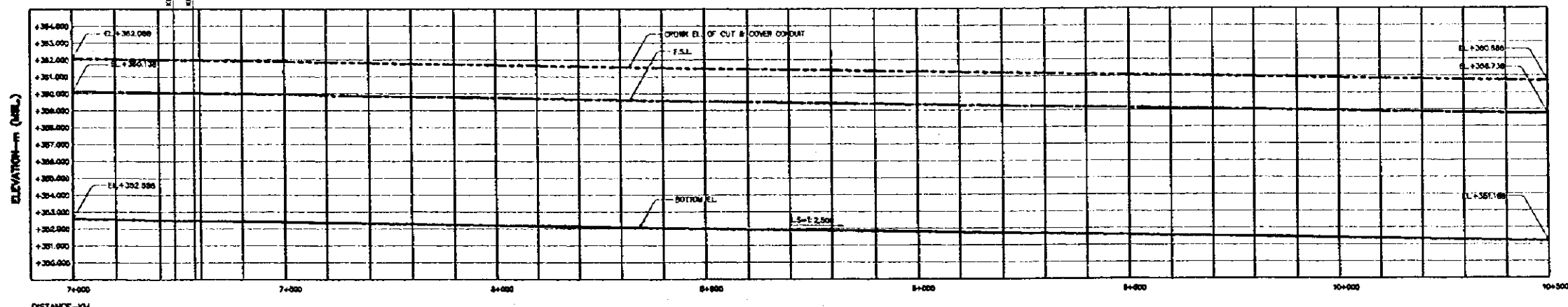
Figure  
11.2.4-2



PLAN SCALE "A"

TABLE OF CURVE DATA

| NO. OF CURVE | KM OF P.I. | DISTANCE P.I. TO P.I. | COORDINATES   |             | L  | T       | R      | L.C. (m.) | I.O.F. BC  | I.O.F. EC  | BEARING         |
|--------------|------------|-----------------------|---------------|-------------|----|---------|--------|-----------|------------|------------|-----------------|
|              |            |                       | N             | E           |    |         |        |           |            |            |                 |
| 7            | 8+815.810  | 781.108               | 2,175,398.857 | 828,868.328 | 50 | 12 34.3 | 100.00 | 213.418   | 8+518.810  | 8+702.843  | S. 78-53-41.3 E |
| 8            | 7+384.051  | 1,186.820             | 2,175,418.230 | 630,824.882 | 48 | 53 8.8  | 100.00 | 215.021   | 7+284.051  | 7+471.256  | S. 28-00-40.7 E |
| 9            | 8+368.175  | 438.828               | 2,174,382.488 | 651,200.188 | 17 | 40 31.4 | 100.00 | 840.284   | 8+408.175  | 8+808.573  | S. 46-42-52.8 E |
| 10           | 8+886.388  | 233.348               | 2,174,879.382 | 651,820.544 | 41 | 2 20.1  | 75.00  | 200.374   | 8+821.388  | 8+984.828  | S. 5-43-22.4 E  |
| 11           | 8+243.178  | 888.820               | 2,173,827.357 | 651,345.791 | 31 | 10 08.6 | 75.00  | 156.888   | 8+188.178  | 8+308.096  | S. 86-54-18.1 E |
| 12           | 10+331.888 | 427.887               | 2,173,282.106 | 832,382.371 | 54 | 18 21.4 | 100.00 | 184.803   | 10+131.888 | 10+316.873 | S. 68-46-18.6 E |



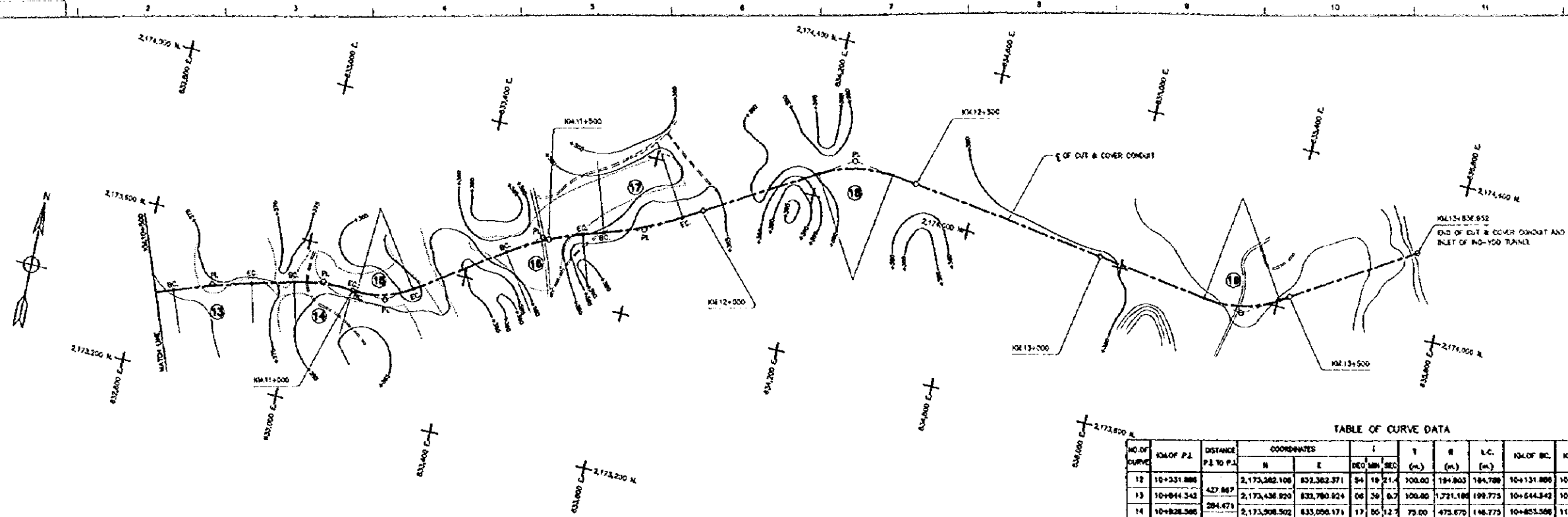
PROFILE SCALE "A" HORIZONTAL "A" VERTICAL "B"

SCALE "A"  
 0 100 200 300 400  
 HORIZONTAL 1 : 4,000 M.  
 SCALE "B"  
 0 2.00 4.00 6.00 8.00 10.00  
 VERTICAL 1 : 100 M.

HYDRAULIC PROPERTIES AND DIMENSIONS OF DIVERSION CANAL

| KM. TO KM.             | $Q_{req}$ (m <sup>3</sup> /s) | $Q_{des}$ (m <sup>3</sup> /s) | A (m <sup>2</sup> ) | R (m) | V (m/s) | a     | L.S.      | S.S. | B (m)  | D (m)   | t (m) | H <sub>c</sub> (m) | H <sub>g</sub> (m) | B <sub>L</sub> (m) | B <sub>R</sub> (m) | T <sub>L</sub> (m) | T <sub>R</sub> (m) | F <sub>L</sub> (m) | F <sub>R</sub> (m) | REMARK              |
|------------------------|-------------------------------|-------------------------------|---------------------|-------|---------|-------|-----------|------|--------|---------|-------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| 7+000.000 - 10+500.000 | 175.000                       | 175.063                       | 64.373              | 2.813 | 2.720   | 0.015 | 1 : 2,500 | -    | r=4.75 | d=7.500 | -     | H=9.20             | -                  | -                  | -                  | 5.00               | -                  | 75.00              | 75.00              | CUT & COVER CONDUIT |

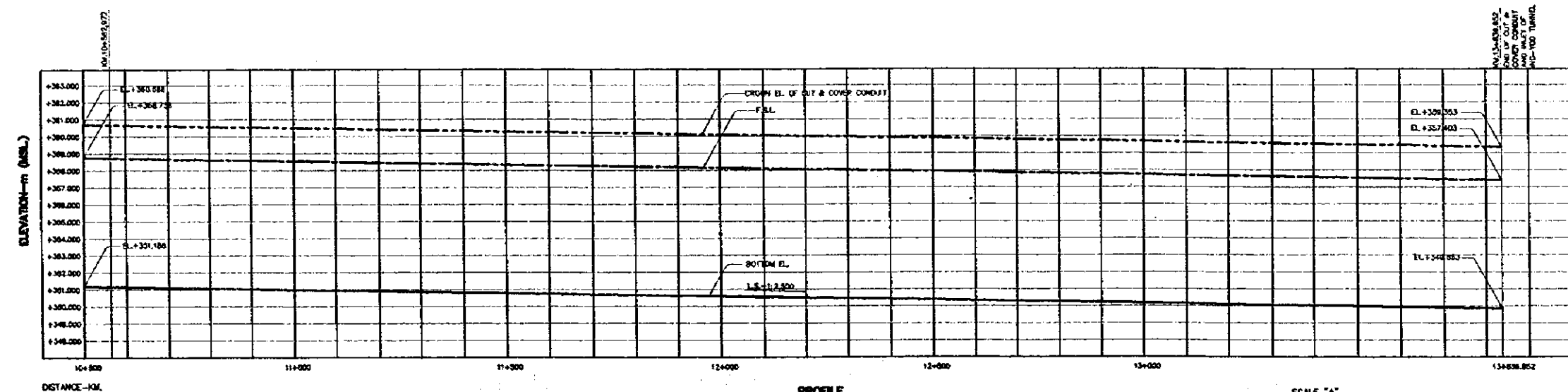
**THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT**  
 PLAN AND PROFILE OF ING-YOT DIVERSION CANAL (3/4)  
 KM.7+000 TO KM.10+500  
 Map & Drawing No.  
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)  
 SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.  
 Figure 11.2.4-3



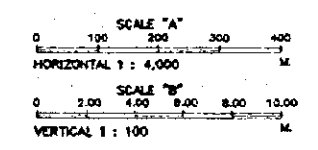
PLAN  
SCALE "A"

TABLE OF CURVE DATA

| NO. OF CURVE | STA. OF P.I. | DISTANCE P.I. TO P.C. | COORDINATES   |             | I (DEG MIN SEC) | T (m)  | R (m)  | L.C. (m)  | NO. OF BC. | NO. OF EC. | BEARING          |
|--------------|--------------|-----------------------|---------------|-------------|-----------------|--------|--------|-----------|------------|------------|------------------|
|              |              |                       | N             | E           |                 |        |        |           |            |            |                  |
| 12           | 10+331.888   | 427.867               | 2,173,262.108 | 832,362.371 | 84              | 19.214 | 300.00 | 194.803   | 194.798    | 10+316.875 | N. 68-45-18.8 E. |
| 13           | 10+844.342   | 284.471               | 2,173,436.920 | 832,780.924 | 06              | 26.07  | 300.00 | 1,721.186 | 199.773    | 10+744.117 | N. 75-25-20.3 E. |
| 14           | 10+828.580   | 182.881               | 2,173,508.502 | 833,056.171 | 17              | 05.127 | 75.00  | 475.670   | 146.773    | 10+853.508 | S. 68-36-27.0 E. |
| 15           | 11+090.014   | 428.804               | 2,173,468.021 | 833,216.806 | 37              | 53.283 | 75.00  | 218.177   | 154.482    | 11+015.514 | N. 65-26-57.5 E. |
| 16           | 11+513.110   | 337.031               | 2,173,742.030 | 833,871.430 | 10              | 08.493 | 100.00 | 1,124.501 | 198.478    | 11+413.110 | N. 48-17-08.2 E. |
| 17           | 11+848.818   | 468.137               | 2,173,978.108 | 833,810.874 | 28              | 30.462 | 100.00 | 378.642   | 195.056    | 11+748.818 | N. 78-47-07.5 E. |
| 18           | 12+340.311   | 1,045.108             | 2,174,106.802 | 834,286.878 | 23              | 15.283 | 100.00 | 668.811   | 187.248    | 12+240.311 | S. 61-04-33.4 E. |
| 19           | 13+380.888   | 494.831               | 2,173,682.728 | 836,321.138 | 40              | 22.214 | 100.00 | 271.893   | 181.866    | 13+280.888 | N. 57-41-08.8 E. |
| E            | 13+836.952   | -                     | 2,174,211.671 | 836,713.740 | -               | -      | -      | -         | -          | -          | -                |



PROFILE  
SCALE (HORIZONTAL "A"  
VERTICAL "B")



HYDRAULIC PROPERTIES AND DIMENSIONS OF DIVERSION CANAL

| KM. TO KM. | Q <sub>req</sub> (m <sup>3</sup> /s) | Q <sub>des</sub> (m <sup>3</sup> /s) | A (m <sup>2</sup> ) | R (m)  | V (m/s) | n     | L.S.  | S.S.      | B (m) | D (m)  | t (m)   | H <sub>c</sub> (m) | H <sub>g</sub> (m) | B <sub>L</sub> (m) | B <sub>R</sub> (m) | L <sub>L</sub> (m) | T <sub>R</sub> (m) | R <sub>L</sub> (m) | R <sub>R</sub> (m) | REMARK              |
|------------|--------------------------------------|--------------------------------------|---------------------|--------|---------|-------|-------|-----------|-------|--------|---------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| 10+500.000 | 13+836.952                           | 175.000                              | 175.983             | 84.373 | 2.813   | 2.720 | 0.015 | 1 : 2,500 | -     | r=4.75 | 6+7.550 | -                  | N=9.50             | -                  | -                  | 8.00               | -                  | 75.00              | 75.00              | OUT & COVER CONDUIT |

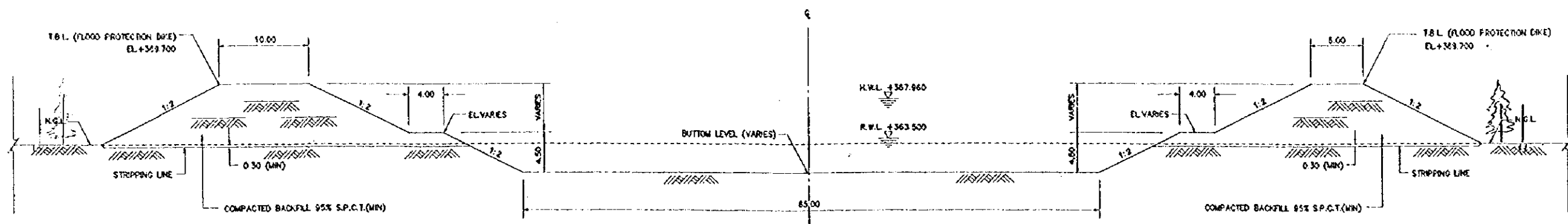
**THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT**  
 PLAN AND PROFILE OF ING-YOT DIVERSION CANAL (4/4)  
 KM.10+500 TO KM.13+836.952

Map & Draw-  
ing No.

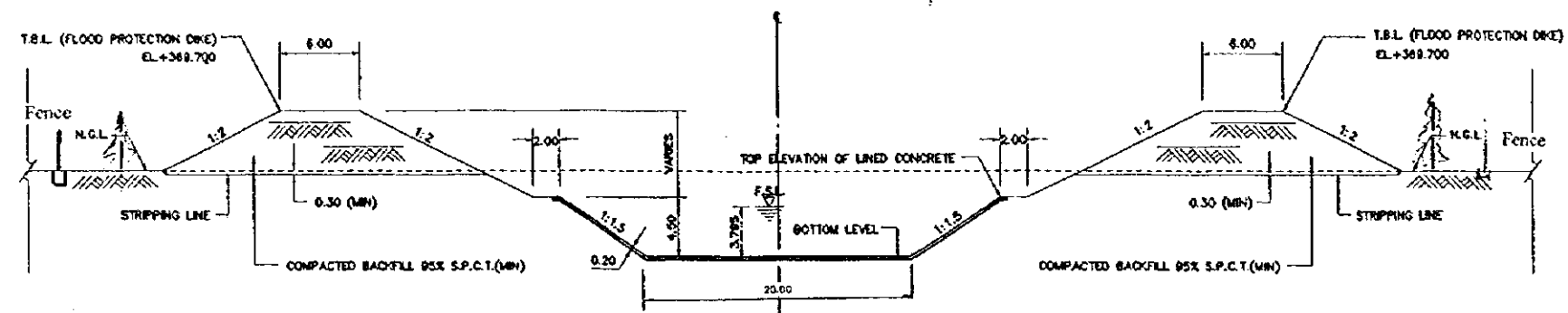
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)  
 SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.

Figure  
11.2.4.4

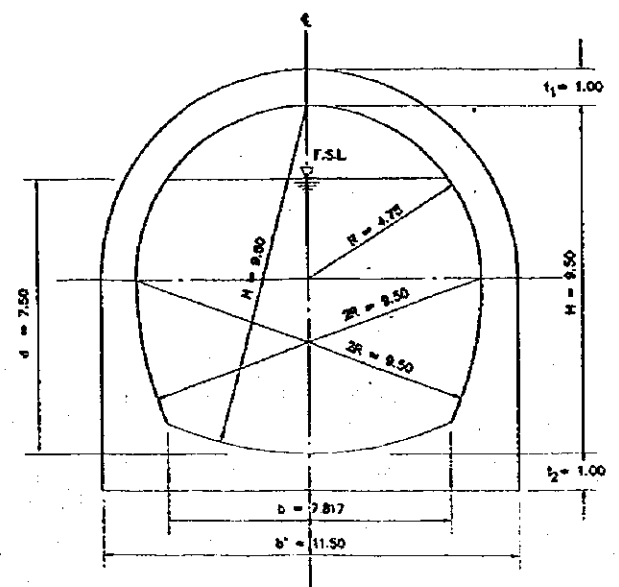




APPROACH CHANNEL

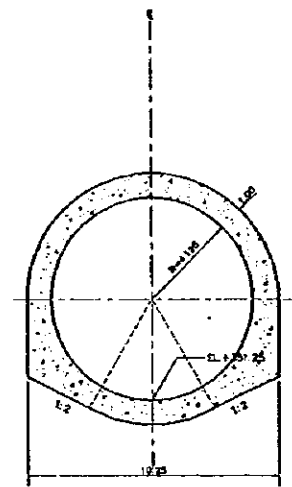
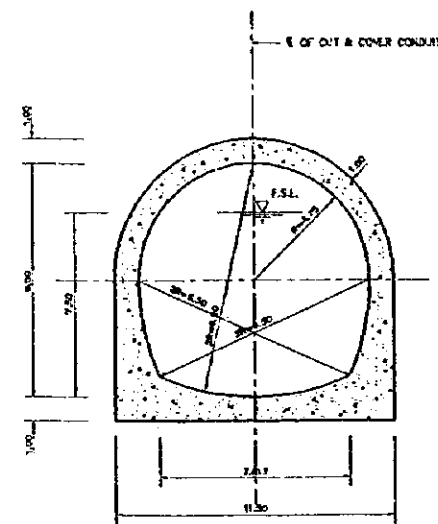
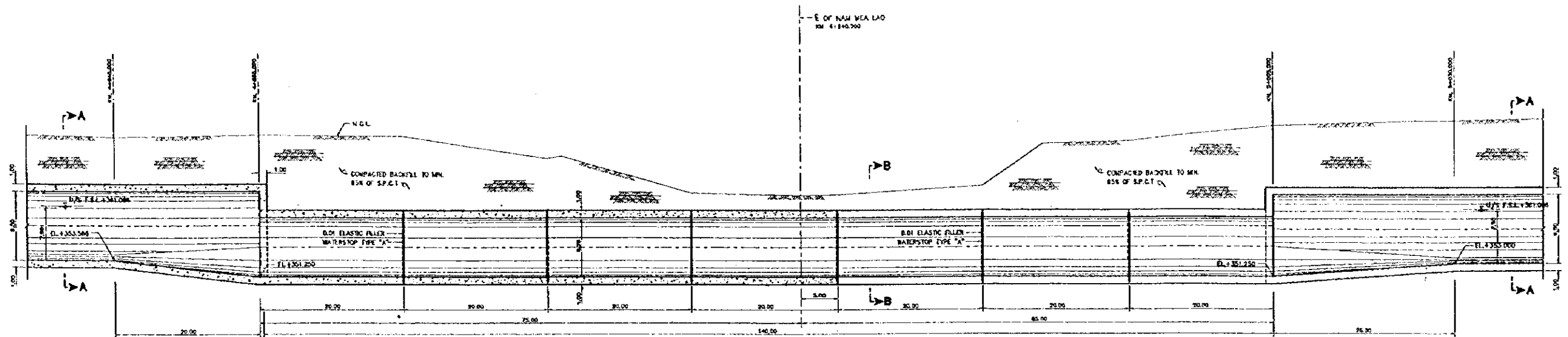


CONCRETE LINED DIVERSION CANAL

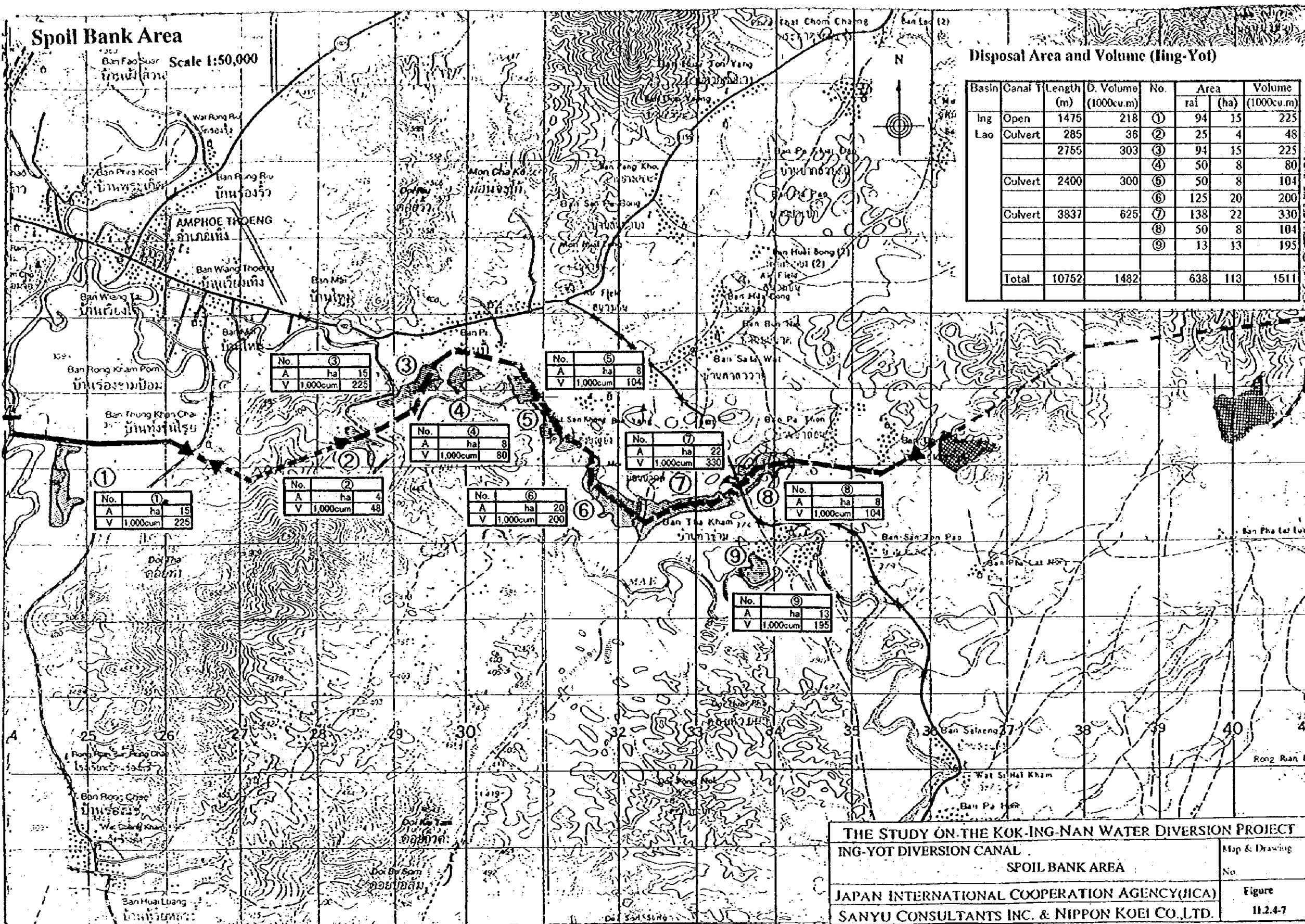


CUT & COVER CONDUIT (STANDARD HORSESHOE, 2R)

|  |                         |
|--|-------------------------|
| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |                         |
| ING-YOT DIVERSION CANAL                              | Map & Draw -<br>Ing No. |
| TYPICAL SECTION OF OPEN CANAL AND CULVERT            | Figure<br>11.2.4-5      |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        |                         |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.       |                         |



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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |                        |
| TYPICAL SECTION OF SIPHON<br>ING-YOT DIVERSION CANAL | Map & Draw-<br>ing No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        | Figure                 |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.       | 11.2.4-6               |

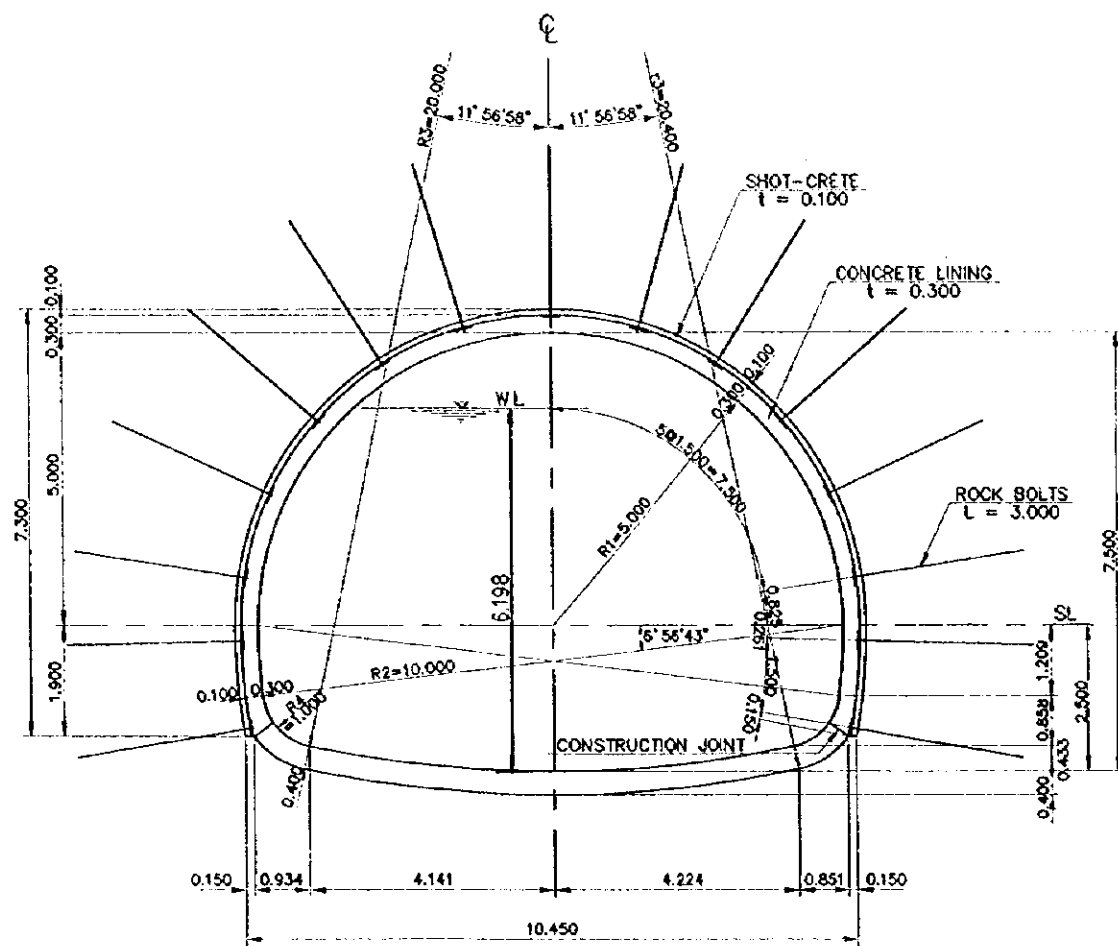


Disposal Area and Volume (Ing-Yot)

| Basin        | Canal T | Length (m)   | D. Volume (1000cu.m) | No. | Area       |            | Volume (1000cu.m) |
|--------------|---------|--------------|----------------------|-----|------------|------------|-------------------|
|              |         |              |                      |     | rai        | (ha)       |                   |
| Ing          | Open    | 1475         | 218                  | ①   | 94         | 15         | 225               |
|              | Culvert | 285          | 36                   | ②   | 25         | 4          | 48                |
| Lao          | Open    | 2755         | 303                  | ③   | 94         | 15         | 225               |
|              |         |              |                      | ④   | 50         | 8          | 80                |
|              |         |              |                      | ⑤   | 50         | 8          | 104               |
|              | Culvert | 2400         | 300                  | ⑥   | 125        | 20         | 200               |
|              |         |              |                      | ⑦   | 138        | 22         | 330               |
|              | Culvert | 3837         | 625                  | ⑧   | 50         | 8          | 104               |
|              |         |              |                      | ⑨   | 13         | 13         | 195               |
| <b>Total</b> |         | <b>10752</b> | <b>1482</b>          |     | <b>638</b> | <b>113</b> | <b>1511</b>       |

THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT  
 ING-YOT DIVERSION CANAL  
 SPOIL BANK AREA  
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)  
 SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.

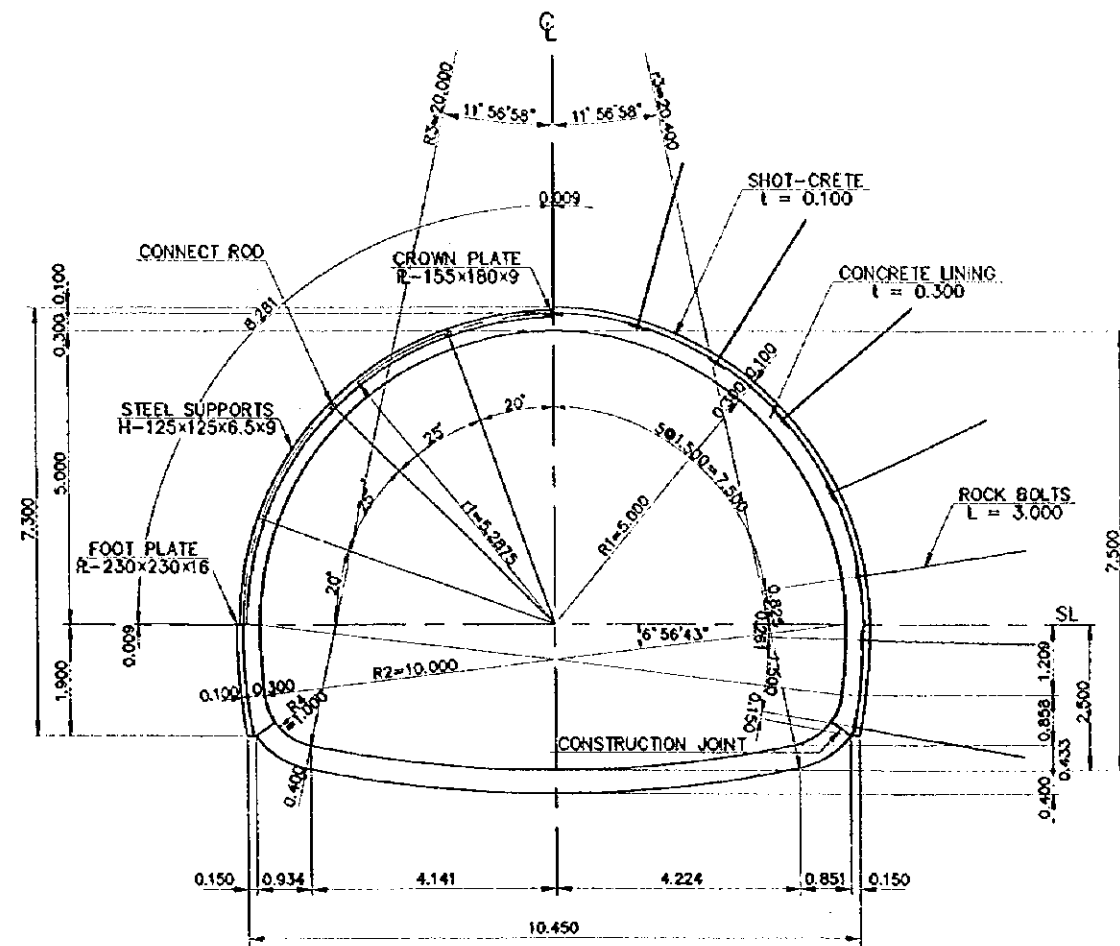
Map & Drawing No. Figure 11.2.47



TYPE-C1

QUANTITY PER METER AND/OR CYCLE OF TYPE C1

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 77.20 |
| SHOTCRETE             | m <sup>2</sup> /m. | 20.50 |
| ROCK BOLT             | Nos./m.            | 15    |
| STEEL ARCH SUPPORTING | ton/cycle          | -     |
| CONCRETE LINING       | m <sup>3</sup> /m. | 12.30 |
| REINFORCEMENT         | ton/m.             | -     |



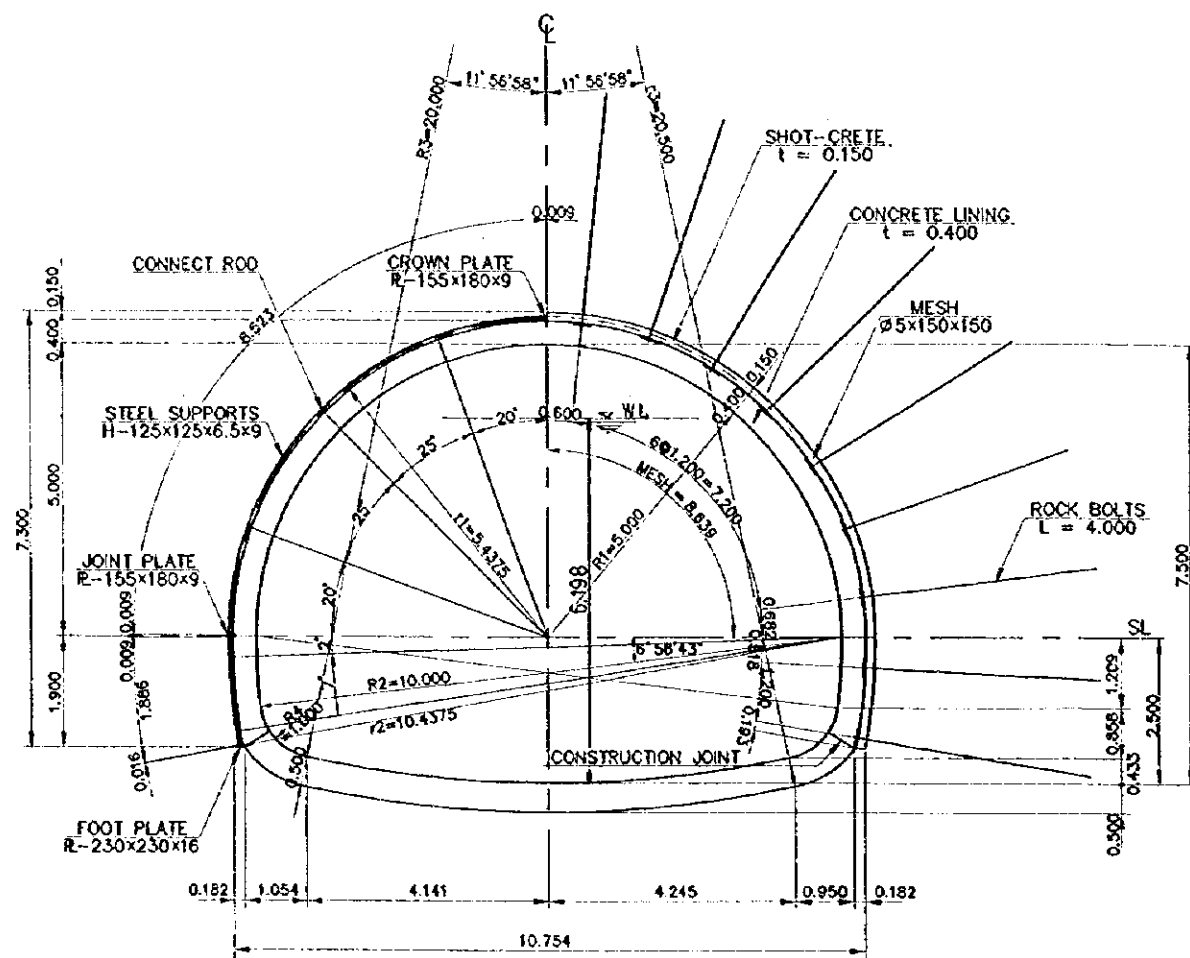
TYPE-C2

QUANTITY PER METER AND/OR CYCLE OF TYPE C2

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 77.20 |
| SHOTCRETE             | m <sup>2</sup> /m. | 20.50 |
| ROCK BOLT             | Nos./m.            | 15    |
| STEEL ARCH SUPPORTING | ton/cycle          | 0.39  |
| CONCRETE LINING       | m <sup>3</sup> /m. | 12.30 |
| REINFORCEMENT         | ton/m.             | -     |



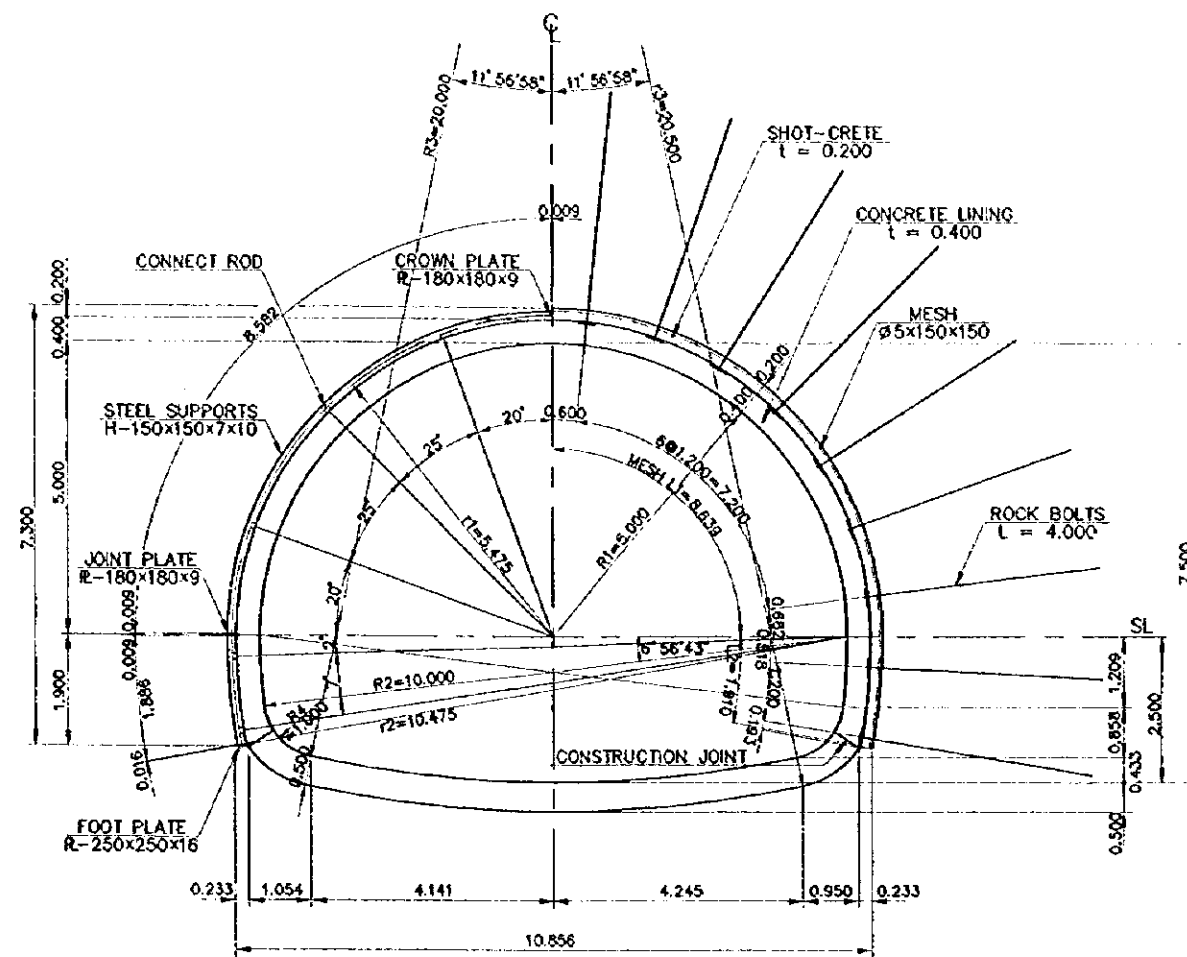
|  |                      |
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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |                      |
| TYPICAL SECTION OF KOK-ING TUNNEL<br>TYPE C1 & C2    | Map & Drawing<br>No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        | Figure               |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO.,LTD.        | 11.2.5.(3)-1         |



TYPE-D1

QUANTITY PER METER AND/OR CYCLE OF TYPE D1

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 81.50 |
| SHOTCRETE             | m <sup>2</sup> /m. | 20.80 |
| ROCK BOLT             | Nos./m.            | 0.49  |
| STEEL ARCH SUPPORTING | ton/cycle          | 0.54  |
| CONCRETE LINING       | m <sup>3</sup> /m. | 15.50 |
| REINFORCEMENT         | ton/m.             | -     |



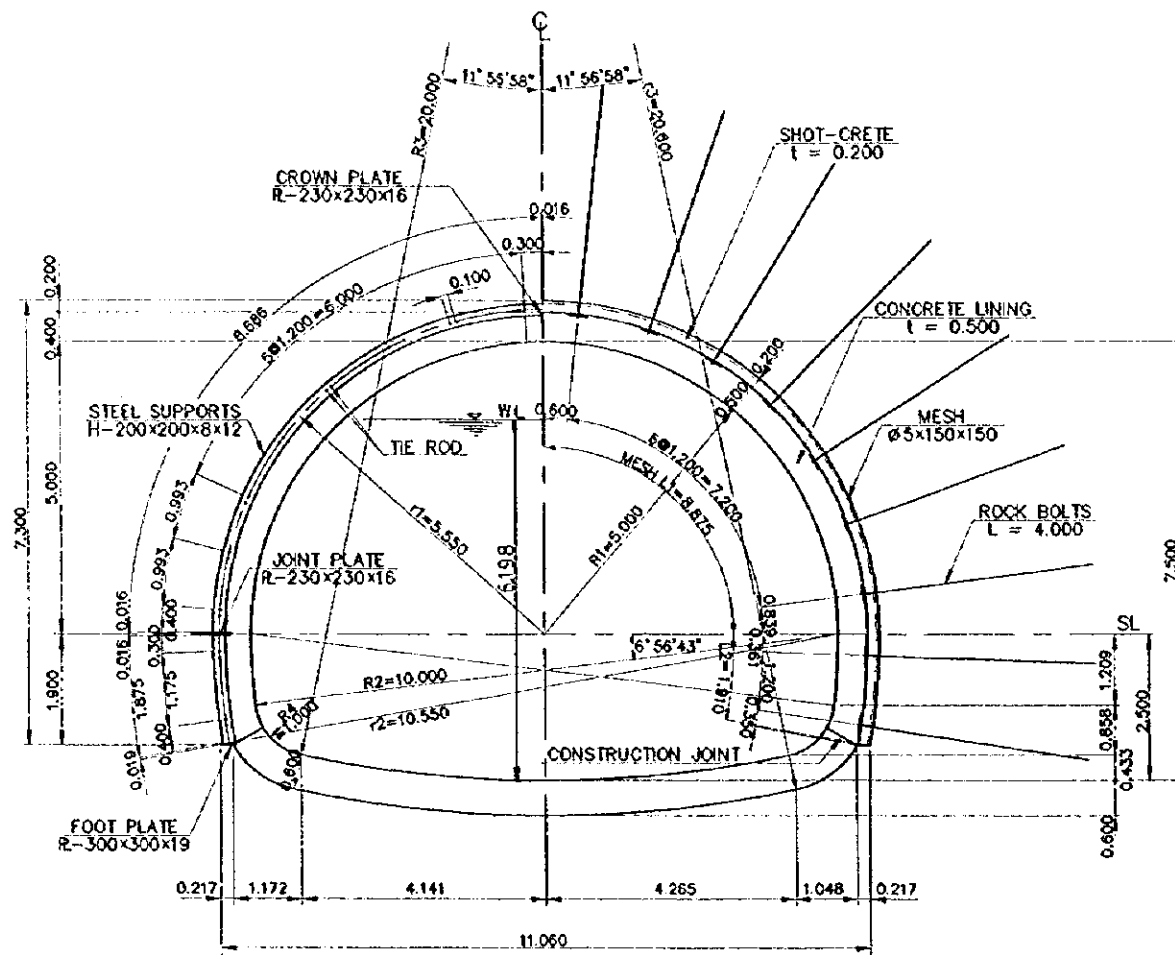
TYPE-D2

QUANTITY PER METER AND/OR CYCLE OF TYPE D2

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 82.60 |
| SHOTCRETE             | m <sup>2</sup> /m. | 20.80 |
| ROCK BOLT             | Nos./m.            | 18    |
| STEEL ARCH SUPPORTING | ton/cycle          | 0.65  |
| CONCRETE LINING       | m <sup>3</sup> /m. | 15.50 |
| REINFORCEMENT         | ton/m.             | 0.70  |



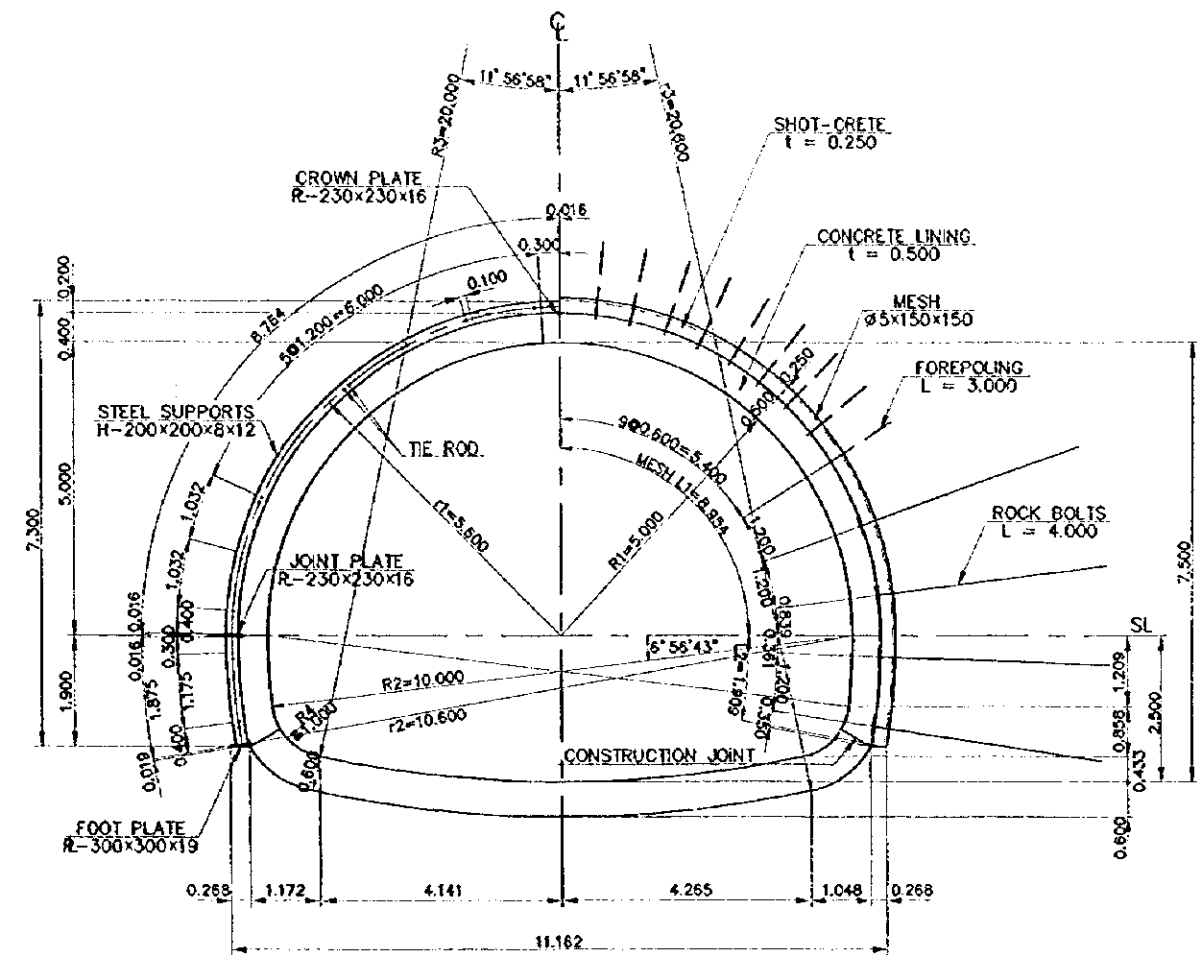
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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |  |                      |
| TYPICAL SECTION OF KOK-ING TUNNEL<br>TYPE D1 & D2    |  | Map & Drawing<br>No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        |  | Figure               |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO.,LTD.        |  | 11.2.5.(3)-2         |



TYPE-E1

QUANTITY PER METER AND/OR CYCLE OF TYPE E1

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 85.90 |
| SHOTCRETE             | m <sup>2</sup> /m. | 21.10 |
| ROCK BOLT             | Nos./m.            | 18    |
| STEEL ARCH SUPPORTING | ton/cycle          | 1.05  |
| CONCRETE LINING       | m <sup>3</sup> /m. | 18.70 |
| REINFORCEMENT         | ton/m.             | 0.84  |



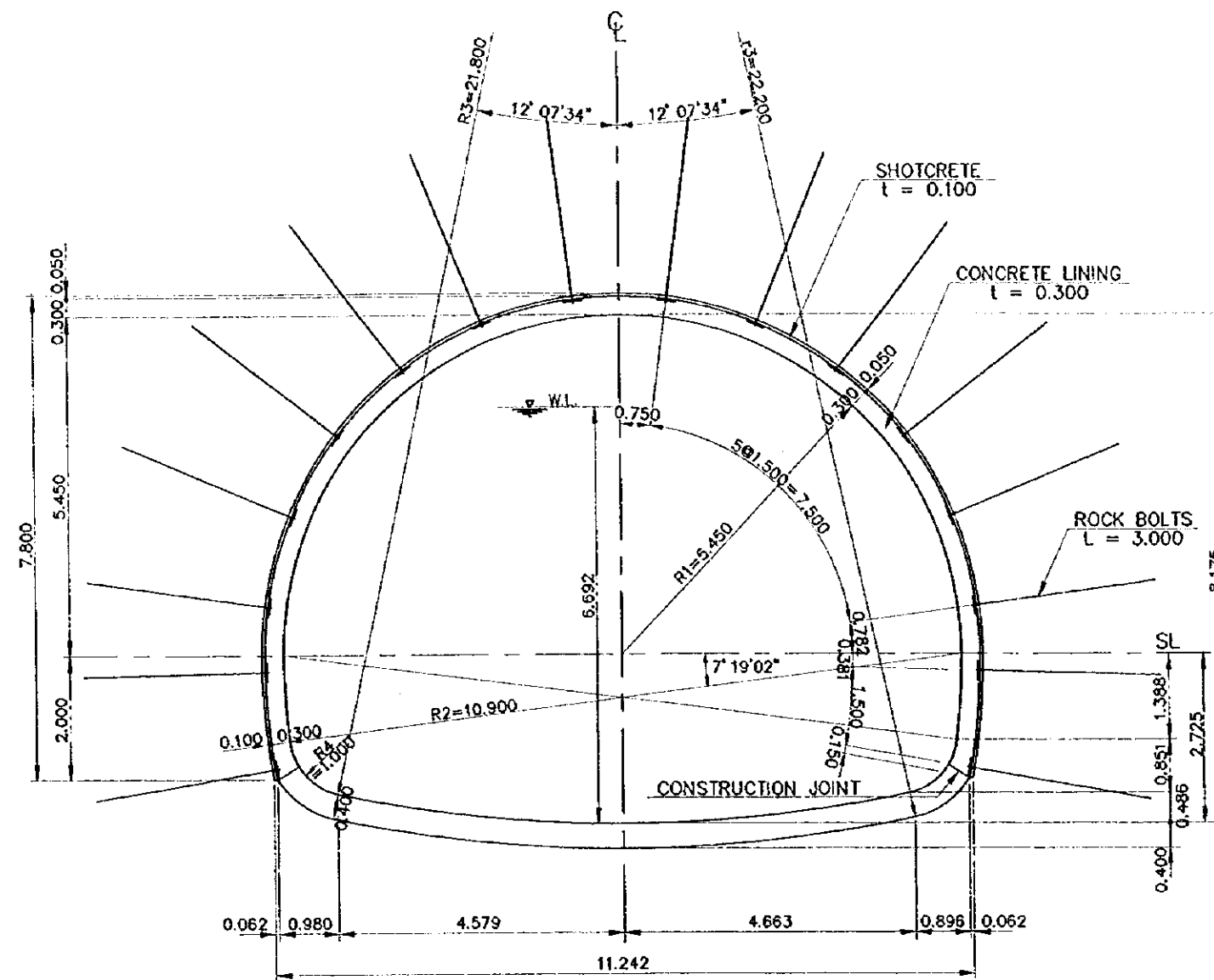
TYPE-E2

QUANTITY PER METER AND/OR CYCLE OF TYPE E2

| ITEM                   | UNIT               | Q'TY  |
|------------------------|--------------------|-------|
| TUNNEL EXCAVATION      | m <sup>3</sup> /m. | 87.00 |
| SHOTCRETE              | m <sup>2</sup> /m. | 21.10 |
| ROCK BOLT              | Nos./m.            | 8     |
| ROCK BOLT (FOREPOLING) | Nos./m.            | 19.5  |
| STEEL ARCH SUPPORTING  | ton/cycle          | 1.06  |
| CONCRETE LINING        | m <sup>3</sup> /m. | 18.70 |
| REINFORCEMENT          | ton/m.             | 1.07  |



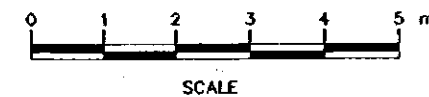
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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |                      |
| TYPICAL SECTION OF KOK-ING TUNNEL<br>TYPE E1 & E2    | Map & Drawing<br>No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        | Figure               |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO.,LTD.        | 11.2.5.(3)-3         |



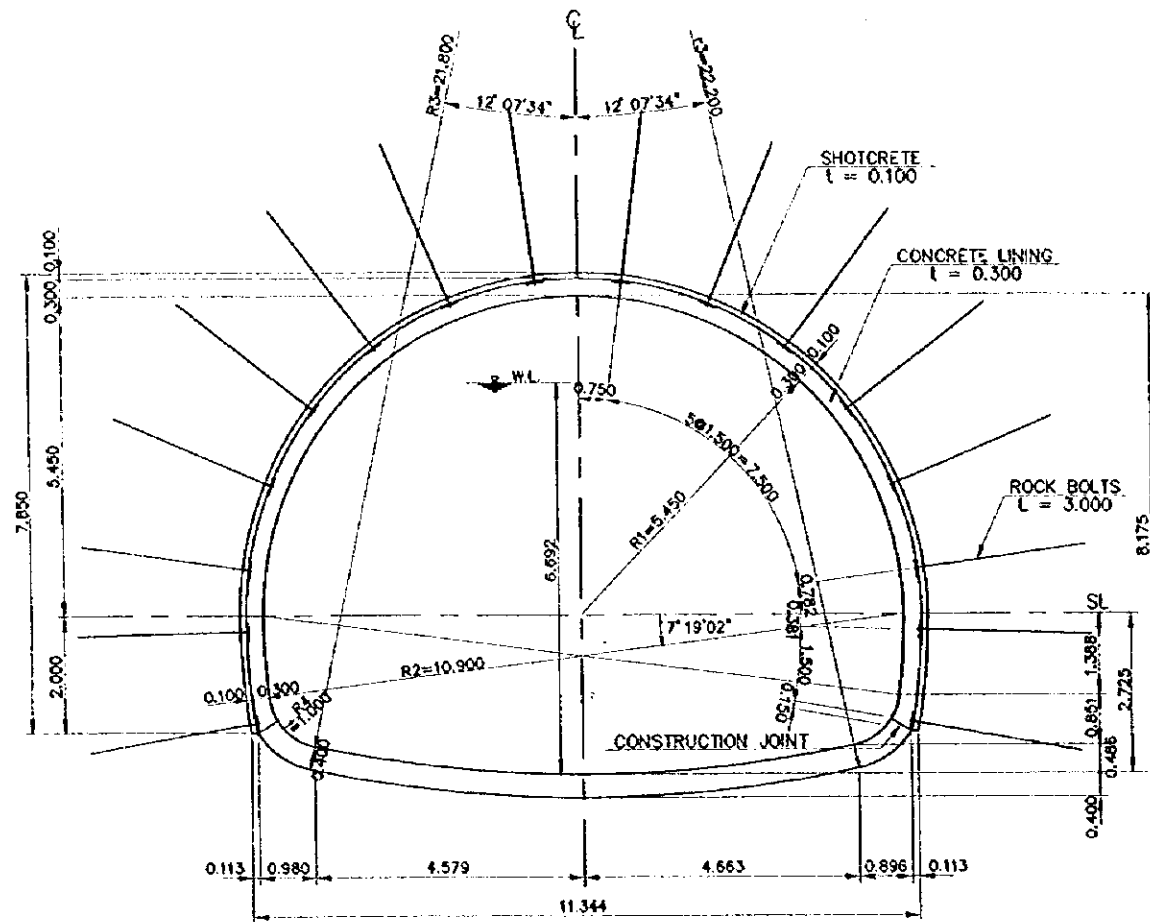
TYPE-B

QUANTITY PER METER AND/OR CYCLE OF TYPE B

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 89.00 |
| SHOTCRETE             | m <sup>2</sup> /m. | 22.10 |
| ROCK BOLT             | Nos./m.            | 12    |
| STEEL ARCH SUPPORTING | ton/cycle          | -     |
| CONCRETE LINING       | m <sup>3</sup> /m. | 13.60 |
| REINFORCEMENT         | ton/m.             | -     |



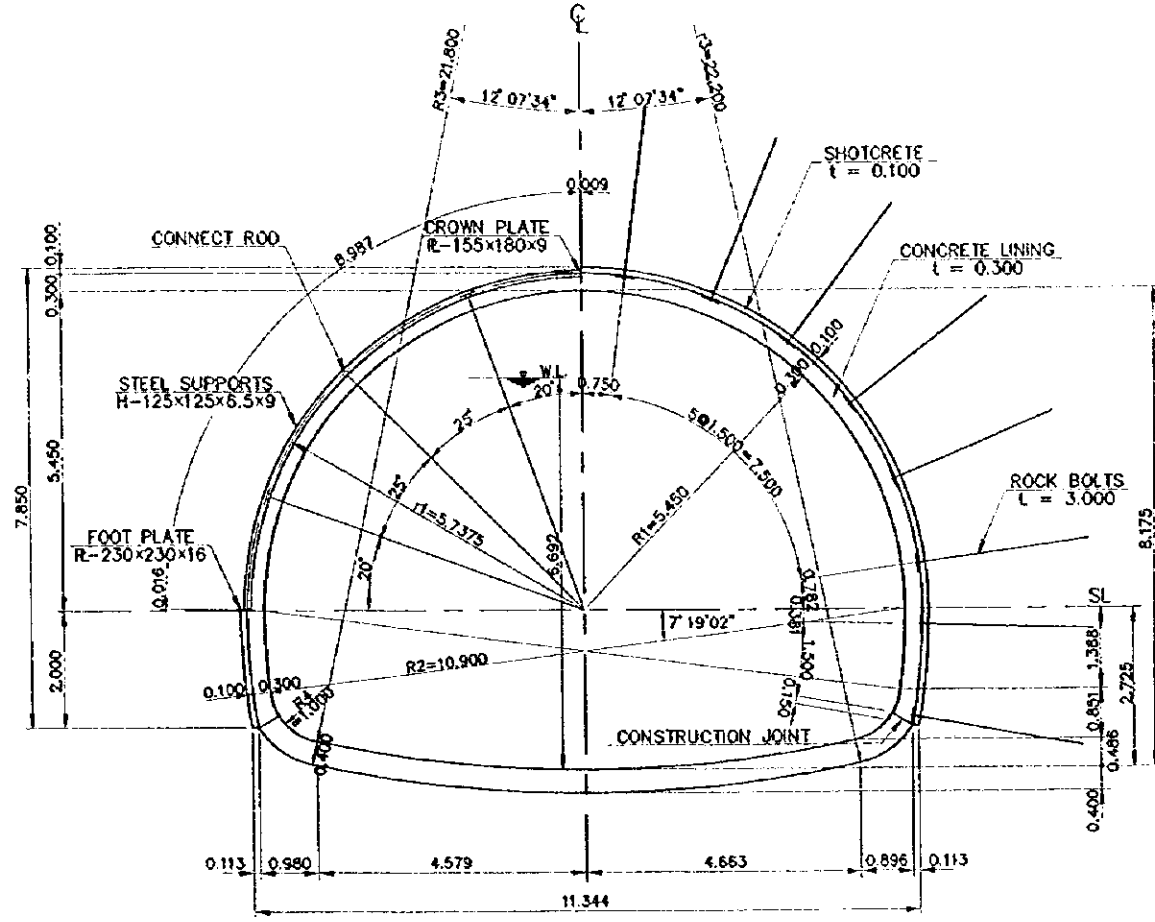
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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |                      |
| TYPICAL SECTION OF ING-YOT TUNNEL<br>TYPE B          | Map & Drawing<br>No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        | Figure               |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO.,LTD.        | 11.2.5.(3)-4         |



TYPE-C1

QUANTITY PER METER AND/OR CYCLE OF TYPE C1

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 90.10 |
| SHOTCRETE             | m <sup>2</sup> /m. | 22.10 |
| ROCK BOLT             | Nos./m.            | 16    |
| STEEL ARCH SUPPORTING | ton/cycle          | -     |
| CONCRETE LINING       | m <sup>3</sup> /m. | 13.60 |
| REINFORCEMENT         | ton/m.             | -     |



TYPE-C2

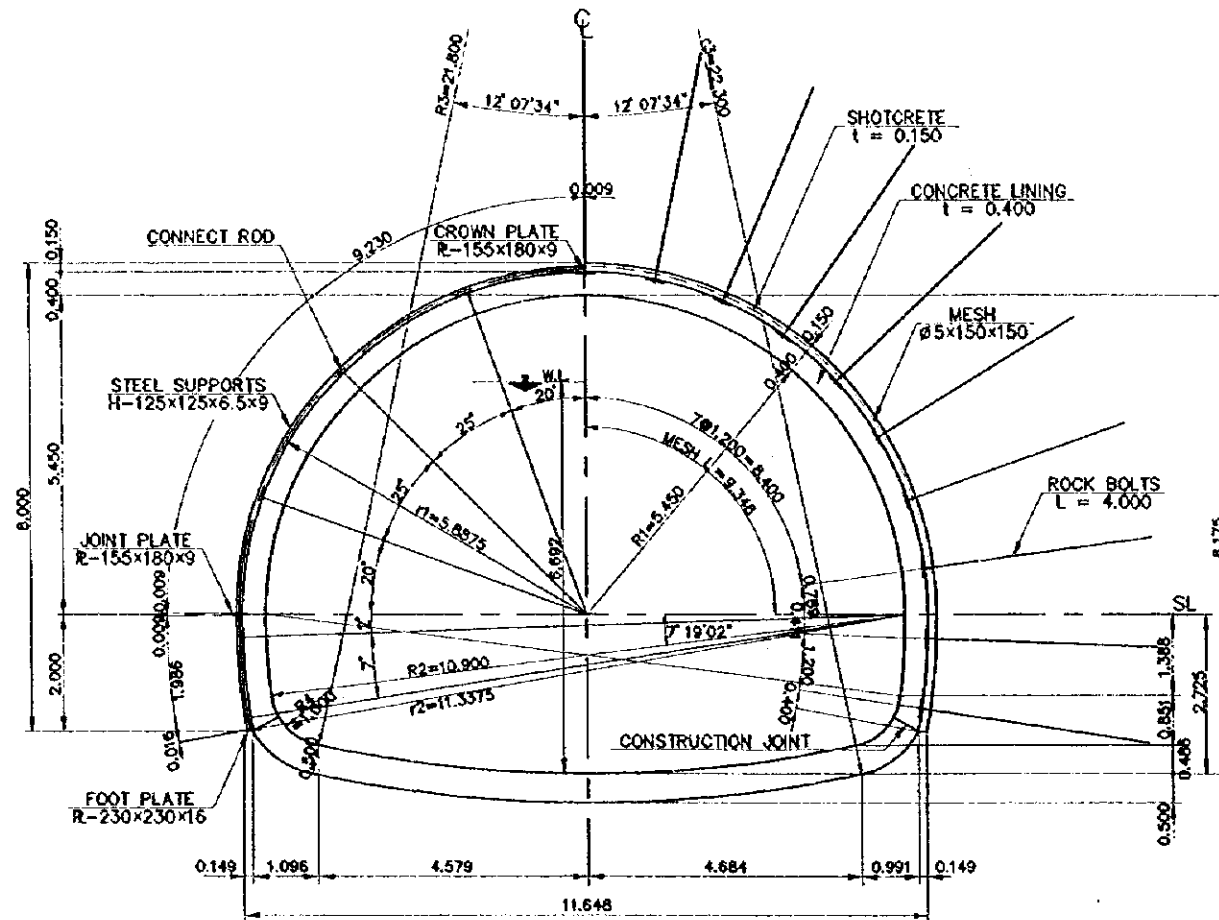
QUANTITY PER METER AND/OR CYCLE OF TYPE C2

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 90.10 |
| SHOTCRETE             | m <sup>2</sup> /m. | 22.10 |
| ROCK BOLT             | Nos./m.            | 16    |
| STEEL ARCH SUPPORTING | ton/cycle          | 0.43  |
| CONCRETE LINING       | m <sup>3</sup> /m. | 13.60 |
| REINFORCEMENT         | ton/m.             | -     |



|  |                        |
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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT   |                        |
| TYPICAL SECTION OF ING-YOT TUNNEL<br>TYPE C1 & C2  | Map & Drawing<br>No.   |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)<br>SANYU CONSULTANTS INC. & NIPPON KOEI CO.,LTD. | Figure<br>11.2.5.(3)-5 |

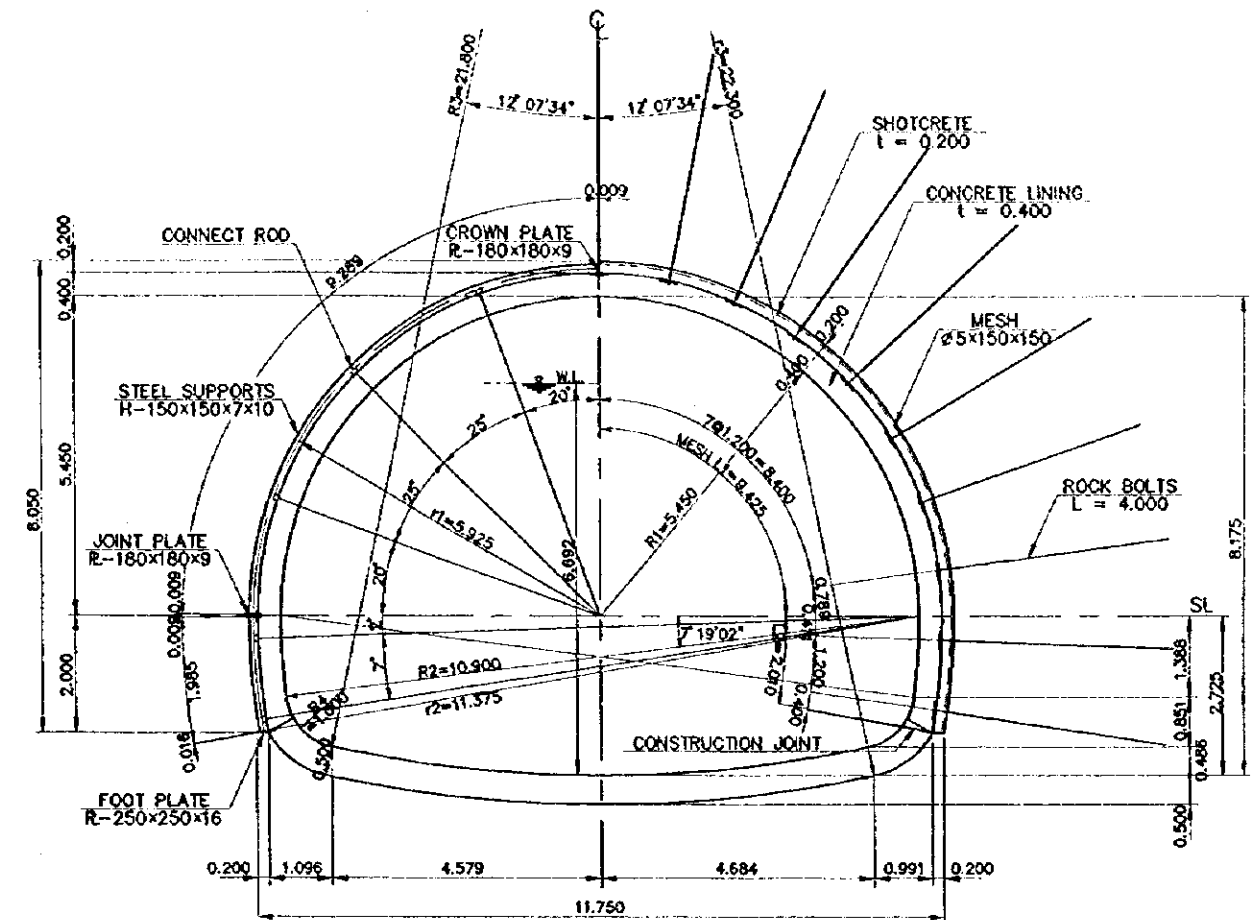




TYPE-D1

QUANTITY PER METER AND/OR CYCLE OF TYPE D1

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 94.80 |
| SHOTCRETE             | m <sup>2</sup> /m. | 22.40 |
| ROCK BOLT             | Nos./m.            | 19    |
| STEEL ARCH SUPPORTING | ton/cycle          | 0.53  |
| CONCRETE LINING       | m <sup>3</sup> /m. | 17.00 |
| REINFORCEMENT         | ton/m.             | -     |



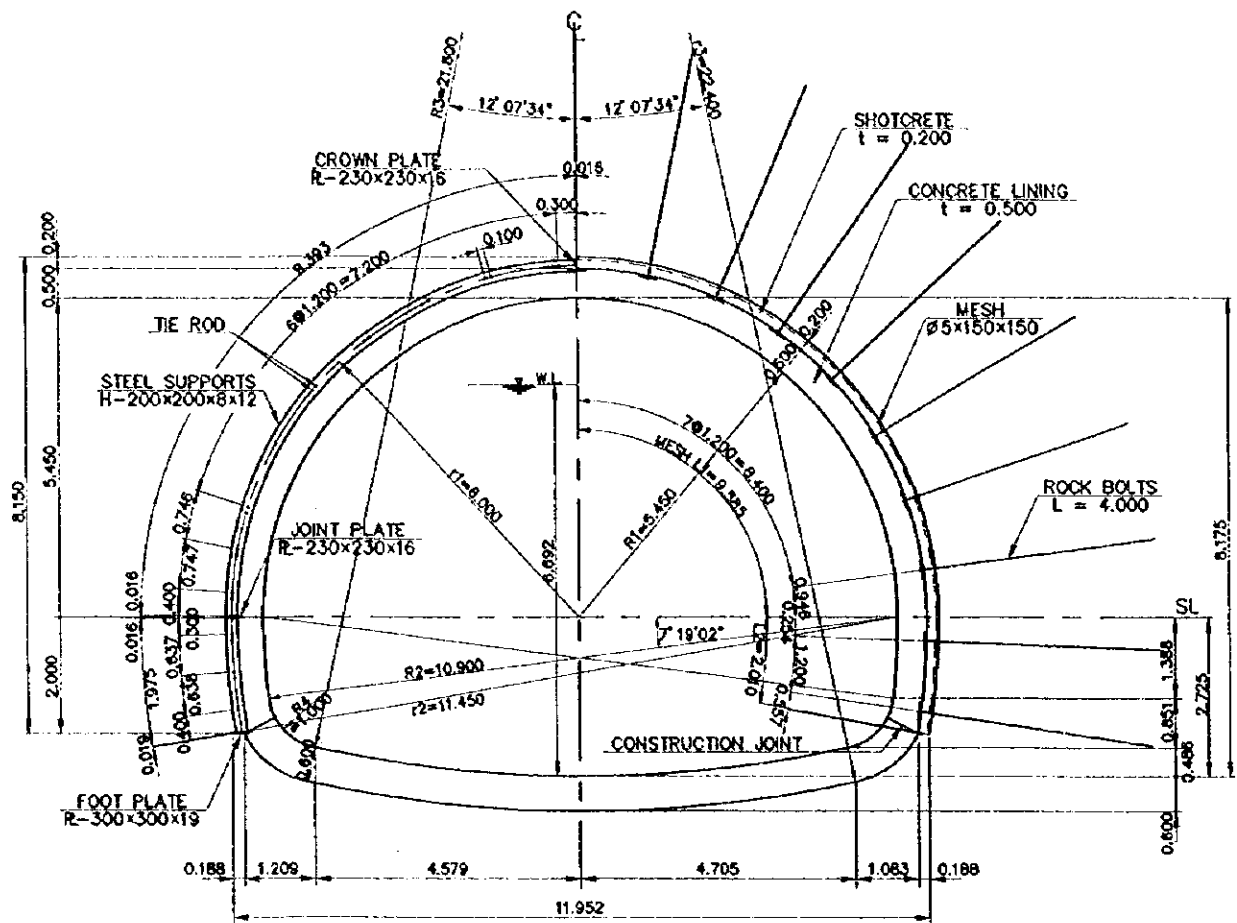
TYPE-D2

QUANTITY PER METER AND/OR CYCLE OF TYPE D2

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 96.00 |
| SHOTCRETE             | m <sup>2</sup> /m. | 22.40 |
| ROCK BOLT             | Nos./m.            | 19    |
| STEEL ARCH SUPPORTING | ton/cycle          | 0.71  |
| CONCRETE LINING       | m <sup>3</sup> /m. | 17.00 |
| REINFORCEMENT         | ton/m.             | 0.77  |



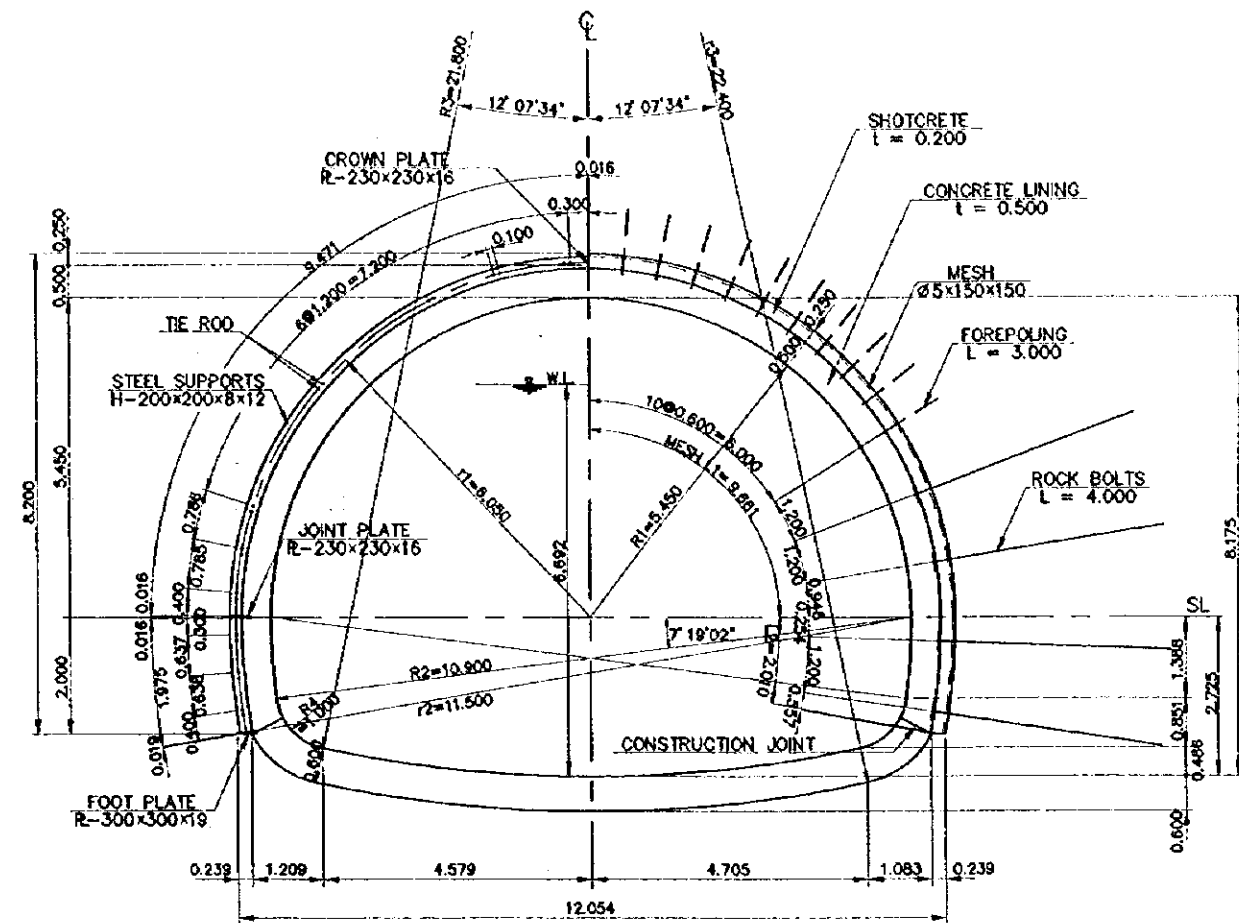
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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |                      |
| TYPICAL SECTION OF ING-YOT TUNNEL<br>TYPE D1 & D2    | Map & Drawing<br>No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        | Figure               |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO.,LTD.        | 11.2.5.(3)-6         |



TYPE-E1

QUANTITY PER METER AND/OR CYCLE OF TYPE E1

| ITEM                  | UNIT               | Q'TY  |
|-----------------------|--------------------|-------|
| TUNNEL EXCAVATION     | m <sup>3</sup> /m. | 99.50 |
| SHOTCRETE             | m <sup>2</sup> /m. | 22.70 |
| ROCK BOLT             | Nos./m.            | 19    |
| STEEL ARCH SUPPORTING | ton/cycle          | 1.13  |
| CONCRETE LINING       | m <sup>3</sup> /m. | 20.50 |
| REINFORCEMENT         | ton/m.             | 0.92  |



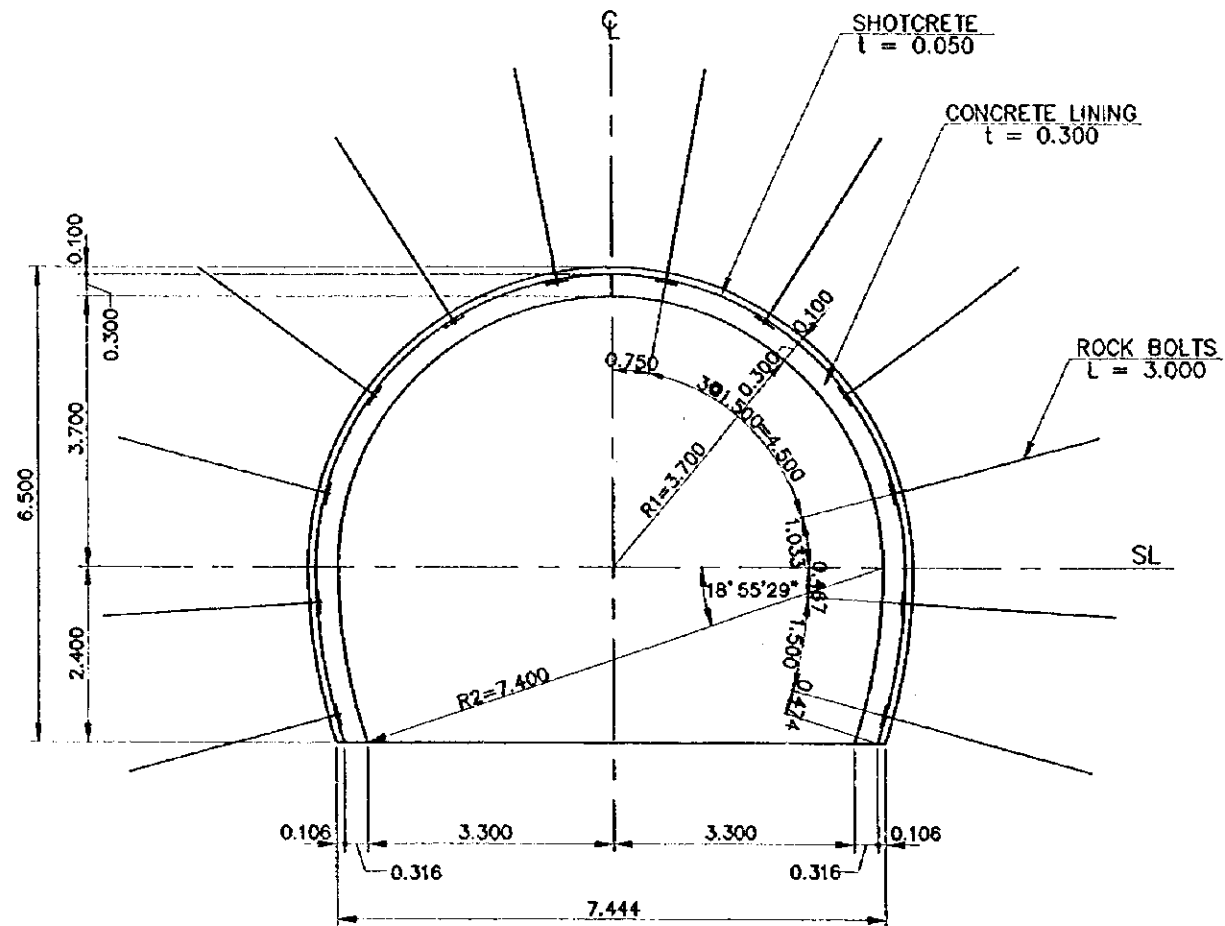
TYPE-E2

QUANTITY PER METER AND/OR CYCLE OF TYPE E2

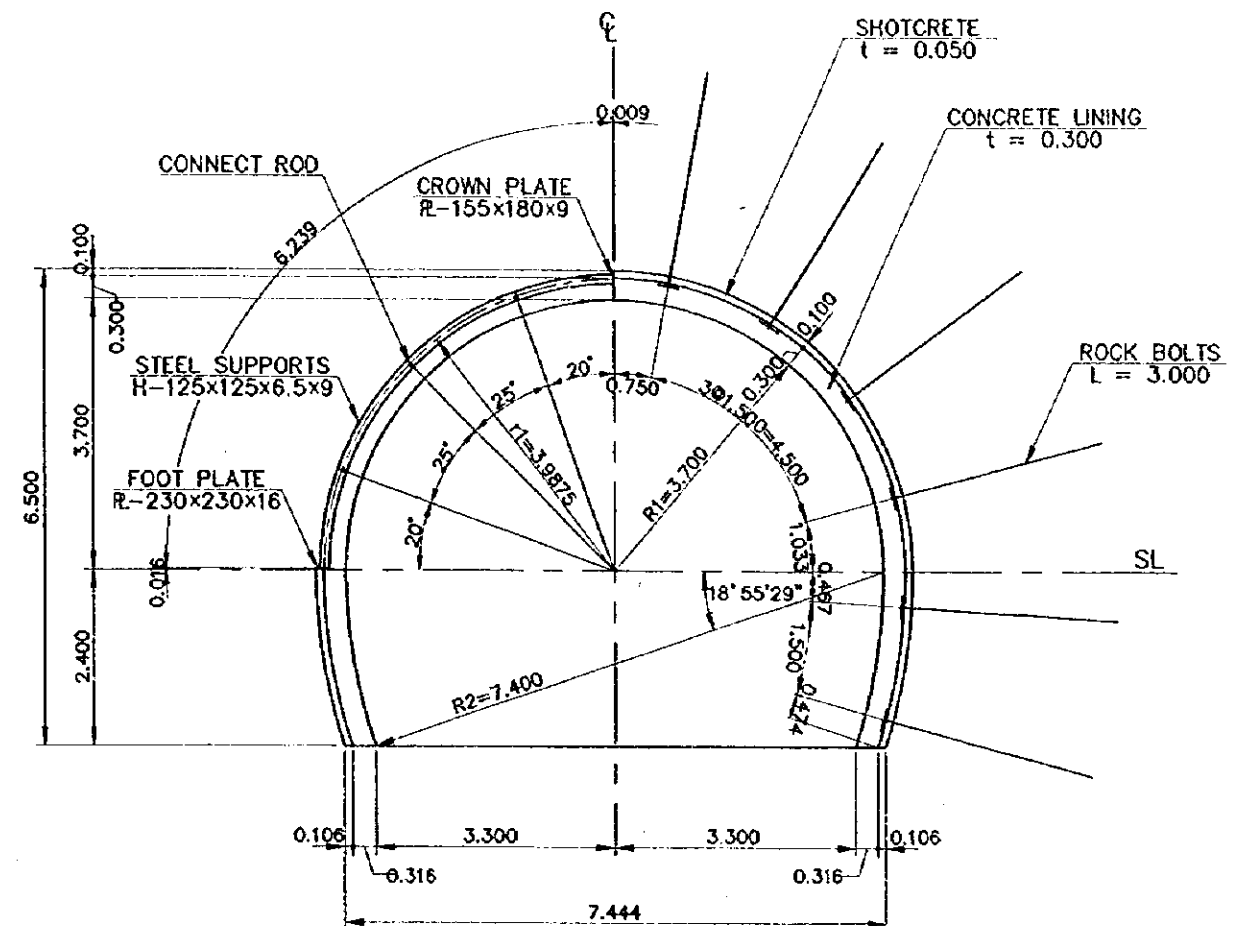
| ITEM                   | UNIT               | Q'TY   |
|------------------------|--------------------|--------|
| TUNNEL EXCAVATION      | m <sup>3</sup> /m. | 100.70 |
| SHOTCRETE              | m <sup>2</sup> /m. | 22.70  |
| ROCK BOLT              | Nos./m.            | 8      |
| ROCK BOLT (FOREPOLING) | Nos./m.            | 22     |
| STEEL ARCH SUPPORTING  | ton/cycle          | 1.14   |
| CONCRETE LINING        | m <sup>3</sup> /m. | 20.50  |
| REINFORCEMENT          | ton/m.             | 1.17   |



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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |  |                      |
| TYPICAL SECTION OF ING-YOT TUNNEL<br>TYPE E1 & E2    |  | Map & Drawing<br>No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        |  | Figure               |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO.,LTD.        |  | 11.2.5.(3)-7         |



TYPE-C1

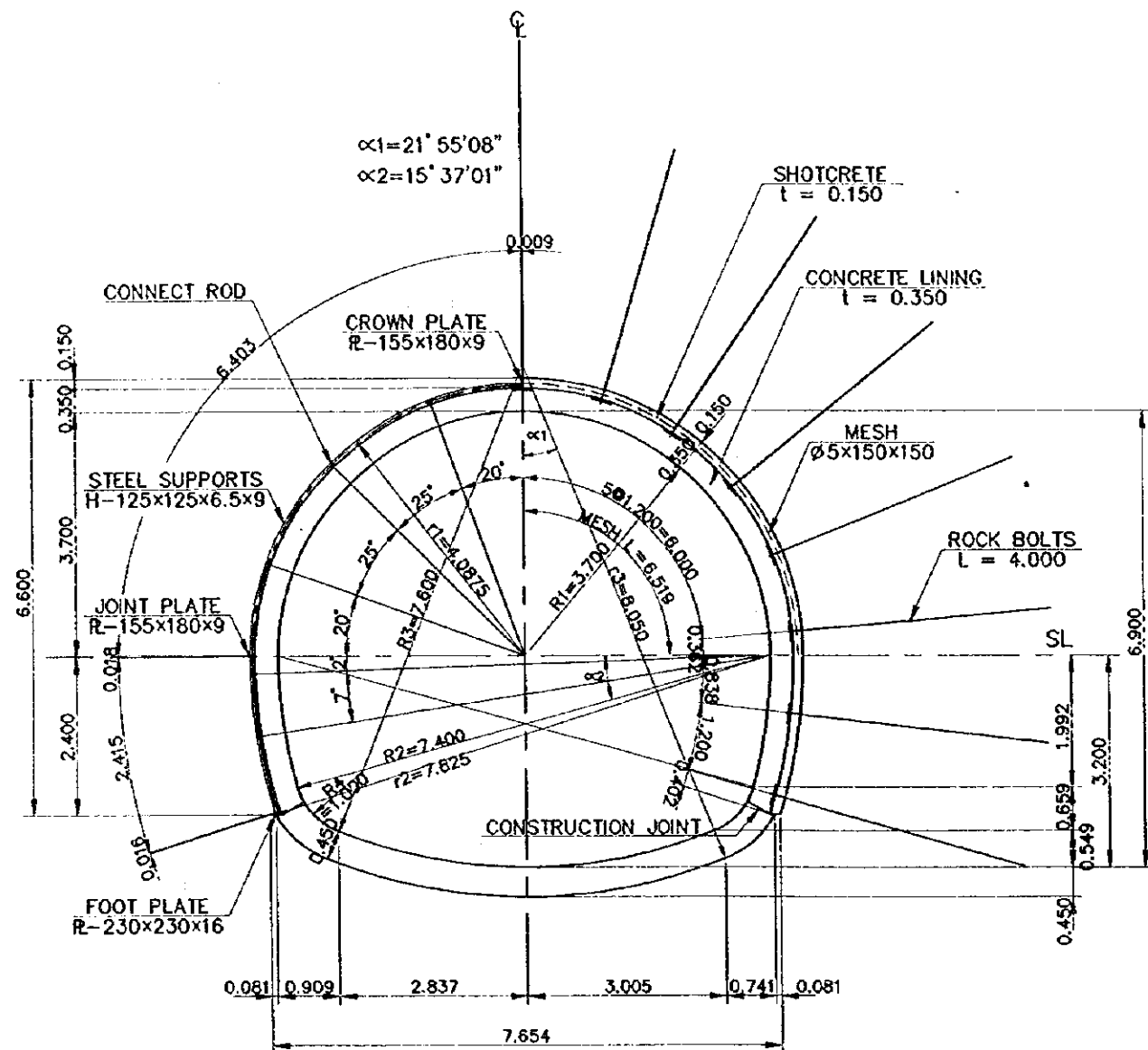


TYPE-C2

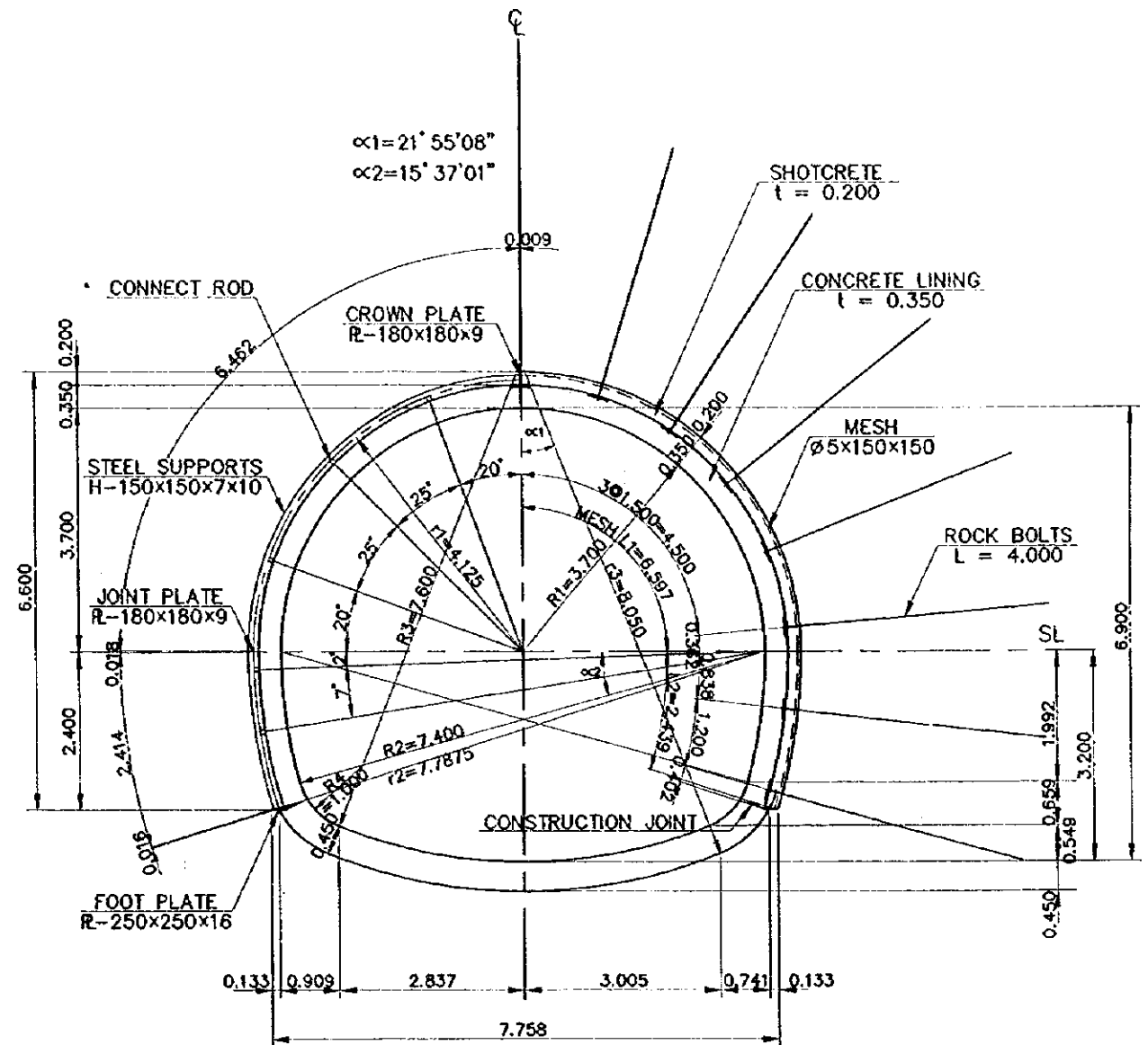


SCALE

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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |                     |
| TYPICAL SECTION OF ADIT<br>TYPE C1 & C2              |                     |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        | Map & Drawing No.   |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO.,LTD.        | Figure 11.2.5.(3)-8 |



TYPE-D1

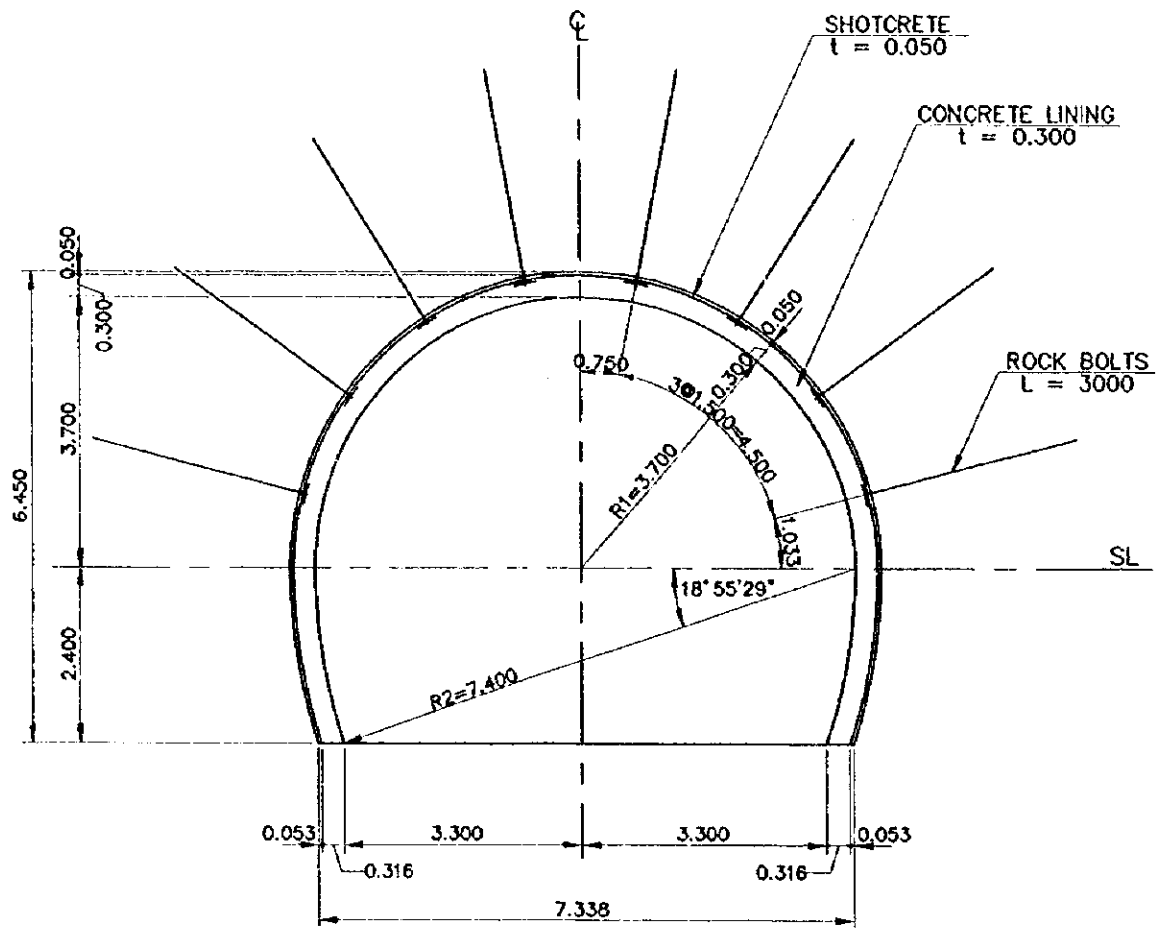


TYPE-D2

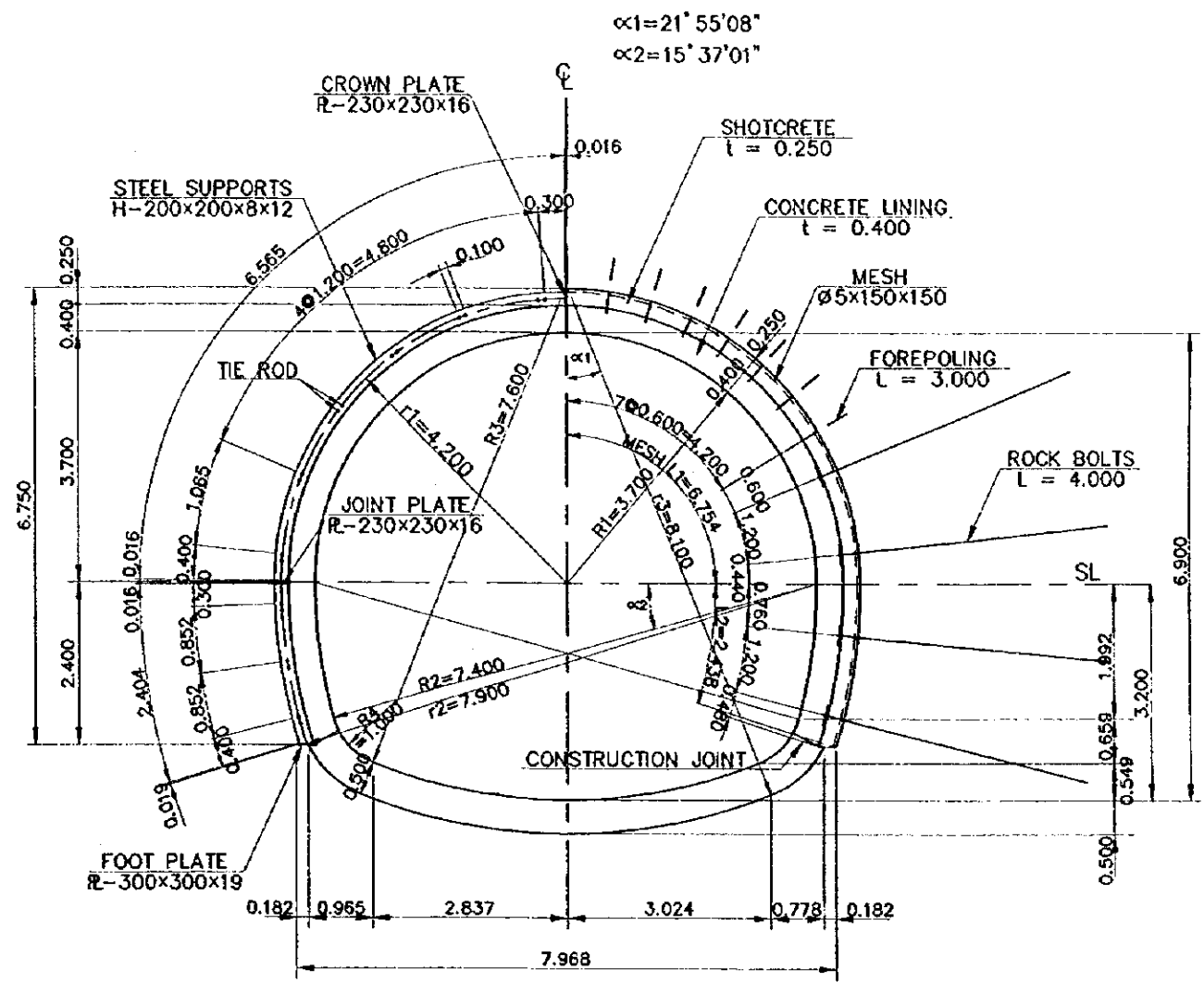


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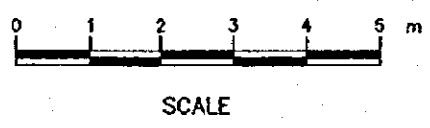
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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |                     |
| TYPICAL SECTION OF ADIT<br>TYPE D1 & D2              |                     |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        | Map & Drawing No.   |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO.,LTD.        | Figure 11.2.5.(3)-9 |



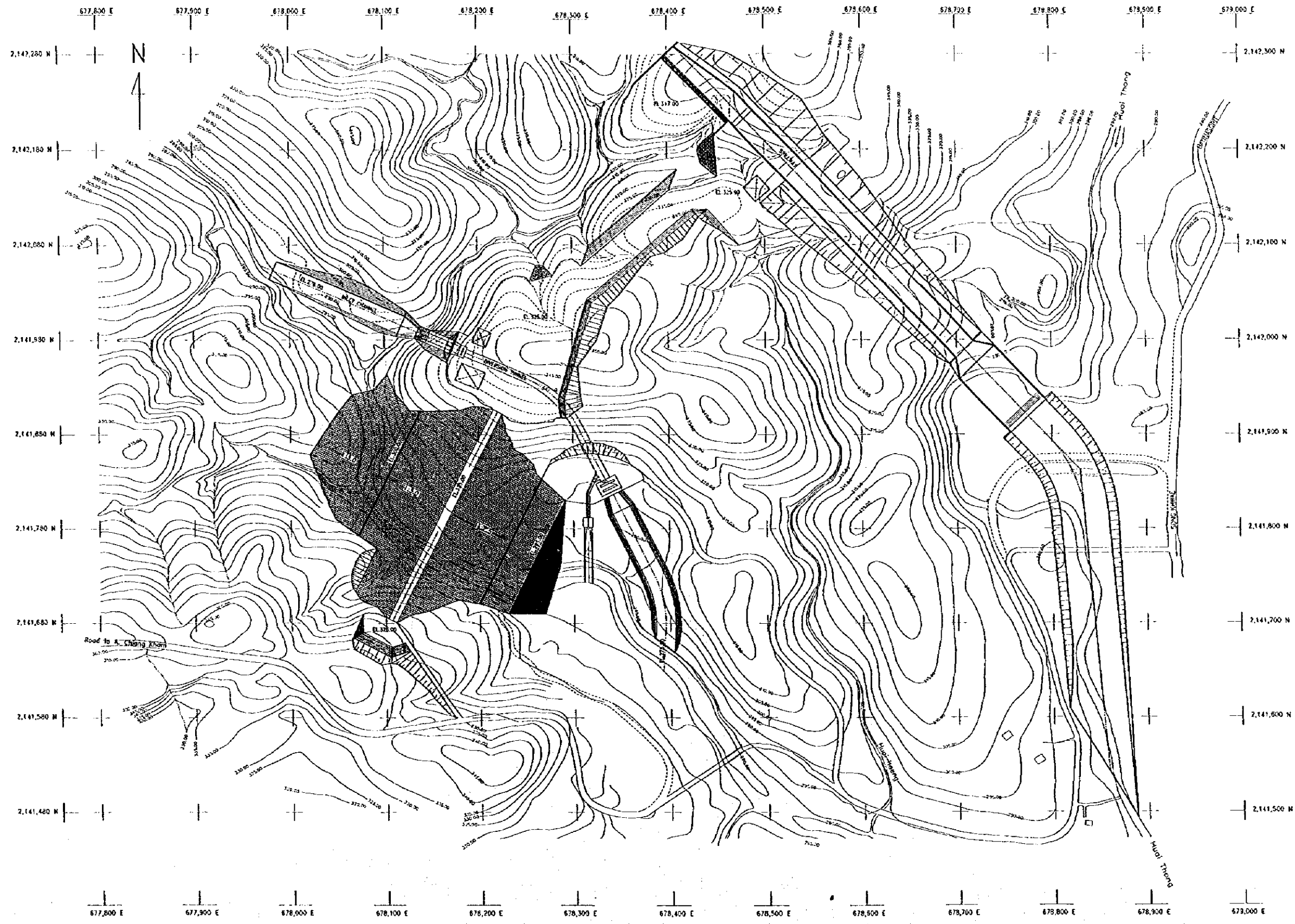
TYPE-B



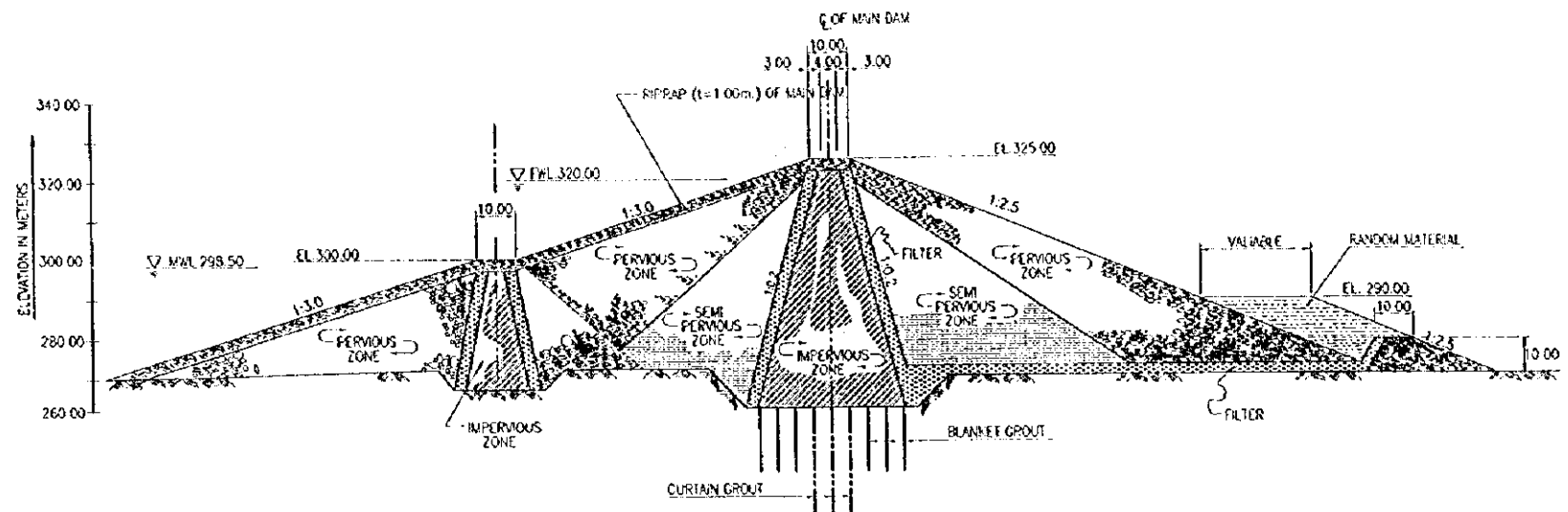
TYPE-E2



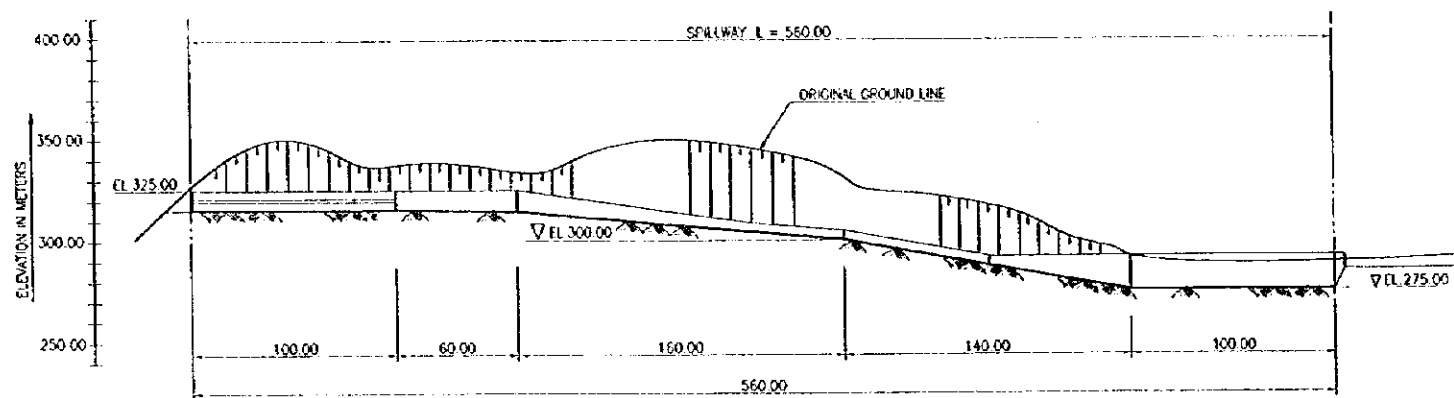
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| THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT |                      |
| TYPICAL SECTION OF ADIT<br>TYPE B & E2               | Map & Drawing<br>No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)        | Figure               |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO.,LTD.        | 11.2.5.(3)-10        |



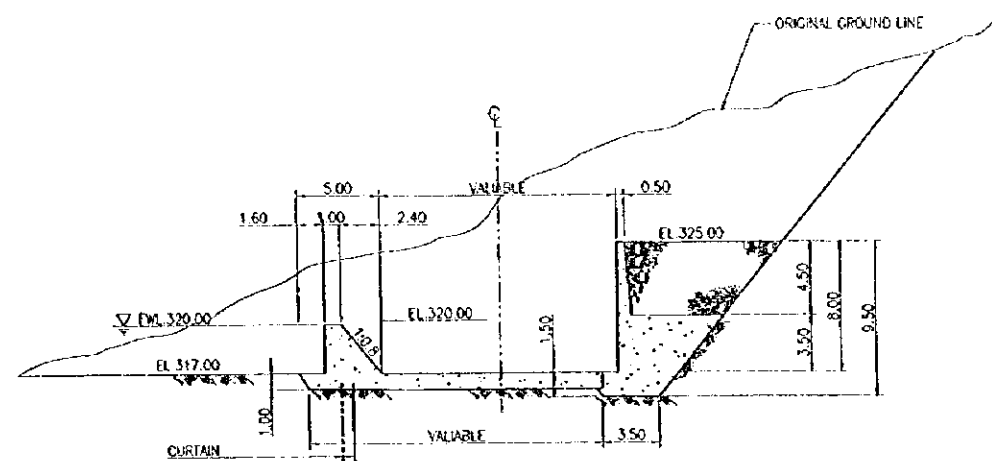
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| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| General Layout Plan of the Yao Flood Control Dam | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.6-1           |



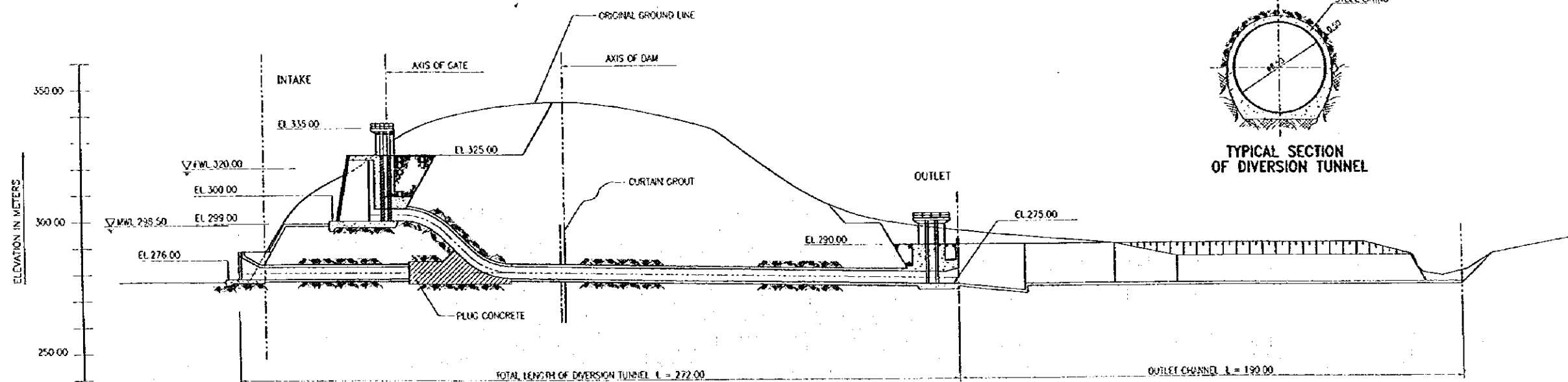
TYPICAL CROSS SECTION OF DAM



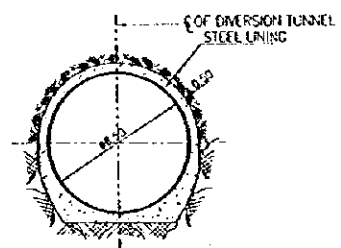
PROFILE OF SPILLWAY



SECTION OF SIDE CHANNEL

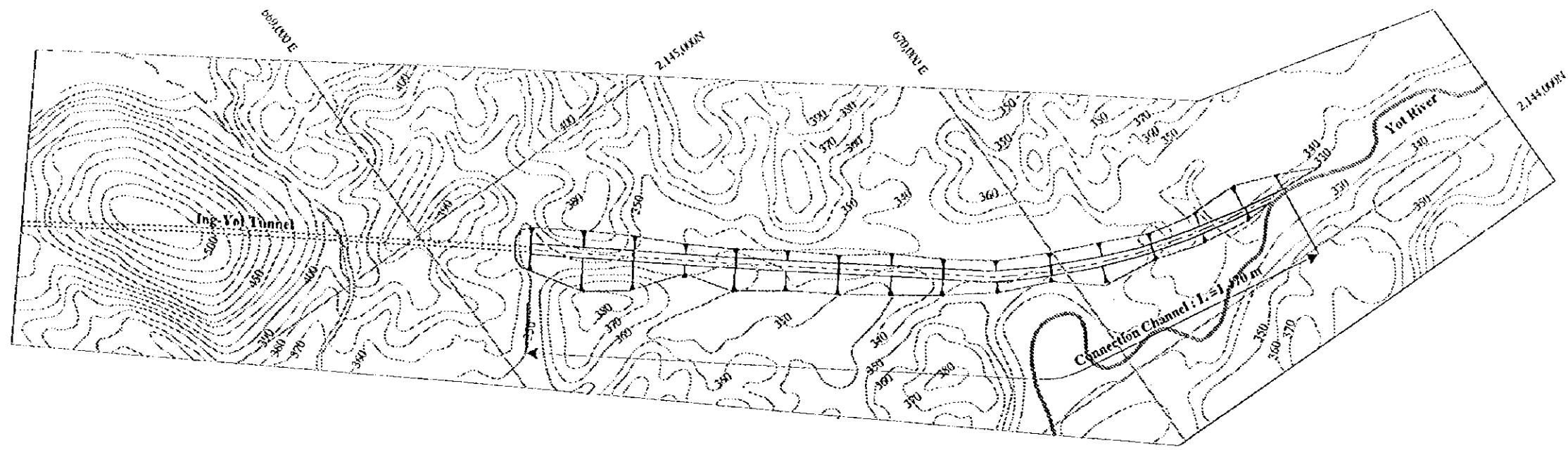


PROFILE ALONG  $\bar{C}$  OF DIVERSION TUNNEL

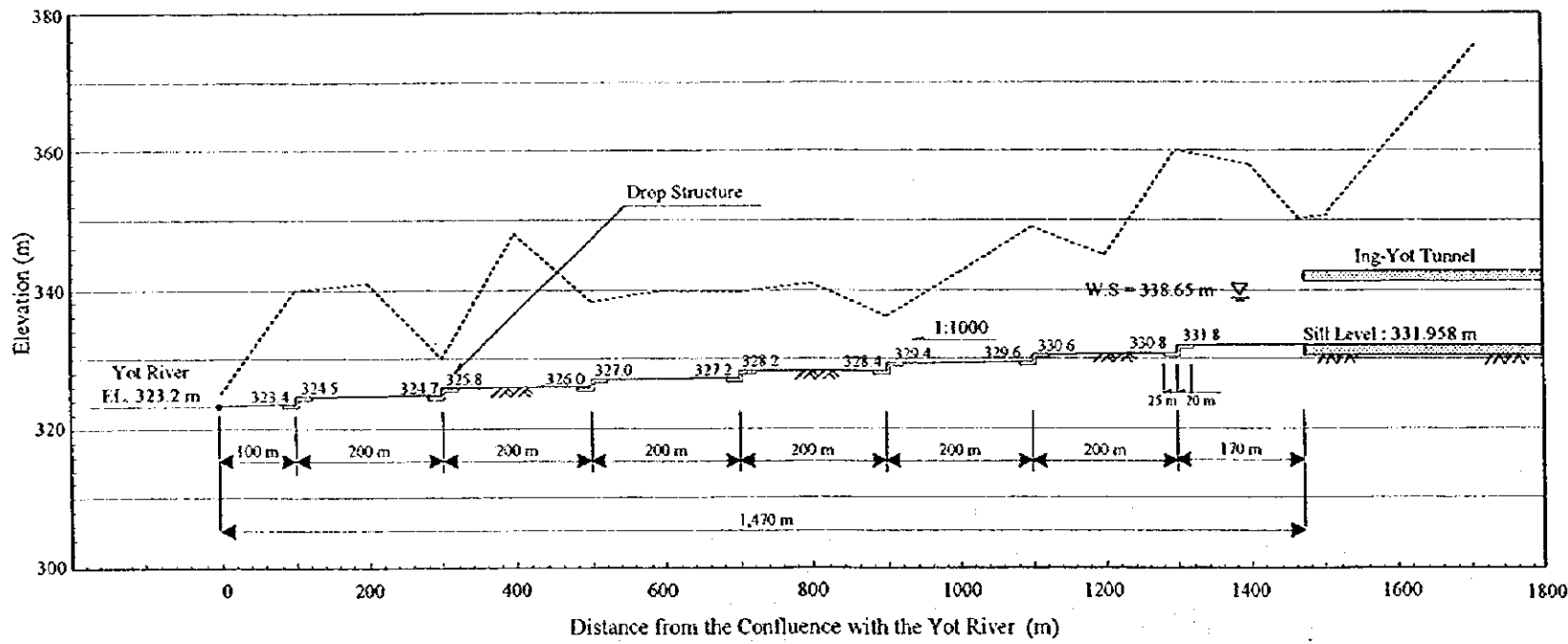
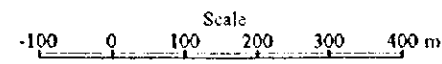


TYPICAL SECTION OF DIVERSION TUNNEL

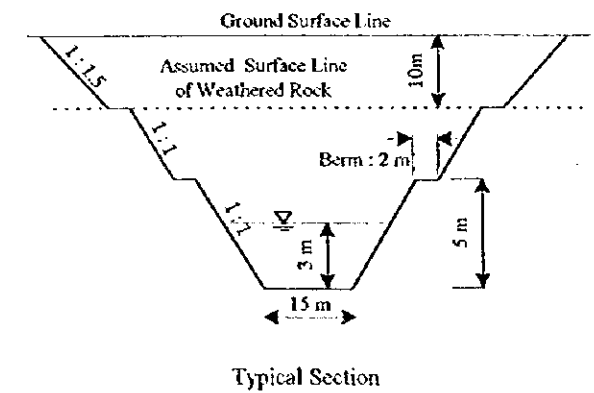
|   |                    |
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| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT                  |                    |
| Typical Section and Profile of Dam, Spillway and Diversion Tunnel |                    |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)                     | MAP & Drawings No. |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.                    | Figure 11.2.6-2    |



Plan



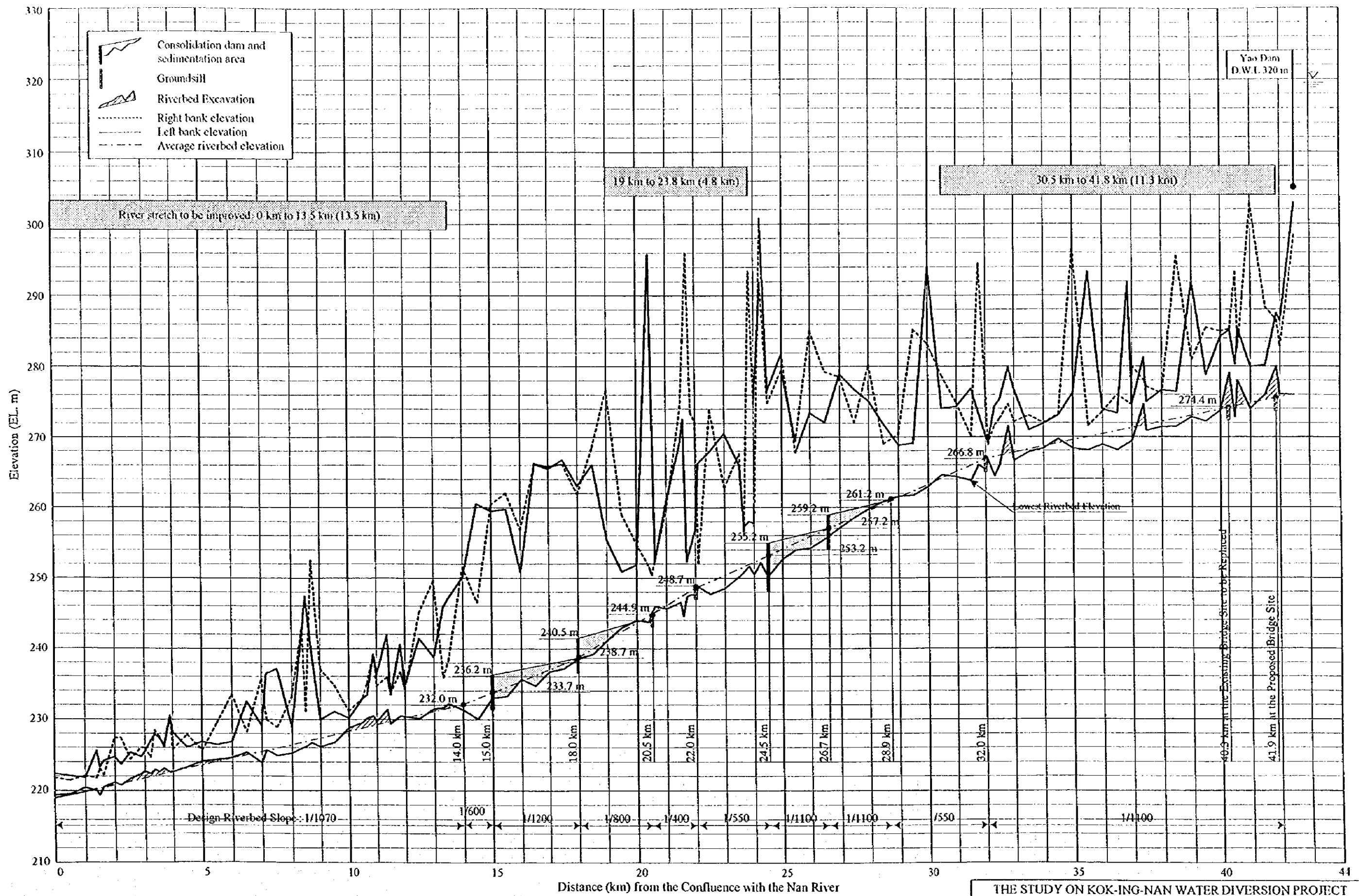
Profile



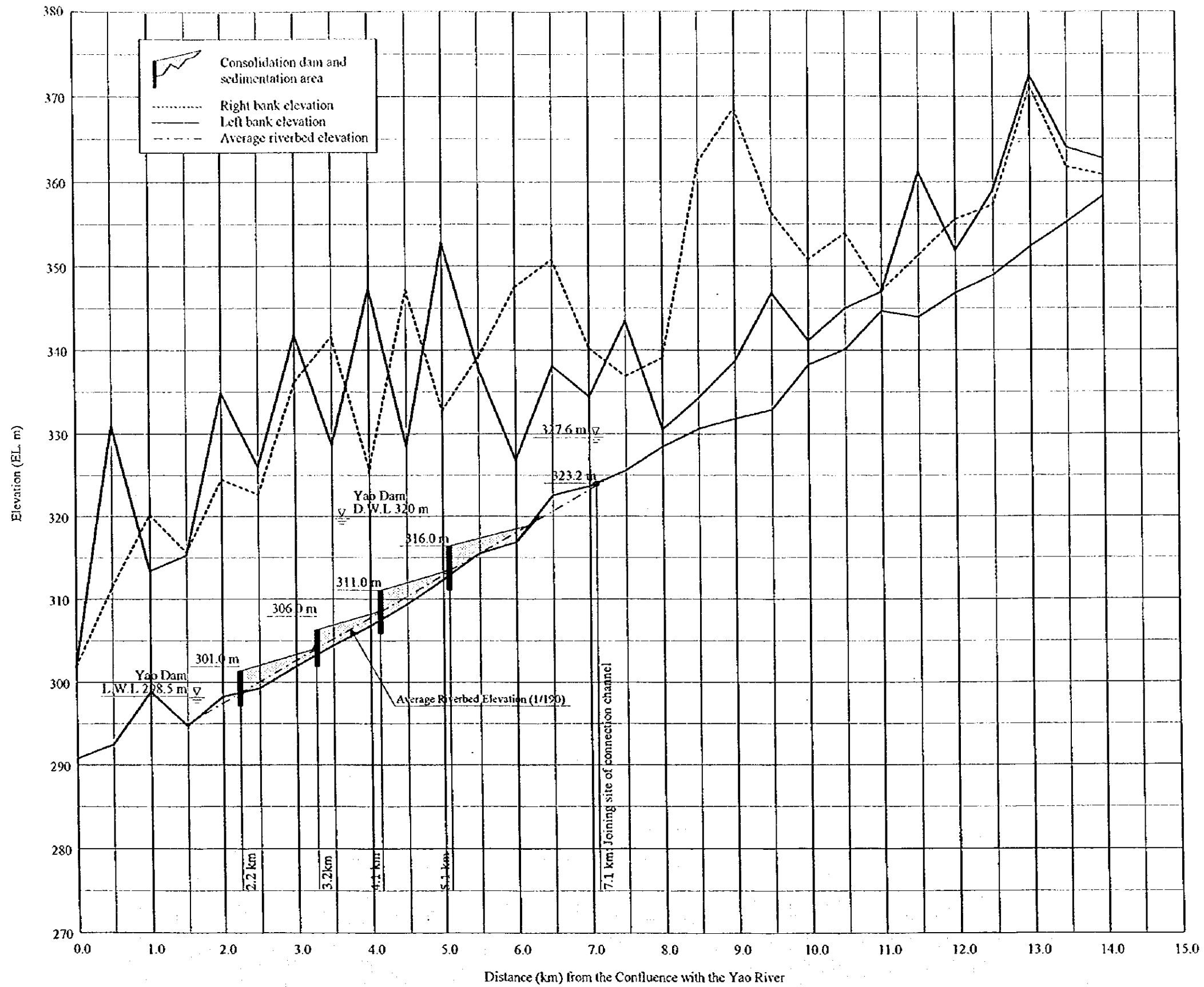
Typical Section

|  |                    |
|--|--------------------|
| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| Plan and Profile of Connection Channel           | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.6-3           |

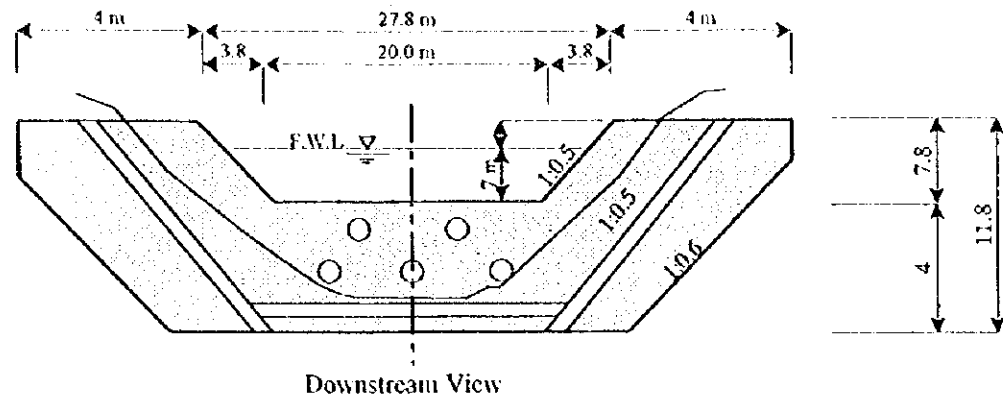




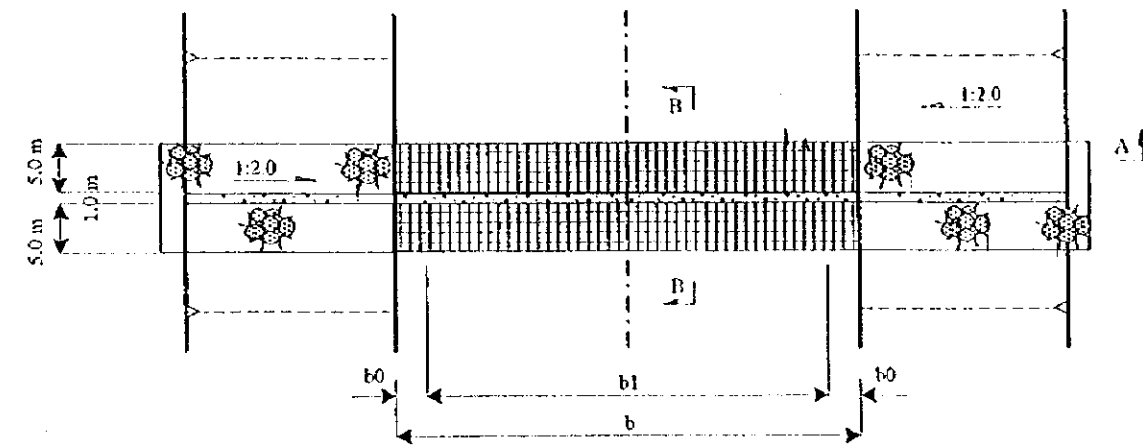
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| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| Design Profile of the Yao River Training         | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.7-1           |



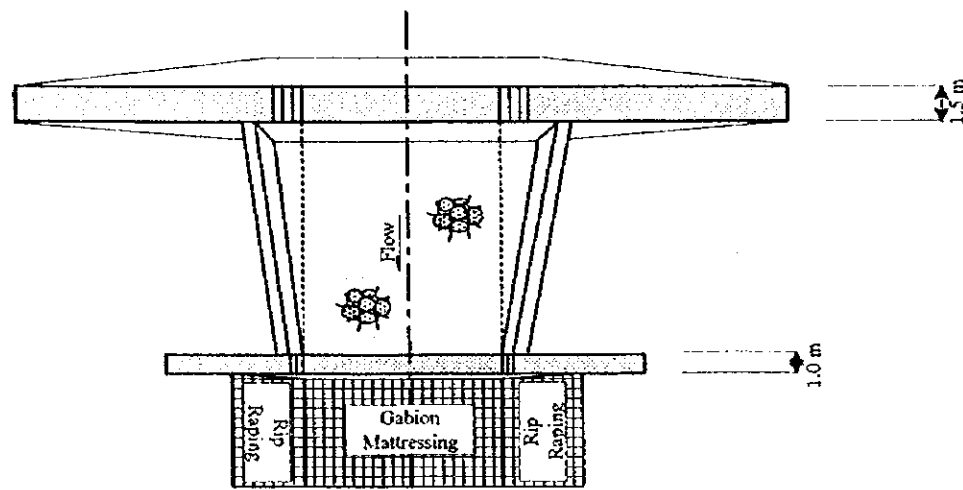
|  |                    |
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| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| Design Riverbed Profile of the Yot River         | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.7-2           |



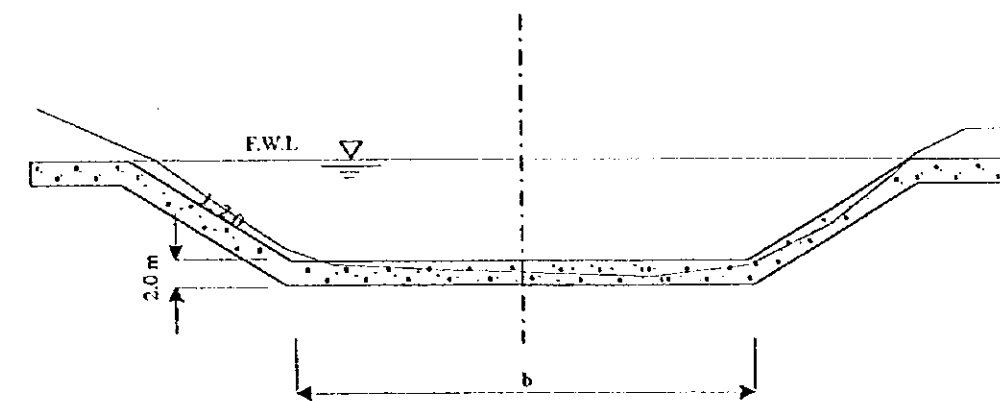
Downstream View



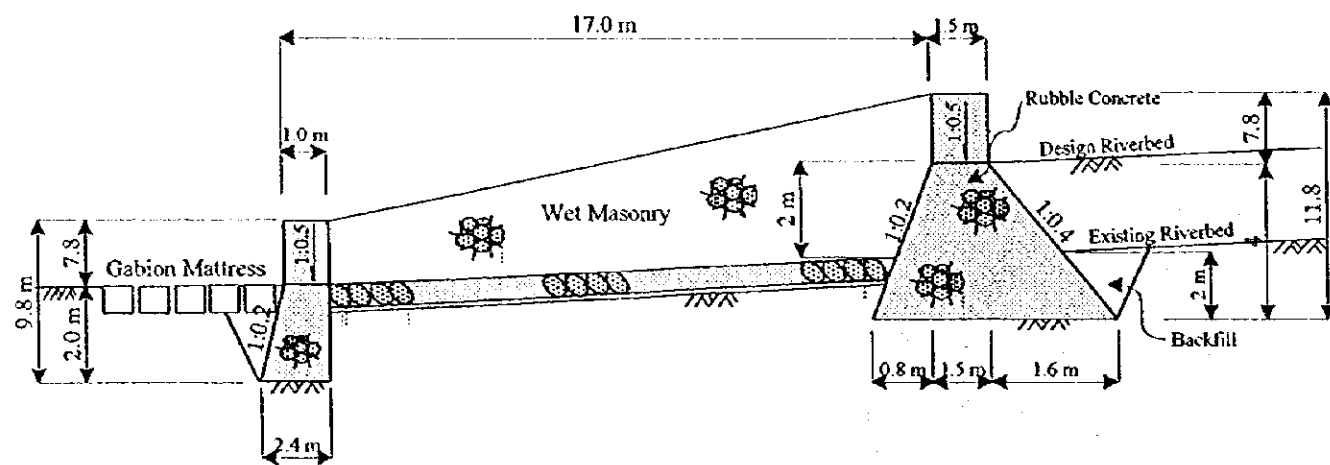
Plan



Plan

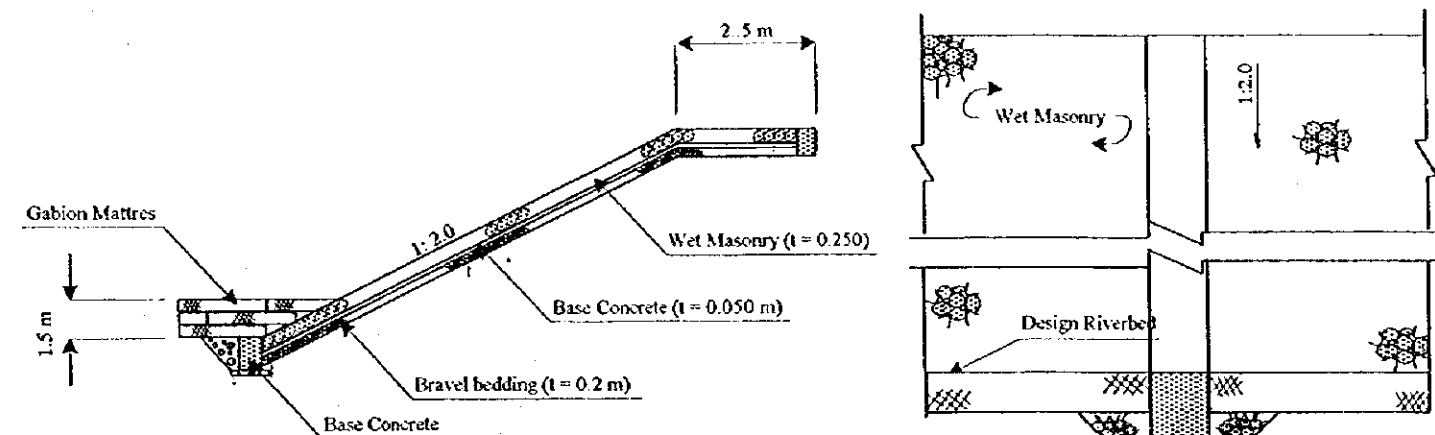


Profile



Profile

Consolidation Sill

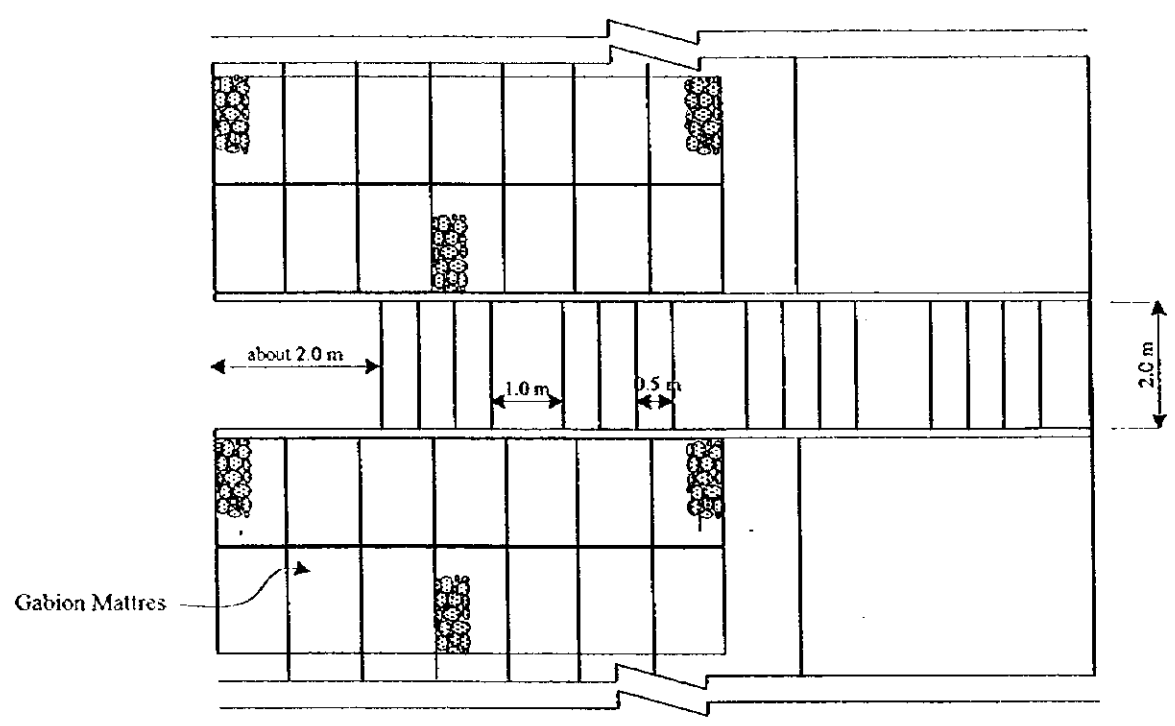
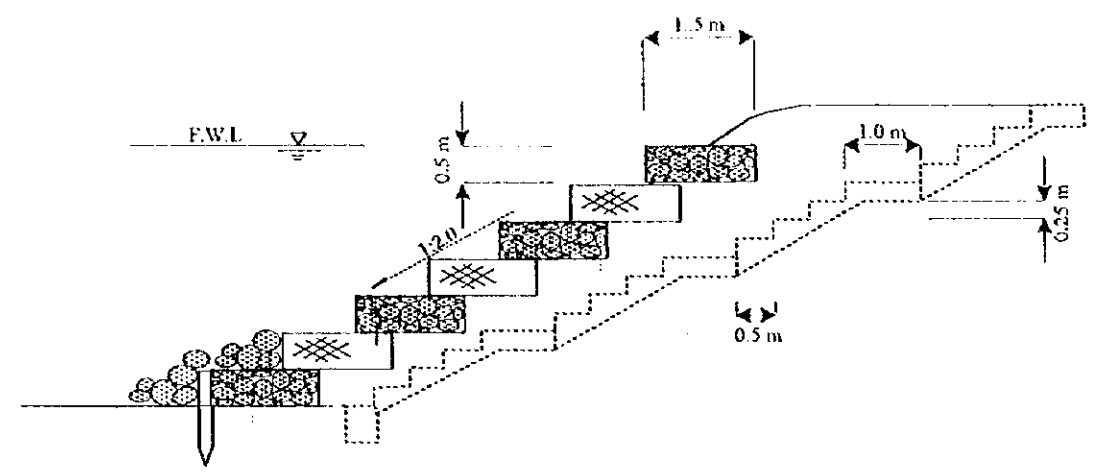


Section A - A

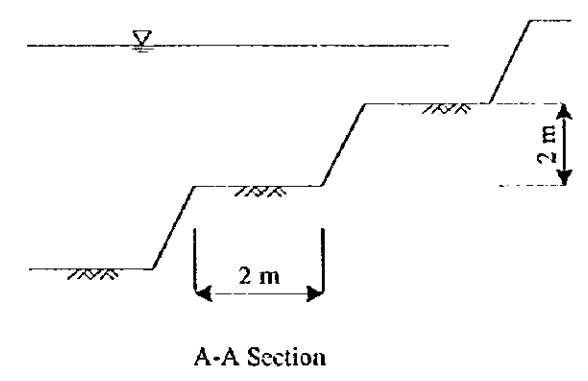
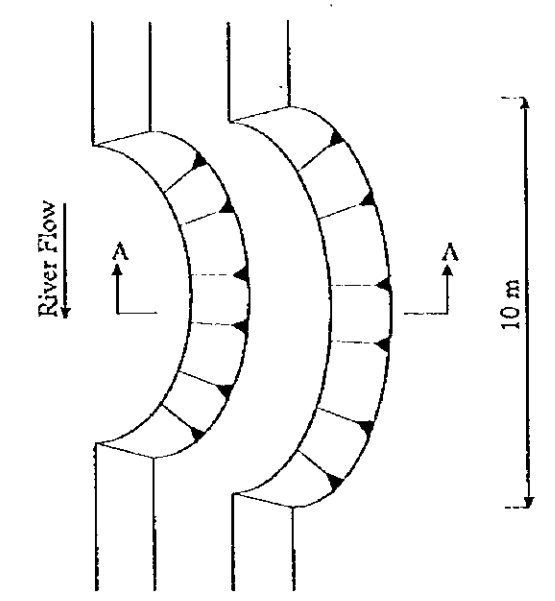
Section B - B

Groundsill

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| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| Type of Consolidation Sill and Groundsill        | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.7-5           |

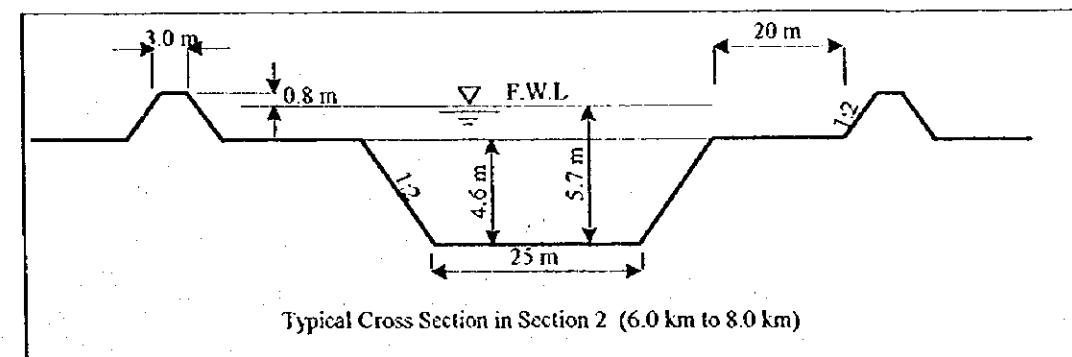
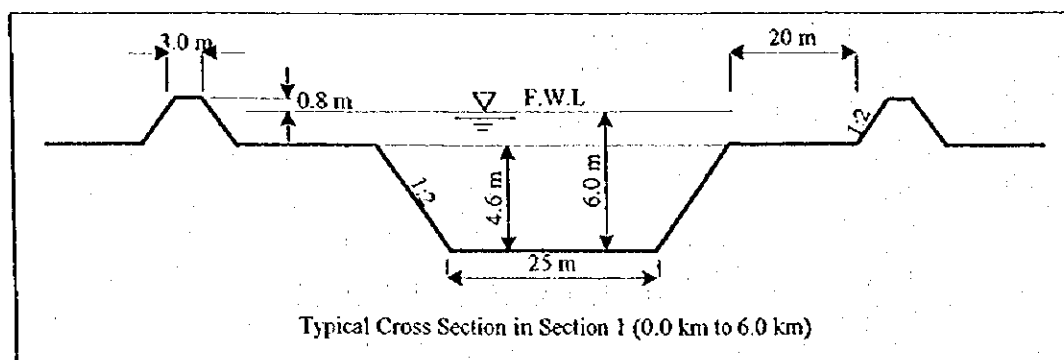
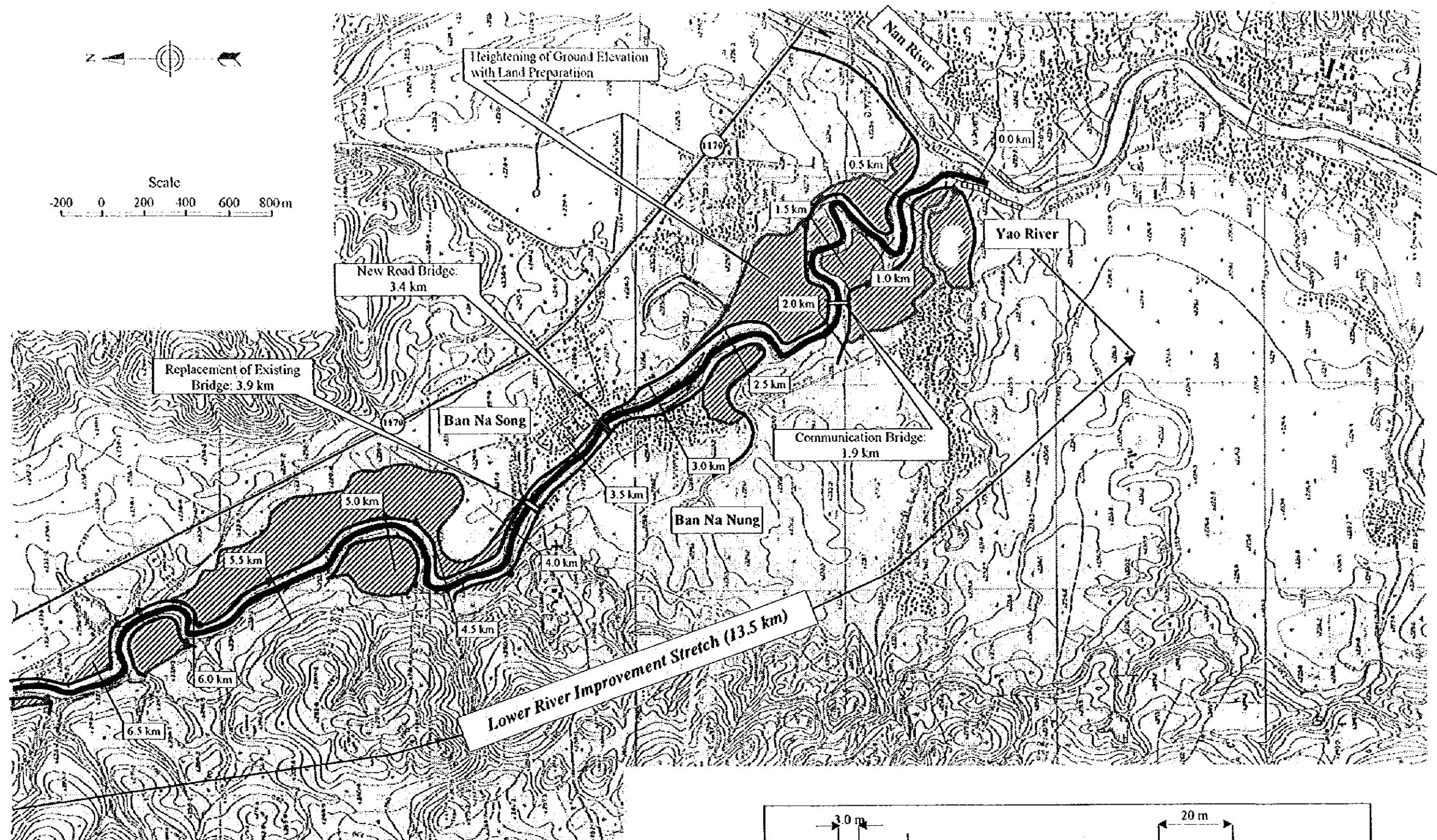


Revtment with Approach Steps to River

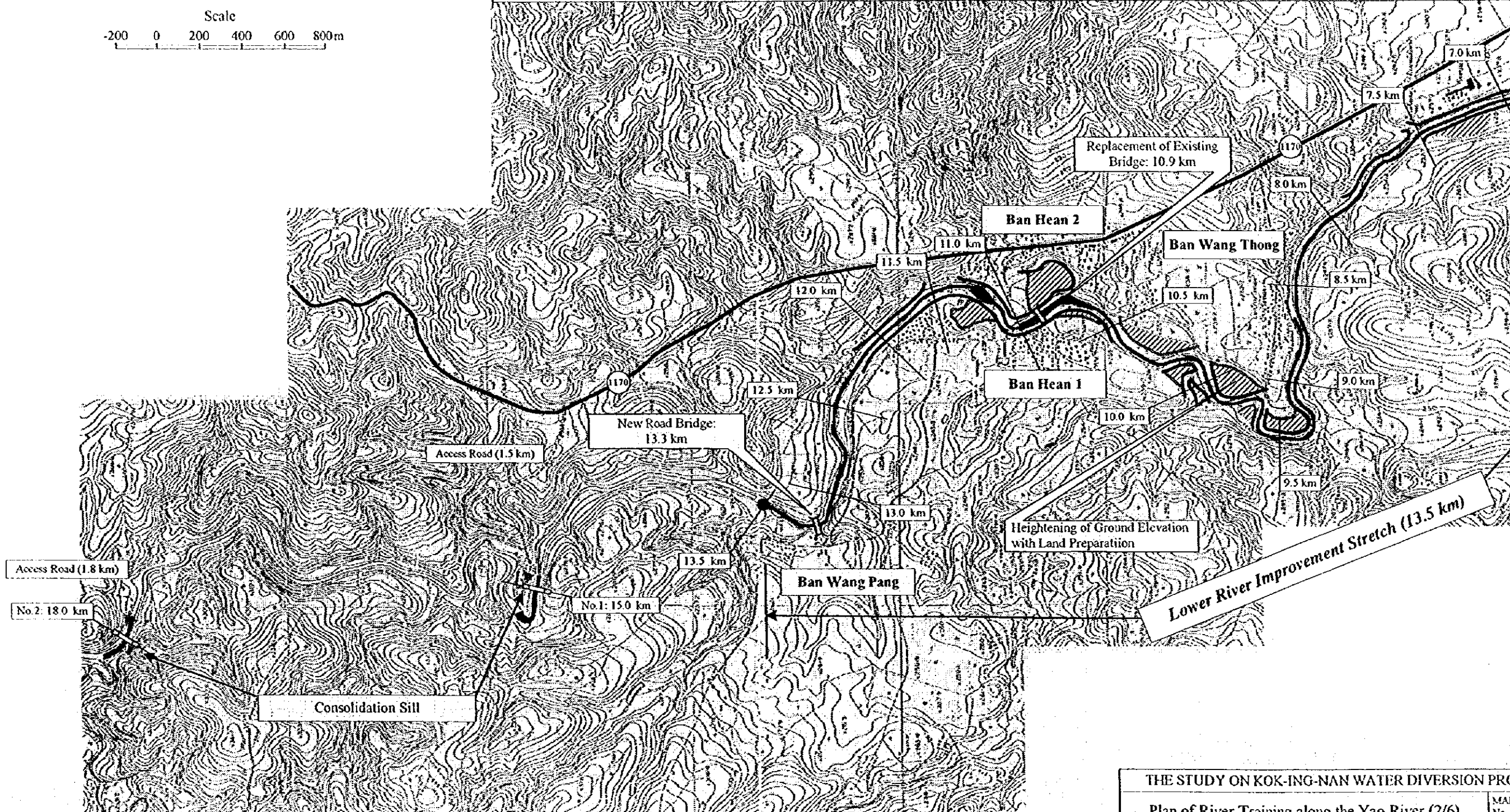
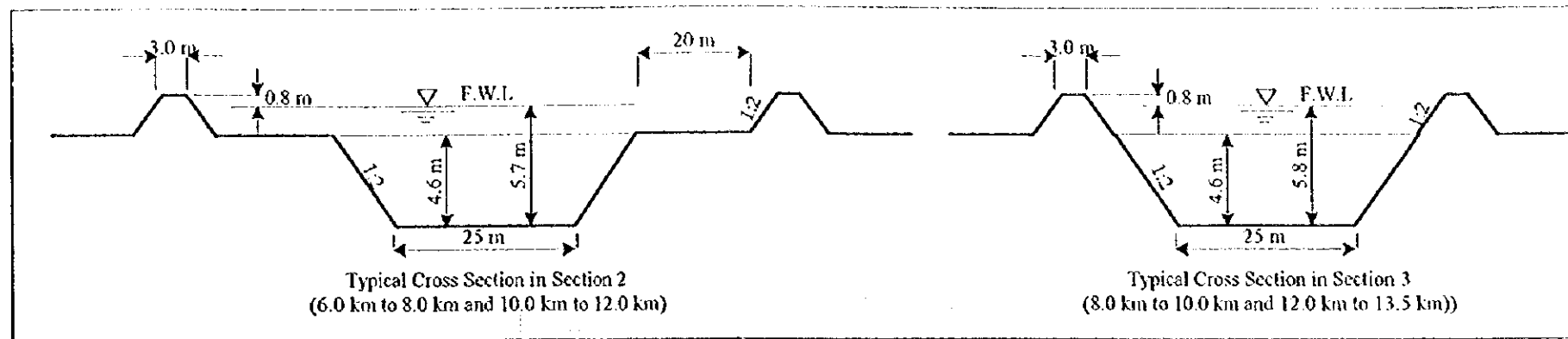
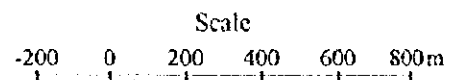


Mitigation Measure for Environmental Impact

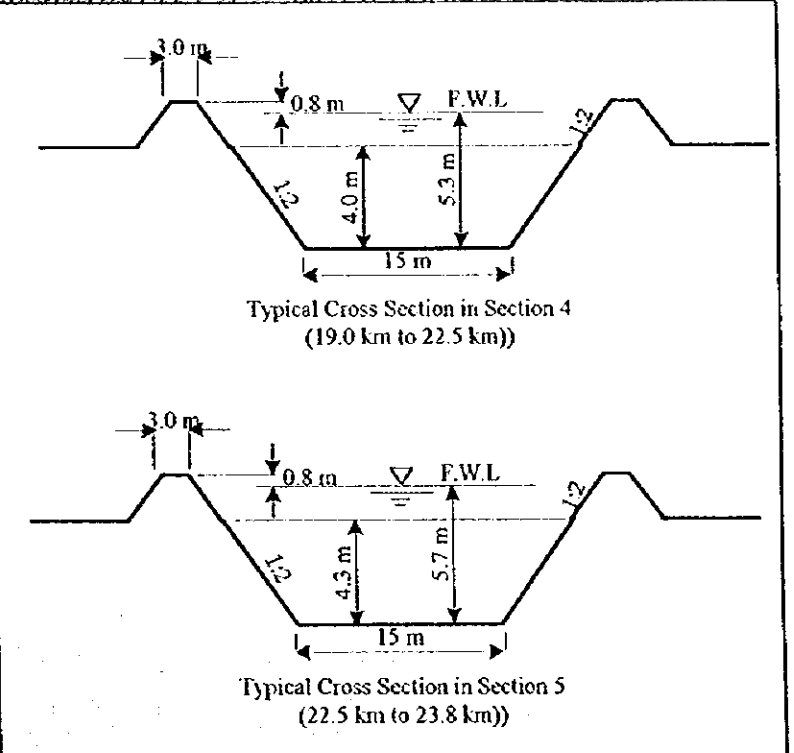
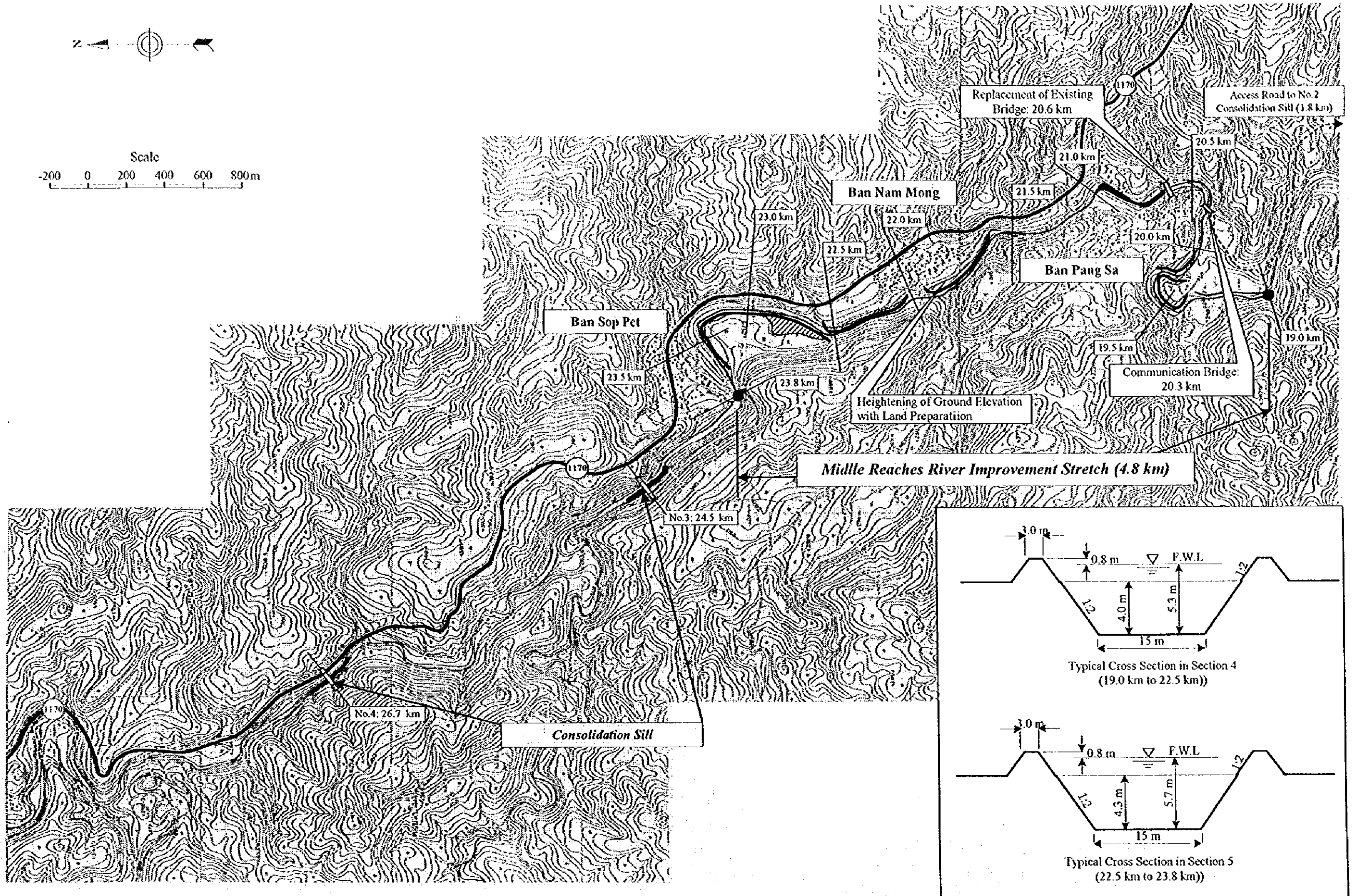
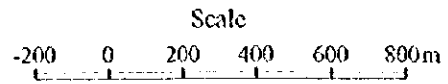
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| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT  |                    |
| Type of Revetment with Approach Steps to River, and Mitigation Measure for Environmental Impact | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)   | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.  | 11.2.7-6           |



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| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| Plan of River Training along the Yao River (1/6) | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.7-7           |



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| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| Plan of River Training along the Yao River (2/6) | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.7-8           |



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| THE STUDY ON KOK-ING-NAN WATER DIVERSION PROJECT |                    |
| Plan of River Training along the Yao River (3/6) | MAP & Drawings No. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    | Figure             |
| SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.   | 11.2.7-9           |