

5. Other Relevant Data

5.1 Data Sheet for Geological Survey (1/10)

DAILY REPORT SHEET

| Geotechnical Section Complan Eng. P. O. Box 7917 Accra | | Hole No.: 1 (Pumping Station) Date Started: 4 - 12 - 97 Date Completed: 5 - 12 - 97 Sheet No.: 1 Elevation: 24.08 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Project: JICA (IRRIGATION) | | Boring Type: PERCUSSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: MANKESSIM | | Model of Drilling Machine: Pilcon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inclination: VERTICAL | | Hole Diameter: 150 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Description | Ground Water Level | Casing Depth | SAMPLE Type | SOIL SAMPLE TEST BLOWS | | | | | | | | | | Remarks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Open | Depth | 0.00 | 0.075 | 0.152 | 0.228 | 0.305 | 0.381 | 0.457 | 0.533 | | 0.609 | 0.685 | 0.761 | 0.837 | 0.913 | 0.989 | 1.065 | 1.141 | 1.217 | 1.293 | 1.369 | 1.445 | 1.521 | 1.597 | 1.673 | 1.749 | 1.825 | 1.901 | 1.977 | 2.053 | 2.129 | 2.205 | 2.281 | 2.357 | 2.433 | 2.509 | 2.585 | 2.661 | 2.737 | 2.813 | 2.889 | 2.965 | 3.041 | 3.117 | 3.193 | 3.269 | 3.345 | 3.421 | 3.497 | 3.573 | 3.649 | 3.725 | 3.801 | 3.877 | 3.953 | 4.029 | 4.105 | 4.181 | 4.257 | 4.333 | 4.409 | 4.485 | 4.561 | 4.637 | 4.713 | 4.789 | 4.865 | 4.941 | 5.017 | 5.093 | 5.169 | 5.245 | 5.321 | 5.397 | 5.473 | 5.549 | 5.625 | 5.701 | 5.777 | 5.853 | 5.929 | 6.005 | 6.081 | 6.157 | 6.233 | 6.309 | 6.385 | 6.461 | 6.537 | 6.613 | 6.689 | 6.765 | 6.841 | 6.917 | 6.993 | 7.069 | 7.145 | 7.221 | 7.297 | 7.373 | 7.449 | 7.525 | 7.601 | 7.677 | 7.753 | 7.829 | 7.905 | 7.981 | 8.057 | 8.133 | 8.209 | 8.285 | 8.361 | 8.437 | 8.513 | 8.589 | 8.665 | 8.741 | 8.817 | 8.893 | 8.969 | 9.045 | 9.121 | 9.197 | 9.273 | 9.349 | 9.425 | 9.501 | 9.577 | 9.653 | 9.729 | 9.805 | 9.881 | 9.957 | 10.033 | 10.109 | 10.185 | 10.261 | 10.337 | 10.413 | 10.489 | 10.565 | 10.641 | 10.717 | 10.793 | 10.869 | 10.945 | 11.021 | 11.097 | 11.173 | 11.249 | 11.325 | 11.401 | 11.477 | 11.553 | 11.629 | 11.705 | 11.781 | 11.857 | 11.933 | 12.009 | 12.085 | 12.161 | 12.237 | 12.313 | 12.389 | 12.465 | 12.541 | 12.617 | 12.693 | 12.769 | 12.845 | 12.921 | 12.997 | 13.073 | 13.149 | 13.225 | 13.301 | 13.377 | 13.453 | 13.529 | 13.605 | 13.681 | 13.757 | 13.833 | 13.909 | 13.985 | 14.061 | 14.137 | 14.213 | 14.289 | 14.365 | 14.441 | 14.517 | 14.593 | 14.669 | 14.745 | 14.821 | 14.897 | 14.973 | 15.049 | 15.125 | 15.201 | 15.277 | 15.353 | 15.429 | 15.505 | 15.581 | 15.657 | 15.733 | 15.809 | 15.885 | 15.961 | 16.037 | 16.113 | 16.189 | 16.265 | 16.341 | 16.417 | 16.493 | 16.569 | 16.645 | 16.721 | 16.797 | 16.873 | 16.949 | 17.025 | 17.101 | 17.177 | 17.253 | 17.329 | 17.405 | 17.481 | 17.557 | 17.633 | 17.709 | 17.785 | 17.861 | 17.937 | 18.013 | 18.089 | 18.165 | 18.241 | 18.317 | 18.393 | 18.469 | 18.545 | 18.621 | 18.697 | 18.773 | 18.849 | 18.925 | 19.001 | 19.077 | 19.153 | 19.229 | 19.305 | 19.381 | 19.457 | 19.533 | 19.609 | 19.685 | 19.761 | 19.837 | 19.913 | 19.989 | 20.065 | 20.141 | 20.217 | 20.293 | 20.369 | 20.445 | 20.521 | 20.597 | 20.673 | 20.749 | 20.825 | 20.901 | 20.977 | 21.053 | 21.129 | 21.205 | 21.281 | 21.357 | 21.433 | 21.509 | 21.585 | 21.661 | 21.737 | 21.813 | 21.889 | 21.965 | 22.041 | 22.117 | 22.193 | 22.269 | 22.345 | 22.421 | 22.497 | 22.573 | 22.649 | 22.725 | 22.801 | 22.877 | 22.953 | 23.029 | 23.105 | 23.181 | 23.257 | 23.333 | 23.409 | 23.485 | 23.561 | 23.637 | 23.713 | 23.789 | 23.865 | 23.941 | 24.017 | 24.093 | 24.169 | 24.245 | 24.321 | 24.397 | 24.473 | 24.549 | 24.625 | 24.701 | 24.777 | 24.853 | 24.929 | 25.005 | 25.081 | 25.157 | 25.233 | 25.309 | 25.385 | 25.461 | 25.537 | 25.613 | 25.689 | 25.765 | 25.841 | 25.917 | 25.993 | 26.069 | 26.145 | 26.221 | 26.297 | 26.373 | 26.449 | 26.525 | 26.601 | 26.677 | 26.753 | 26.829 | 26.905 | 26.981 | 27.057 | 27.133 | 27.209 | 27.285 | 27.361 | 27.437 | 27.513 | 27.589 | 27.665 | 27.741 | 27.817 | 27.893 | 27.969 | 28.045 | 28.121 | 28.197 | 28.273 | 28.349 | 28.425 | 28.501 | 28.577 | 28.653 | 28.729 | 28.805 | 28.881 | 28.957 | 29.033 | 29.109 | 29.185 | 29.261 | 29.337 | 29.413 | 29.489 | 29.565 | 29.641 | 29.717 | 29.793 | 29.869 | 29.945 | 30.021 | 30.097 | 30.173 | 30.249 | 30.325 | 30.401 | 30.477 | 30.553 | 30.629 | 30.705 | 30.781 | 30.857 | 30.933 | 31.009 | 31.085 | 31.161 | 31.237 | 31.313 | 31.389 | 31.465 | 31.541 | 31.617 | 31.693 | 31.769 | 31.845 | 31.921 | 31.997 | 32.073 | 32.149 | 32.225 | 32.301 | 32.377 | 32.453 | 32.529 | 32.605 | 32.681 | 32.757 | 32.833 | 32.909 | 32.985 | 33.061 | 33.137 | 33.213 | 33.289 | 33.365 | 33.441 | 33.517 | 33.593 | 33.669 | 33.745 | 33.821 | 33.897 | 33.973 | 34.049 | 34.125 | 34.201 | 34.277 | 34.353 | 34.429 | 34.505 | 34.581 | 34.657 | 34.733 | 34.809 | 34.885 | 34.961 | 35.037 | 35.113 | 35.189 | 35.265 | 35.341 | 35.417 | 35.493 | 35.569 | 35.645 | 35.721 | 35.797 | 35.873 | 35.949 | 36.025 | 36.101 | 36.177 | 36.253 | 36.329 | 36.405 | 36.481 | 36.557 | 36.633 | 36.709 | 36.785 | 36.861 | 36.937 | 37.013 | 37.089 | 37.165 | 37.241 | 37.317 | 37.393 | 37.469 | 37.545 | 37.621 | 37.697 | 37.773 | 37.849 | 37.925 | 38.001 | 38.077 | 38.153 | 38.229 | 38.305 | 38.381 | 38.457 | 38.533 | 38.609 | 38.685 | 38.761 | 38.837 | 38.913 | 38.989 | 39.065 | 39.141 | 39.217 | 39.293 | 39.369 | 39.445 | 39.521 | 39.597 | 39.673 | 39.749 | 39.825 | 39.901 | 39.977 | 40.053 | 40.129 | 40.205 | 40.281 | 40.357 | 40.433 | 40.509 | 40.585 | 40.661 | 40.737 | 40.813 | 40.889 | 40.965 | 41.041 | 41.117 | 41.193 | 41.269 | 41.345 | 41.421 | 41.497 | 41.573 | 41.649 | 41.725 | 41.801 | 41.877 | 41.953 | 42.029 | 42.105 | 42.181 | 42.257 | 42.333 | 42.409 | 42.485 | 42.561 | 42.637 | 42.713 | 42.789 | 42.865 | 42.941 | 43.017 | 43.093 | 43.169 | 43.245 | 43.321 | 43.397 | 43.473 | 43.549 | 43.625 | 43.701 | 43.777 | 43.853 | 43.929 | 44.005 | 44.081 | 44.157 | 44.233 | 44.309 | 44.385 | 44.461 | 44.537 | 44.613 | 44.689 | 44.765 | 44.841 | 44.917 | 44.993 | 45.069 | 45.145 | 45.221 | 45.297 | 45.373 | 45.449 | 45.525 | 45.601 | 45.677 | 45.753 | 45.829 | 45.905 | 45.981 | 46.057 | 46.133 | 46.209 | 46.285 | 46.361 | 46.437 | 46.513 | 46.589 | 46.665 | 46.741 | 46.817 | 46.893 | 46.969 | 47.045 | 47.121 | 47.197 | 47.273 | 47.349 | 47.425 | 47.501 | 47.577 | 47.653 | 47.729 | 47.805 | 47.881 | 47.957 | 48.033 | 48.109 | 48.185 | 48.261 | 48.337 | 48.413 | 48.489 | 48.565 | 48.641 | 48.717 | 48.793 | 48.869 | 48.945 | 49.021 | 49.097 | 49.173 | 49.249 | 49.325 | 49.401 | 49.477 | 49.553 | 49.629 | 49.705 | 49.781 | 49.857 |

5.4 Data Sheet for Geological Survey (4/10)

| DAILY REPORT SHEET | | | | | | | | | | | | | | | | | | |
|---|----------------------|------------------------|---|-------------|-----------|---|-------|-------|-----------------------------------|-------|-------|--|-------|-------|-------|---|--|--------------------------|
| Geotechnical Section Complan Eng. P. O. Box 7917 Accra | | | Hole No.: 1 (Pumping Station) Date Started: 6 - 12 - 97 Date Completed: 7 - 12 - 97 | | | Boring Type: PERCUSSION Model of Drilling Machine: Pilcon Hole Diameter: 150 mm | | | Sheet No.: 2 Elevation: 7.46 m | | | Project : JICA (IRRIGATION) Location: OKYEREKO Inclination: VERTICAL | | | | | | |
| Sample Description | Depth below C.L. (m) | Ground Water Level (m) | Casing Depth (m) | SAMPLE Type | Depth (m) | SOIL SAMPLE TEST BLOWS | | | | | | | | | | Total Pen (m) | Core Len (m) | Remarks |
| | | | | | | 0.000 | 0.076 | 0.152 | 0.229 | 0.305 | 0.381 | 0.457 | 0.533 | 0.610 | 0.687 | | | |
| GRAVEL, sandy, loose, saturated, grey (Alluvial deposits) | 5.6 | | 6.00 | SPT 7 | 6.00 | 2 | 4 | 7 | 12 | 16 | 20 | 25 | 30 | 35 | 40 | 46 | | No. recovery for SPT / 7 |
| | | | | | 6.46 | 3 | 4 | 7 | 12 | 16 | 20 | 25 | 30 | 35 | 40 | 46 | | |
| CLAY, silty, medium stiff, grey | 6.9 | | 7.90 | SPT 8 | 8.02 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 0.61 | | Presence of rounded quartz gravels in SPT / 8 shoe | |
| | | | | | 8.76 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 0.61 | | | |
| GRAVEL (rounded), sandy, loose, saturated, grey (Alluvial deposits) | 8.6 | | | SPT 9 | 8.82 | 3 | 2 | 2 | 2 | 2 | 5 | 5 | 6 | 6 | 0.30 | | | |
| | | | | | 9.43 | 3 | 2 | 2 | 2 | 2 | 5 | 5 | 6 | 6 | 0.30 | | | |
| Boring terminated at 10.20 m | 10.2 | | | SPT 10 | 9.56 | 6 | 6 | 5 | 3 | 4 | 4 | 5 | 9 | 0.61 | | Water level 15 hours after completion: 2.26 m | | |
| | | | | | 10.21 | 6 | 6 | 5 | 3 | 4 | 4 | 5 | 9 | 0.61 | | | | |

5.5 Data Sheet for Geological Survey (5/10)

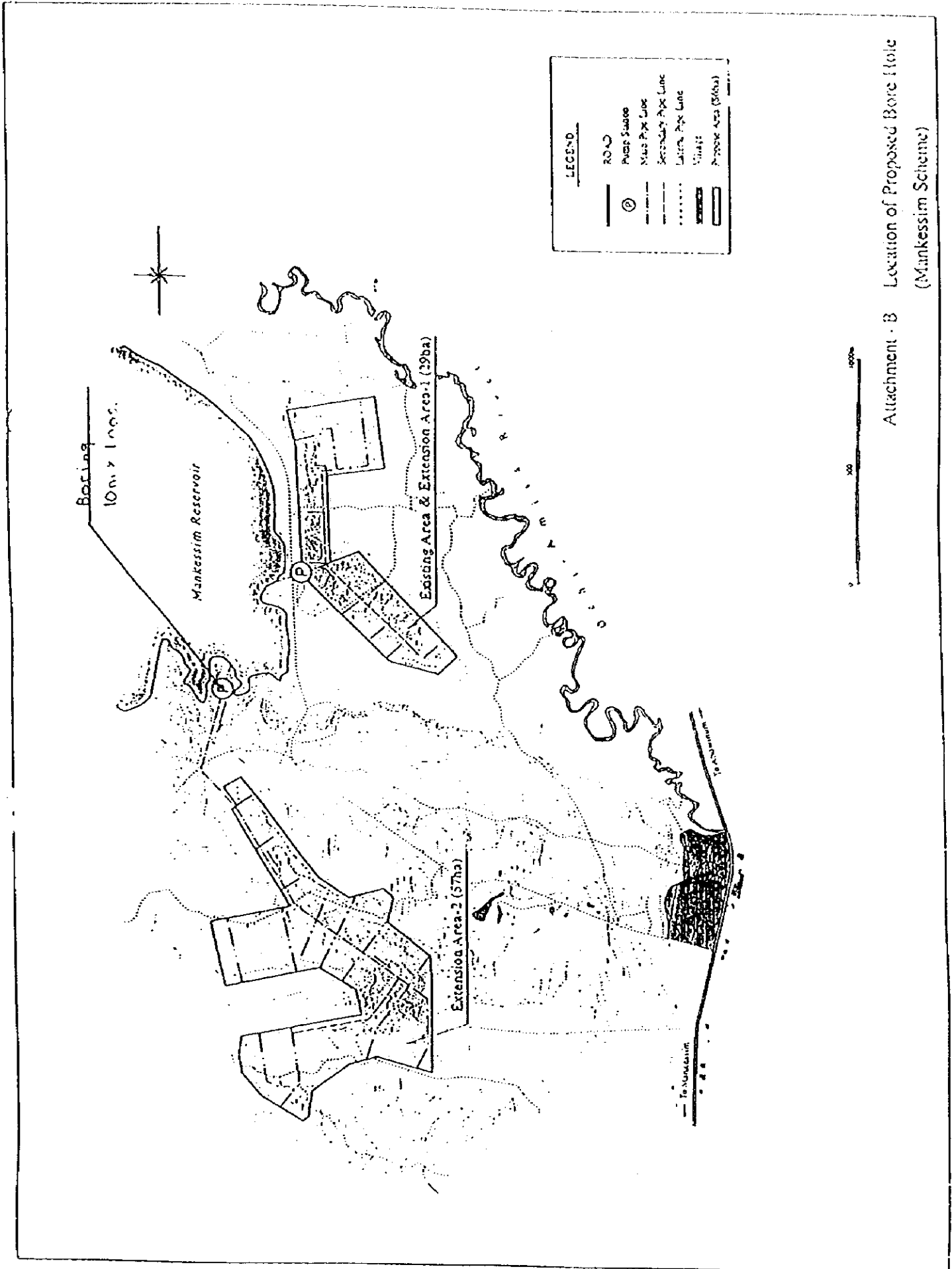
| DAILY REPORT SHEET | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------|--------------------|--|-------------|--------------|--|-------|-------|--|-------|-------|---|-------|-------|-------|-----|-----|-------|-------|---|---|---|------|------|
| Geotechnical Section Compran Eng. P. O. Box 7917 Accra | | | Hole No 2 (Headworks) Date Started: 9 - 12 - 97 Date Completed: 9 - 12 - 97 Sheet No 1 Elevation: 3.73 m | | | Boring Type: PERCUSSION Model of Drilling Machine: Pilcon Hole Diameter: 150 mm Inclination: VERTICAL | | | Project: JICA (IRRIGATION) Location: OKYEREKO | | | Remarks Presence of roots from 0 to 0.65 m Ground water encountered at 2.15 m | | | | | | | | | | | | |
| Sample Description | Begin Below G.L. | Ground Water Level | Carry Depth | SAMPLE Type | SAMPLE Depth | SOIL SAMPLE TEST BLOWS | | | | | | | | | | Pen | SPT | | | | | | | |
| | | | | | | 0.075 | 0.152 | 0.229 | 0.305 | 0.381 | 0.457 | 0.533 | 0.610 | 0.687 | 0.763 | | | 0.839 | 0.915 | | | | | |
| TOP SOIL | 0.0 | | | | | | | | | | | | | | | | | | | | | | | |
| SAND, silty, gravelly, loose, grey, yellowish brown, black patches | 0.1 | | | | | | | | | | | | | | | | | | | | | | | |
| CLAY, sandy, medium stiff, grey, yellowish brown, black patches | 0.5 | | | | | | | | | | | | | | | | | | | | | | | |
| | 2.1 | | 1.55 | 12 | 1.4 | 7 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0.41 | 0.26 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| GRAVEL, sandy, loose, saturated, grey yellowish brown | | | 3.00 | 32 | 3.1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0.81 | 0.40 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| GRAVEL, sandy, loose, saturated, grey (Alluvial deposits) | 4.0 | | 4.50 | 32 | 4.1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0.81 | 0.40 |
| | | | | | | | | | | | | | | | | | | | | | | | | |

5.9 Data Sheet for Geological Survey (9/10)

| DAILY REPORT SHEET | | | | | | | | | | | | | | | | | | | | | |
|--|------------------|--------------------|---|------------------------|-------|-------------------------------------|-------|-------|--|-------|-------|---------|-------|-------|---------|-------|-------------|--|--|--|--|
| Geotechnical Section Campiran Eng. P. O. Box 7917 Accra | | | Hole No 1 (Block - A) Date Started 14.12.97 Date Completed 14.12.97 | | | Sheet No 1 Elevation 82.35 m | | | Boring Type: PERCUSSION Model of Drilling Machine: Pitcon Hole Diameter: 150 mm Inclination: VERTICAL | | | Remarks | | | | | | | | | |
| Sample Description | Depth Below C.L. | Ground Water Level | Casing Depth | SOIL SAMPLE TEST BLOWS | | | | | | | | | | | | | | | | | |
| | | | | Sample Type | Depth | 0.000 | 0.076 | 0.153 | 0.229 | 0.305 | 0.381 | 0.457 | 0.533 | 0.610 | Refusal | Blows | Penetration | | | | |
| TOP SOIL | 0.0 | | | | | | | | | | | | | | | | | | | | |
| CLAY, gravelly, sandy, medium stiff, brown, yellowish brown, black patches | 0.1 | | | | | | | | | | | | | | | | | | | | |
| | 1.3 | | 1.55 | | | | | | | | | | | | | | | | | | |
| CLAY, silty, gravelly, medium stiff, grey, yellowish brown | 1.5 | | | | | | | | | | | | | | | | | | | | |
| | 2.5 | | | | | | | | | | | | | | | | | | | | |
| SAND, silty, very dense, yellowish / reddish brown, black patches (moderately weathered sandstone) | 2.7 | | | | | | | | | | | | | | | | | | | | |
| | 3.1 | | | | | | | | | | | | | | | | | | | | |
| | 3.3 | | | | | | | | | | | | | | | | | | | | |
| | 3.5 | | | | | | | | | | | | | | | | | | | | |
| | 3.7 | | | | | | | | | | | | | | | | | | | | |
| | 3.9 | | | | | | | | | | | | | | | | | | | | |
| | 4.1 | | | | | | | | | | | | | | | | | | | | |
| | 4.3 | | | | | | | | | | | | | | | | | | | | |
| | 4.5 | | | | | | | | | | | | | | | | | | | | |
| | 4.7 | | | | | | | | | | | | | | | | | | | | |
| | 4.9 | | | | | | | | | | | | | | | | | | | | |
| | 5.1 | | | | | | | | | | | | | | | | | | | | |
| | 5.3 | | | | | | | | | | | | | | | | | | | | |
| | 5.5 | | | | | | | | | | | | | | | | | | | | |
| | 5.7 | | | | | | | | | | | | | | | | | | | | |
| | 5.9 | | | | | | | | | | | | | | | | | | | | |

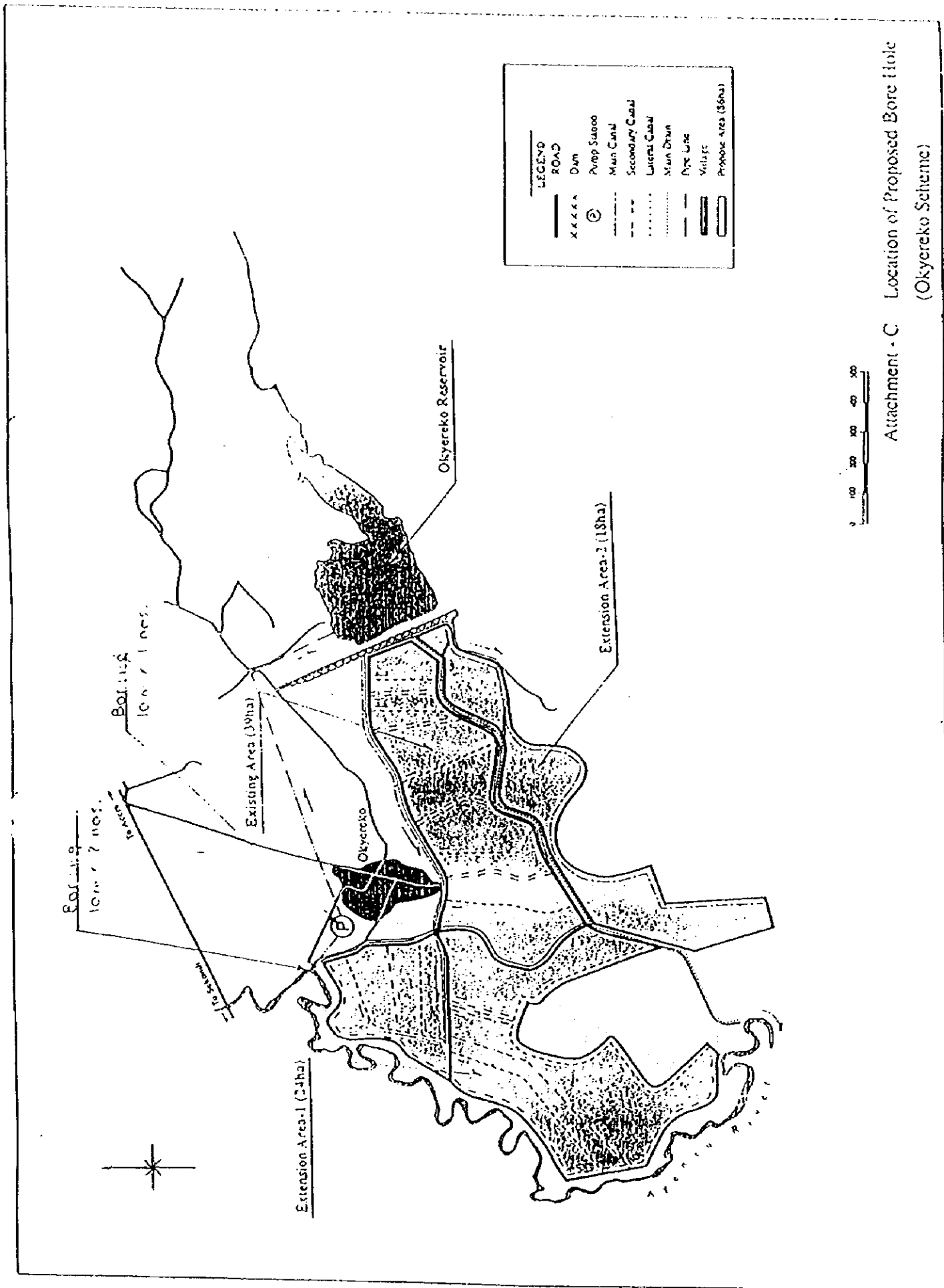
Boring terminated at 5.88 m

5.11 Survey Point (1/3)



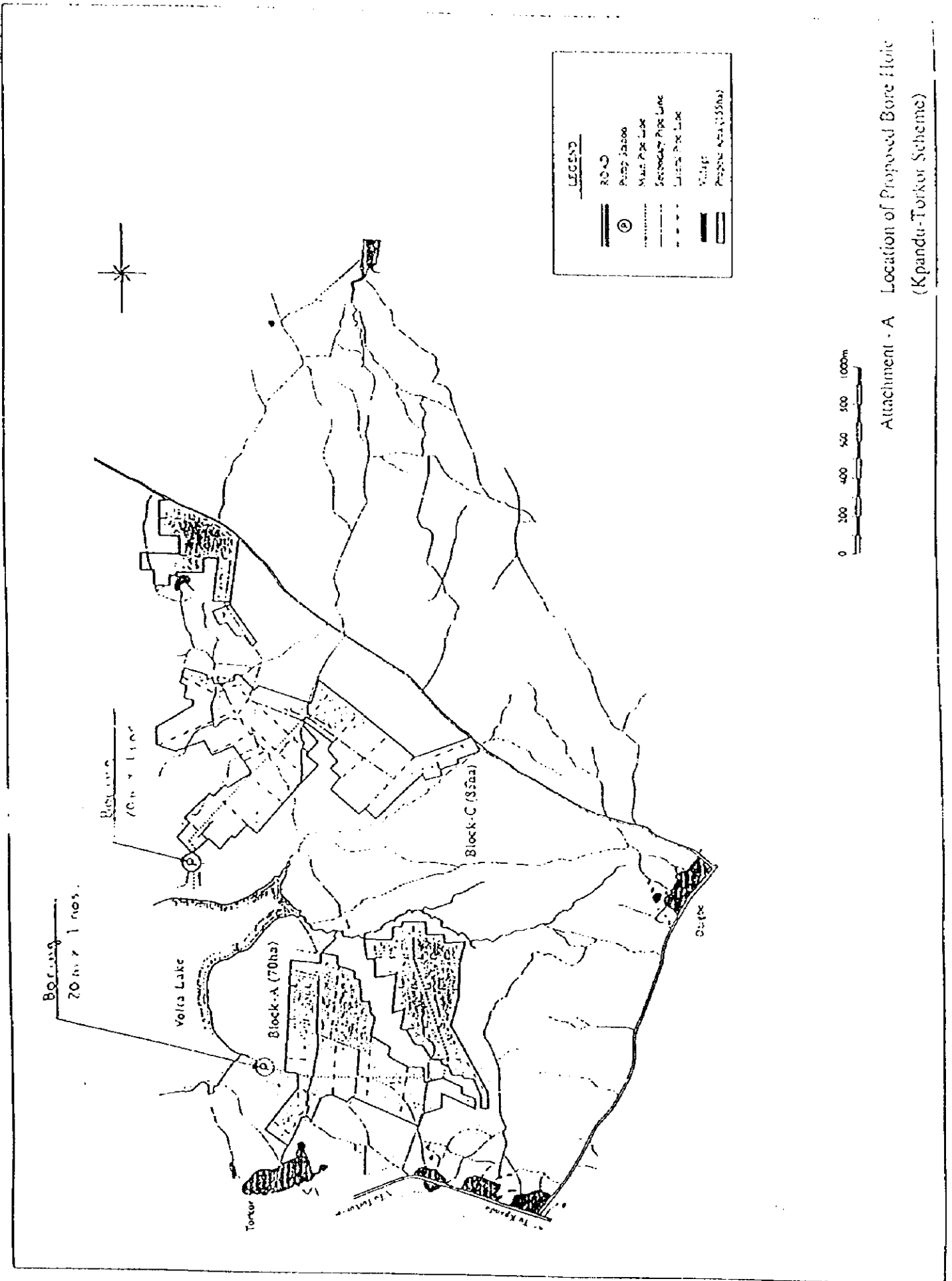
Attachment - B Location of Proposed Bore Hole (Mankessim Scheme)

5.12 Survey Point (2/3)



Attachment - C Location of Proposed Bore Hole (Okyereko Scheme)

5.13 Survey Point (3/3)



Attachment - A Location of Proposed Bore Hole (Kpandu-Torok Scheme)

6. *References*

6. References

| No. | Name of Documents | Year Issued | Publisher |
|-----|--|-------------|---|
| 1 | Kpong Irrigation Project Volume 2 Contract Nr KR1 Irrigation and drainage works | Jun-1994 | Irrigation Development Authority |
| 2 | Kpong Irrigation Project Volume 2 Contract Nr KR1 Rehabilitation of Buildings and Services - Astsuare | Mar-1996 | Irrigation Development Authority |
| 3 | Kpong Irrigation Project Volume 4 Contract Nr KR2 Rehabilitation of Building and Services - Asutsuare | Aug-1993 | Irrigation Development Authority |
| 4 | Kpong Irrigation Project Volume 2A Contract Nr KR2 Rehabilitation of Building and Services - Asutsuare | Mar-1996 | Irrigation Development Authority |
| 5 | Kumasi - Paga Road Rehabilitation Project Contract Documents | Mar-1995 | Ministry of Road and Highways |
| 6 | PUBLIC INVESTMENT PROGRAMME 1996 - 1998 VOLUME I PROJECT PROFILES AND SUMMARY TABLES MAIN REPORT | Jun-1996 | Ministry of Finance |
| 7 | PUBLIC INVESTMENT PROGRAMME 1994 - 1996 VOLUME 2.1 AGRICULTURE | Jun-1996 | Ministry of Finance |
| 8 | An Official Handbook of GHANA | -1991 | Information Services Department |
| 9 | STAFF APPRAISAL REPORT REPUBLIC OF GHANA NATIONAL AGRICULTURAL EXTENSION PROJECT | Feb-1992 | The World Bank |
| 10 | STAFF APPRAISAL REPORT REPUBLIC OF GHANA AGRICULTURAL SECTOR INVESTMENT PROJECT | Nov-1993 | The World Bank |
| 11 | Demographic and Health Survey 1993 | Dec-1994 | Ghana Static Service |
| 12 | ANALYSIS OF DEMOGRAPHIC DATA VOLUME 1 PRELIMINARY ANALYSIS REPORTS | Jan-1995 | Ghana Static Service |
| 13 | ANALYSIS OF DEMOGRAPHIC DATA VOLUME 2 DETAILED ANALYSIS REPORTS | Apr-1995 | Ghana Static Service |
| 14 | 1984 POPULATION CENSUS OF GHANA DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS | -1987 | Ghana Static Service |
| 15 | 1985 POPULATION CENSUS OF GHANA DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS | -1987 | Ghana Static Service |
| 16 | 1986 POPULATION CENSUS OF GHANA DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS | -1987 | Ghana Static Service |
| 17 | Exchange Rate | | Stanchart GH Ltd |
| 18 | Schedule of Rates for Building Works | Apr-1997 | Architectural and Engineering Services Limited |
| 19 | Basic Prices of Materials | Apr-1997 | Achitectural & Engineering Services Limited |
| 20 | Consumer Price Index Numbers | | Ghana Static Service |

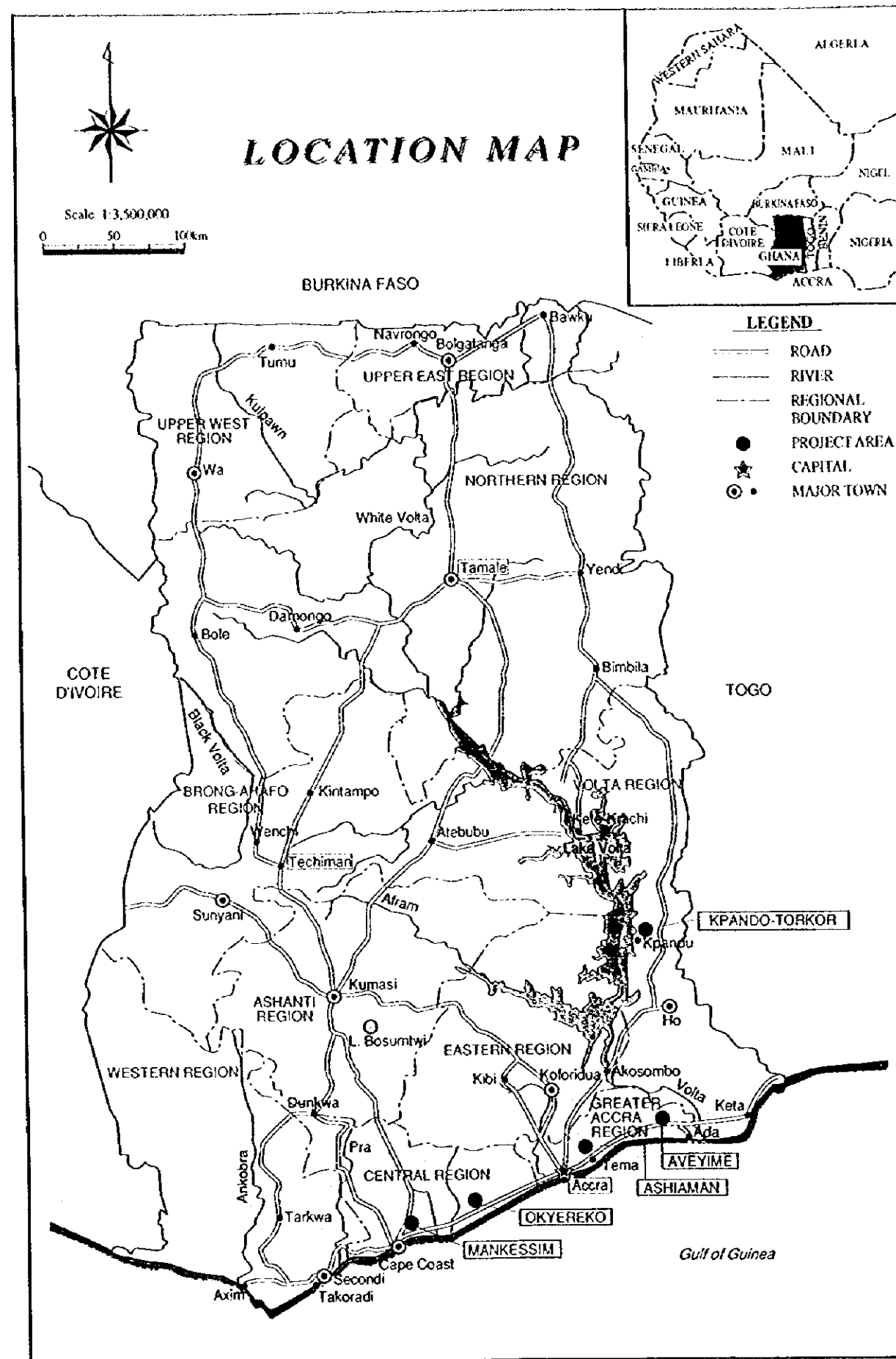
7. Basic Design Drawing

LIST OF BASIC DESIGN DRAWINGS

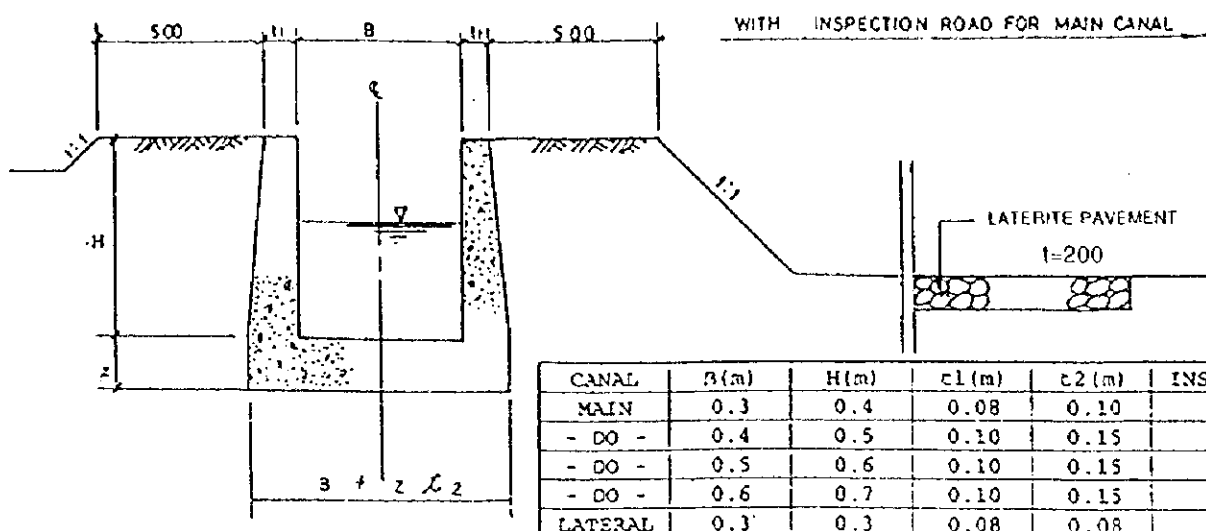
| Plate No. | Drawing No. | Title |
|----------------------------------|-------------|---|
| I. GENERAL | | |
| 1 | GN-1 | LOCATION MAP |
| 2 | GN-2 | TYPICAL SECTIONS OF FLUME, DRAIN AND ROAD |
| 3 | GN-3 | TURNOUT |
| 4 | GN-4 | DROP |
| 5 | GN-5 | FIELD INLET |
| 6 | GN-6 | CULVERT, TYPE-A & B |
| 7 | GN-7 | CROSS DRAIN, TYPE-A & B |
| 8 | GN-9 | TYPICAL LAYOUT OF FARM PLOT AND GREEN BELT |
| 9 | GN-10 | PROJECT OFFICE |
| 10 | GN-11 | DRY YARD AND SORTER HOUSE |
| 11 | GN-12 | STORE HOUSE |
| 12 | GN-13 | GARAGE |
| II. ASHAIMAN PROJECT | | |
| 13 | AS-1 | PROJECT LAYOUT MAP |
| 14 | AS-2 | PROJECT LAYOUT MAP |
| 15 | AS-3 | DIAGRAM FOR IRRIGATION AND DRAINAGE SYSTEM |
| 16 | AS-4 | PROFILE OF MAIN IRRIGATION CANAL |
| 17 | AS-5 | PROFILE OF MAIN DRAIN |
| 18 | AS-6 | TURNOUT No.7 ON THE MAIN CANAL |
| 19 | AS-7 | CHUTE |
| 20 | AS-8 | CAUSEWAY |
| III. AVEYIME PROJECT | | |
| 21 | AV-1 | PROJECT LAYOUT MAP |
| 22 | AV-2 | DIAGRAM FOR IRRIGATION AND DRAINAGE SYSTEM |
| 23 | AV-3 | GENERAL LAYOUT FOR PUMP STATION |
| 24 | AV-4 | PUMP STATION |
| 25 | AV-5 | MAIN PIPELINE |
| 26 | AV-6 | PROFILE OF MAIN IRRIGATION CANAL AND SECONDARY CANAL NO.6 |
| 27 | AV-7 | PROFILE OF LEFT MAIN DRAIN |
| 28 | AV-8 | PROFILE OF RIGHT MAIN DRAIN |
| 29 | AV-9 | OUTLET AND DISTRIBUTION BOX FOR MAIN IRRIGATION CANAL |
| 30 | AV-10 | TURNOUT No.1 ON THE MAIN CANAL |
| IV. KPANDO-TORKOR PROJECT | | |
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| 32 | KP-2 | DIAGRAM FOR IRRIGATION AND DRAINAGE SYSTEM |
| 33 | KP-3 | GENERAL LAYOUT FOR PUMP STATION AND HEADRACE |
| 34 | KP-4 | PUMP STATION (1/2) |
| 35 | KP-5 | PUMP STATION (2/2) |
| 36 | KP-6 | SMALL PUMP STATION A |
| 37 | KP-7 | SMALL PUMP STATION B |
| 38 | KP-8 | SMALL PUMP STATION C |
| 39 | KP-9 | PROFILE OF MAIN PIPELINE |
| 40 | KP-10 | PROFILE OF MAIN CANAL |
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| 42 | MA-2 | DIAGRAM FOR IRRIGATION AND DRAINAGE SYSTEM |
| 43 | MA-3 | PUMP STATION |
| VI. OKYEREKO PROJECT | | |

LIST OF BASIC DESIGN DRAWINGS

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|---------------------------|-------------|---|
| 44 | OK-1 | PROJECT LAYOUT MAP |
| 45 | OK-2 | DIAGRAM FOR IRRIGATION AND DRAINAGE SYSTEM |
| 46 | OK-3 | GENERAL LAYOUT OF INTAKE WEIR |
| 47 | OK-4 | PLAN OF INTAKE WEIR |
| 48 | OK-5 | TYPICAL SECTION OF INTAKE WEIR |
| 49 | OK-6 | SIPHON OF INLET CHANNEL |
| 50 | OK-7 | GENERAL LAYOUT OF PUMP STATION |
| 51 | OK-8 | PUMP STATION |
| 52 | OK-9 | PROFILE OF MAIN PIPELINE |
| 53 | OK-10 | OUTLET AND CHUTE |
| 54 | OK-11 | PROFILE OF LEFT MAIN IRRIGATION CANAL |
| 55 | OK-12 | PROFILE OF RIGHT MAIN IRRIGATION CANAL |
| 56 | OK-13 | PROFILE OF LEFT MAIN DRAIN |
| VII. BUILDING WORK | | |
| 57 | BW-1 | SITE PLAN FOR ARCHITECTURAL FACILITIES AT ACCRA |
| 58 | BW-2 | TRAINEE DORMITORY |
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| 60 | BW-4 | STAFF DORMITORY |
| 61 | BW-5 | SITE PLAN OF BUILDING FACILITIES AT ASHAIMAN |
| 62 | BW-6 | TRAINING FACILITIES |
| 63 | BW-7 | SITE PLAN OF BUILDING FACILITIES AT AVEYIME |
| 64 | BW-8 | SITE PLAN OF BUILDING FACILITIES AT KPANDO-TORKOR |
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| 66 | BW-10 | SITE PLAN OF BUILDING FACILITIES AT OKYEREKO |
| 67 | BW-11 | GUARD HOUSE AND GENERATOR HUT |

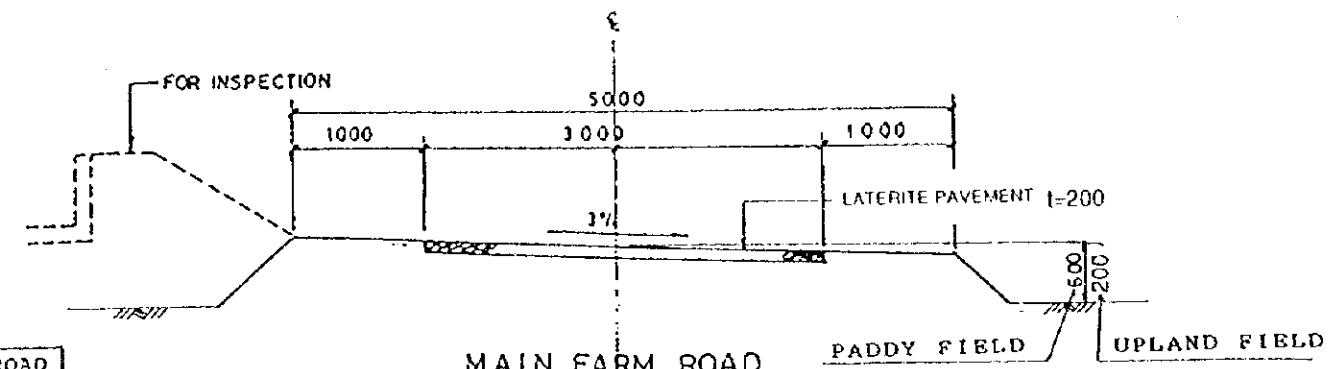


| | | | |
|---|----------|-------------|-------|
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| TITLE OF DRAWING General Location Map | | | |
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| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |

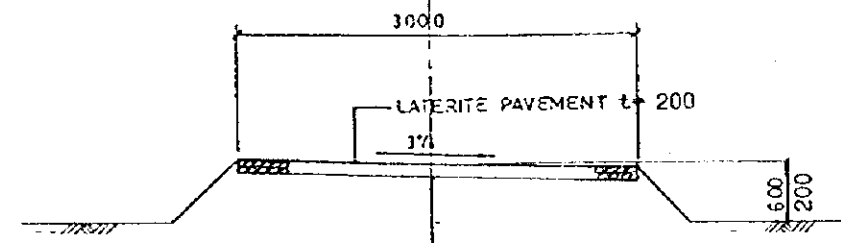


| CANAL | B(m) | H(m) | c1(m) | c2(m) | INSPECTION ROAD |
|---------|------|------|-------|-------|-----------------|
| MAIN | 0.3 | 0.4 | 0.08 | 0.10 | PROVIDED |
| - DO - | 0.4 | 0.5 | 0.10 | 0.15 | - DO - |
| - DO - | 0.5 | 0.6 | 0.10 | 0.15 | - DO - |
| - DO - | 0.6 | 0.7 | 0.10 | 0.15 | - DO - |
| LATERAL | 0.3 | 0.3 | 0.08 | 0.08 | NO |

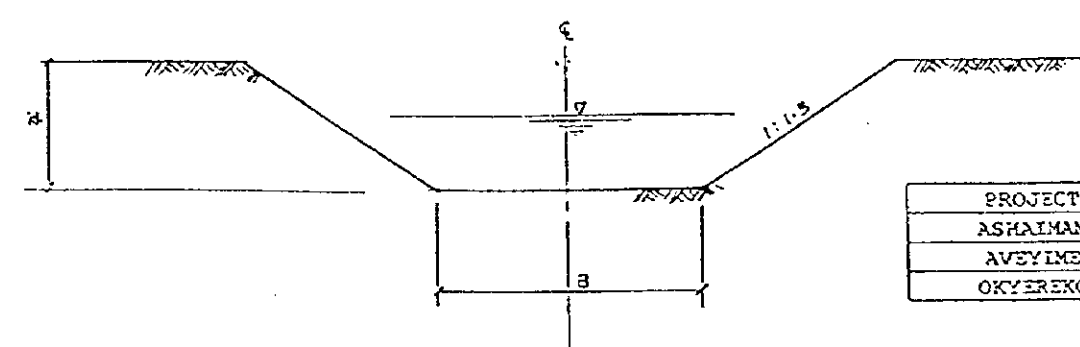
FLUME FOR IRRIGATION CANAL



MAIN FARM ROAD (INSPECTION ROAD)

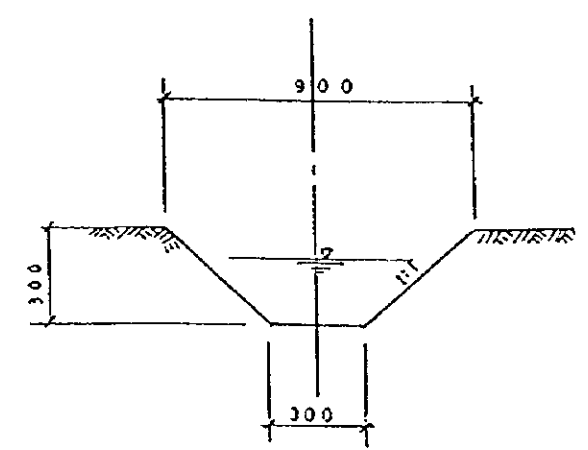
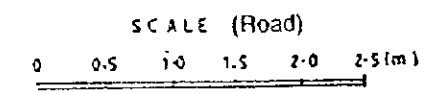
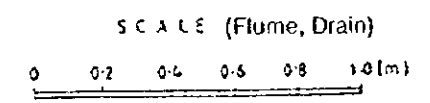


LATERAL FARM ROAD

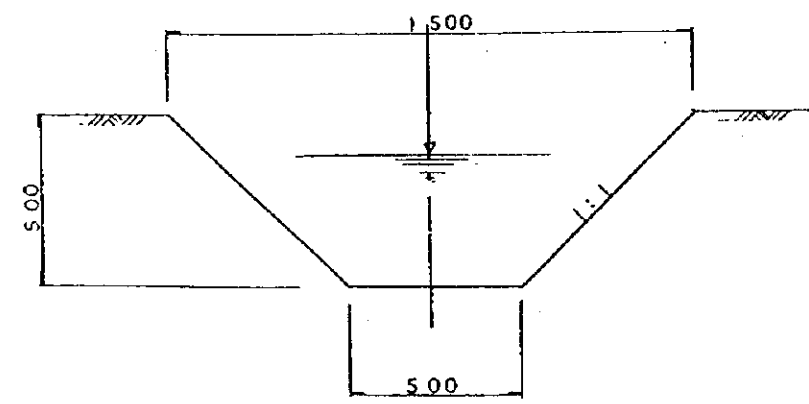


| PROJECT | B(m) | H(m) |
|----------|----------|---------|
| ASHAIMAN | 3.0-12.0 | 1.0-2.0 |
| AVSYIME | 4.0 | 2.0-2.0 |
| OKYEREXO | 3.0 | 1.0-2.0 |

MAIN / SECONDARY DRAINS

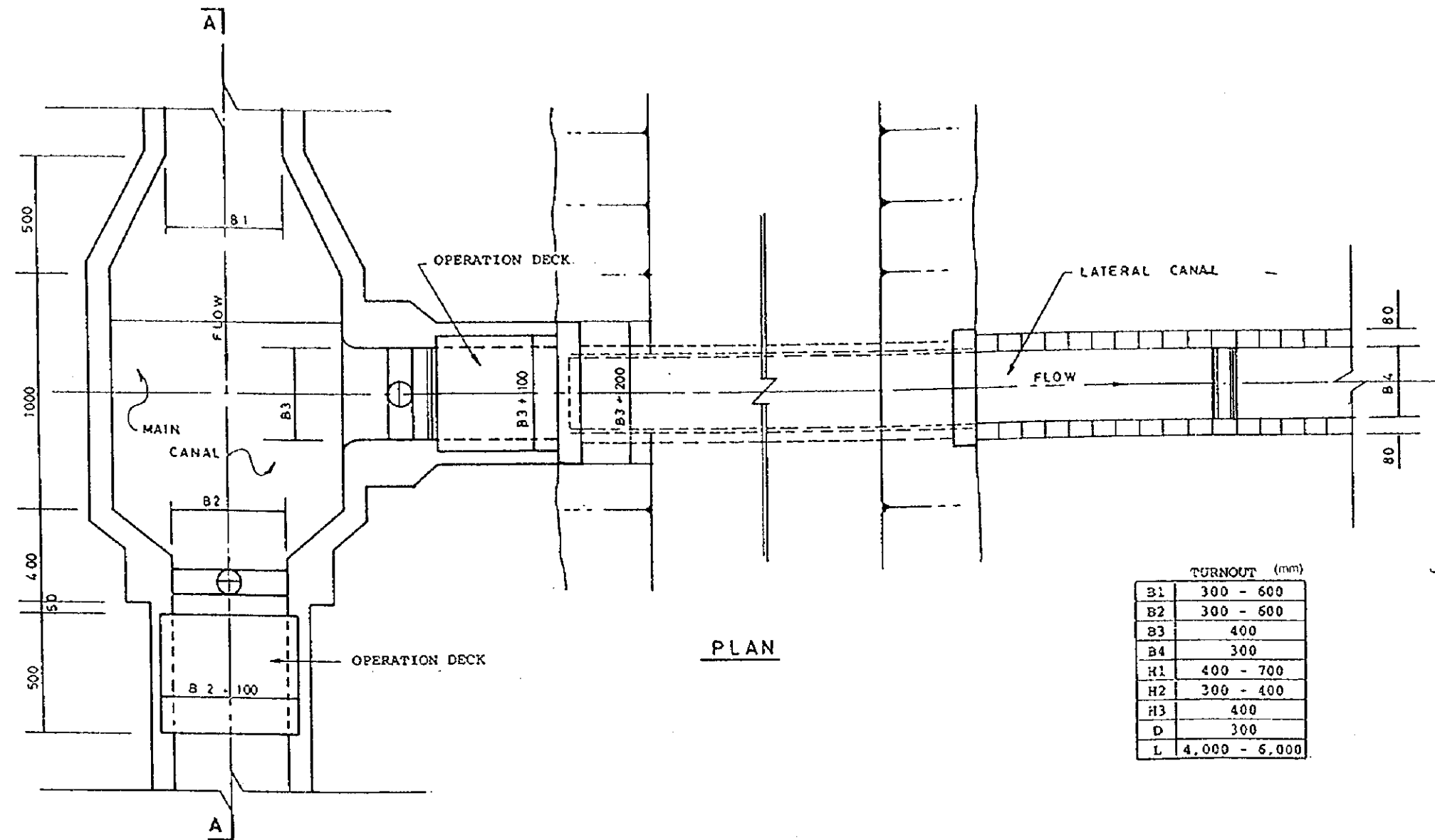


LATERAL DRAIN



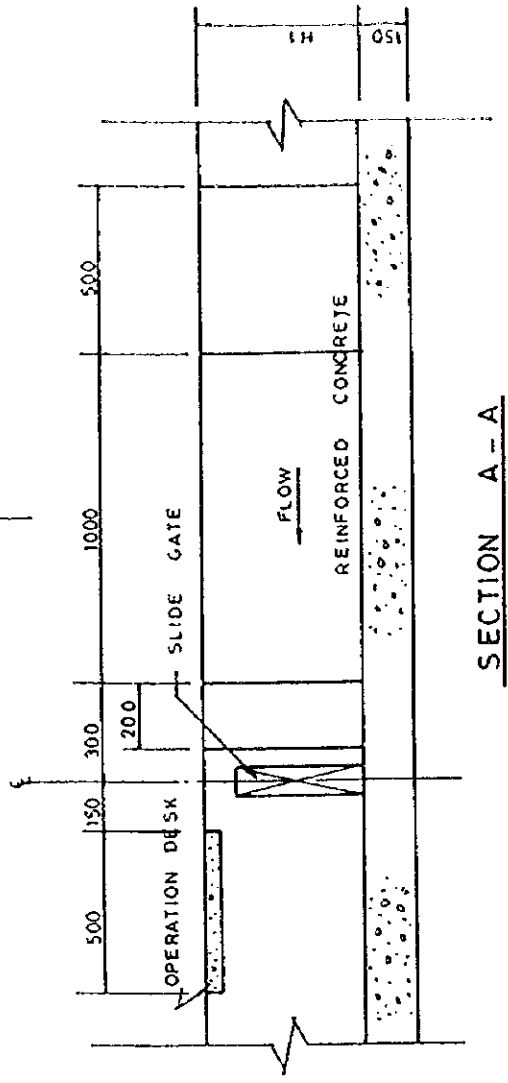
CATCH DRAIN

| | | | |
|--|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING General Typical Sections of Flume, Drain and Road | | | |
| DATE | MAR 1998 | DRAWING NO. | GN-02 |
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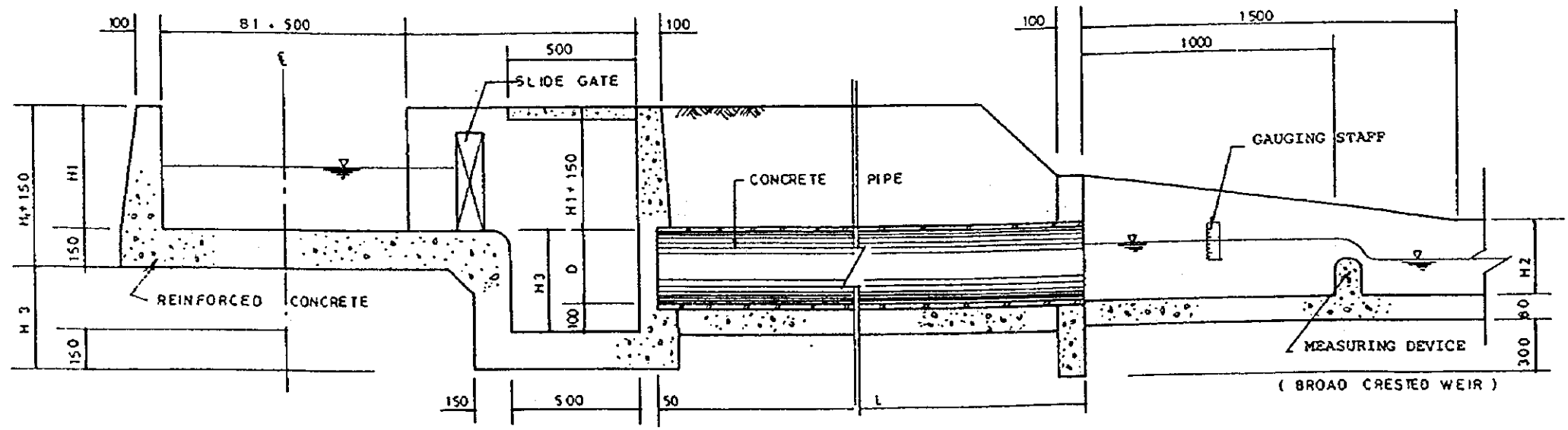


PLAN

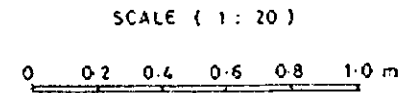
| TURNOUT (mm) | |
|--------------|---------------|
| B1 | 300 - 600 |
| B2 | 300 - 600 |
| B3 | 400 |
| B4 | 300 |
| H1 | 400 - 700 |
| H2 | 300 - 400 |
| H3 | 400 |
| D | 300 |
| L | 4,000 - 6,000 |



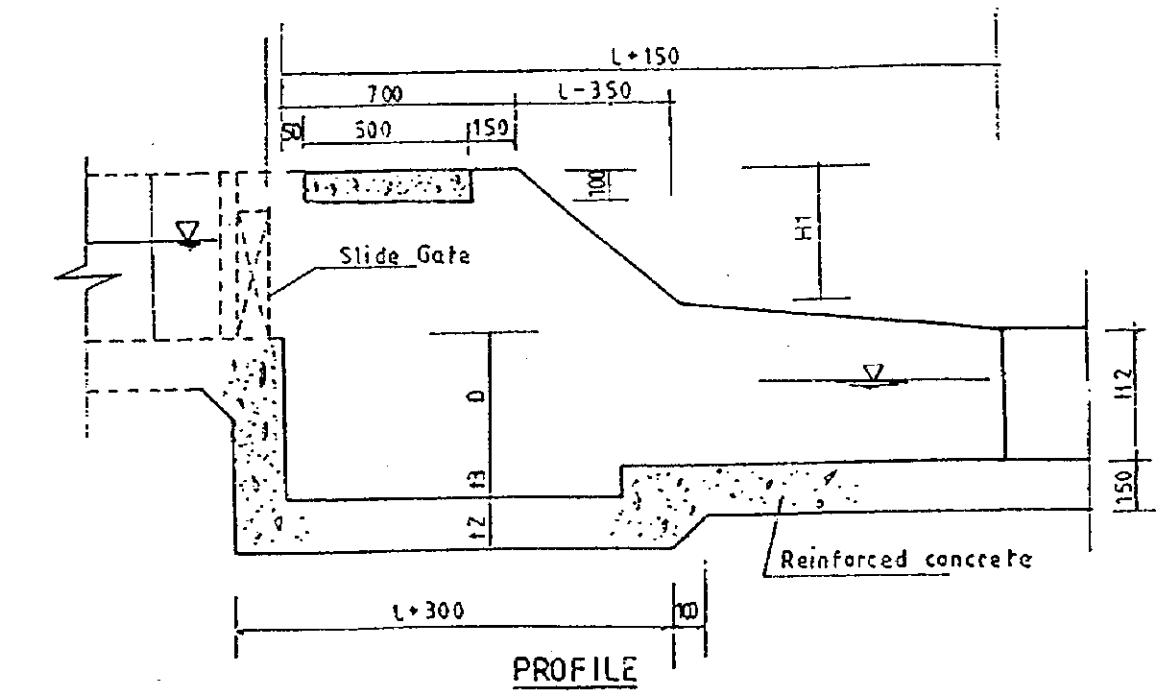
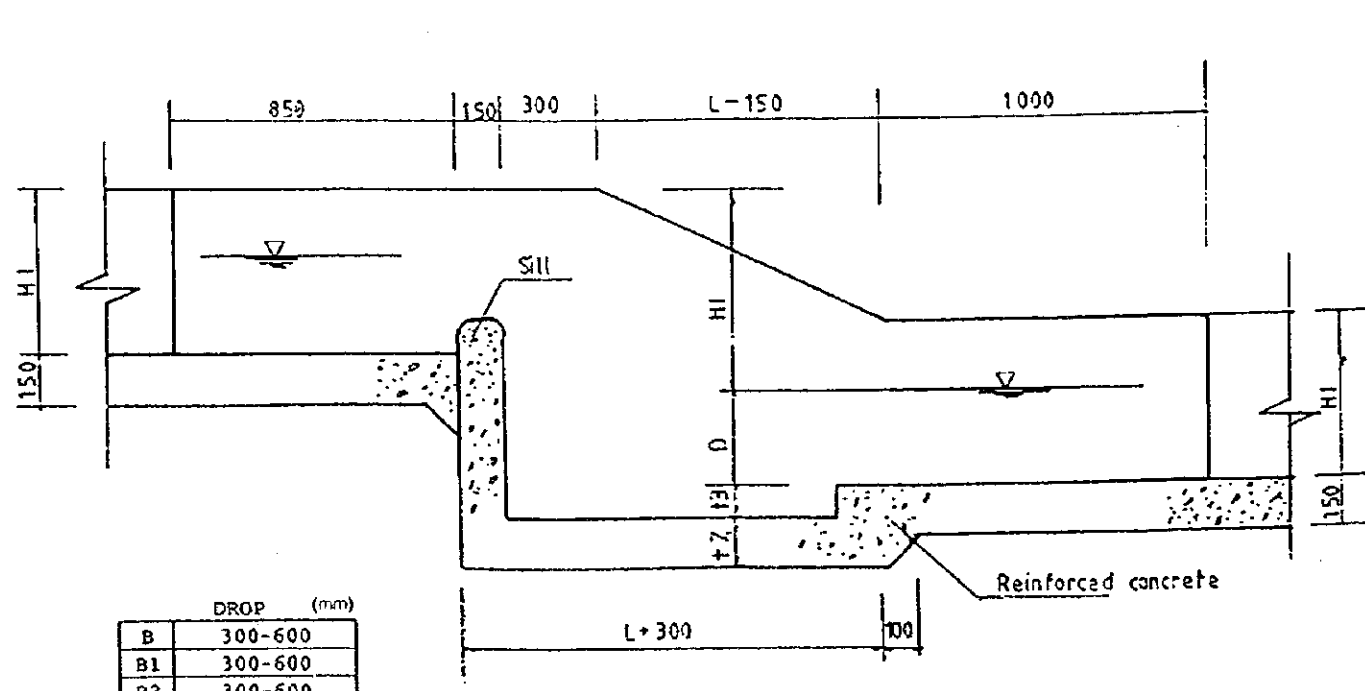
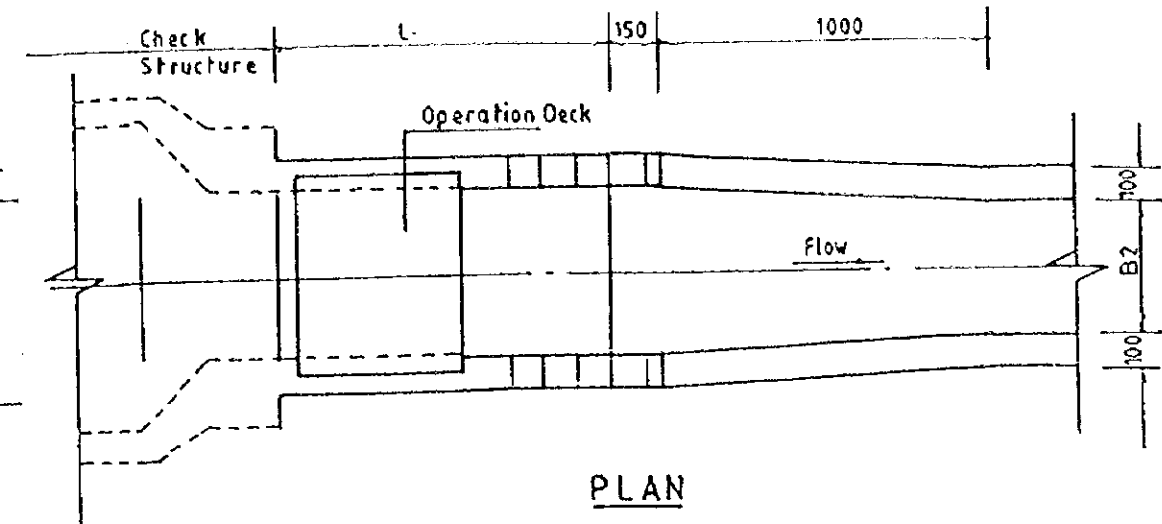
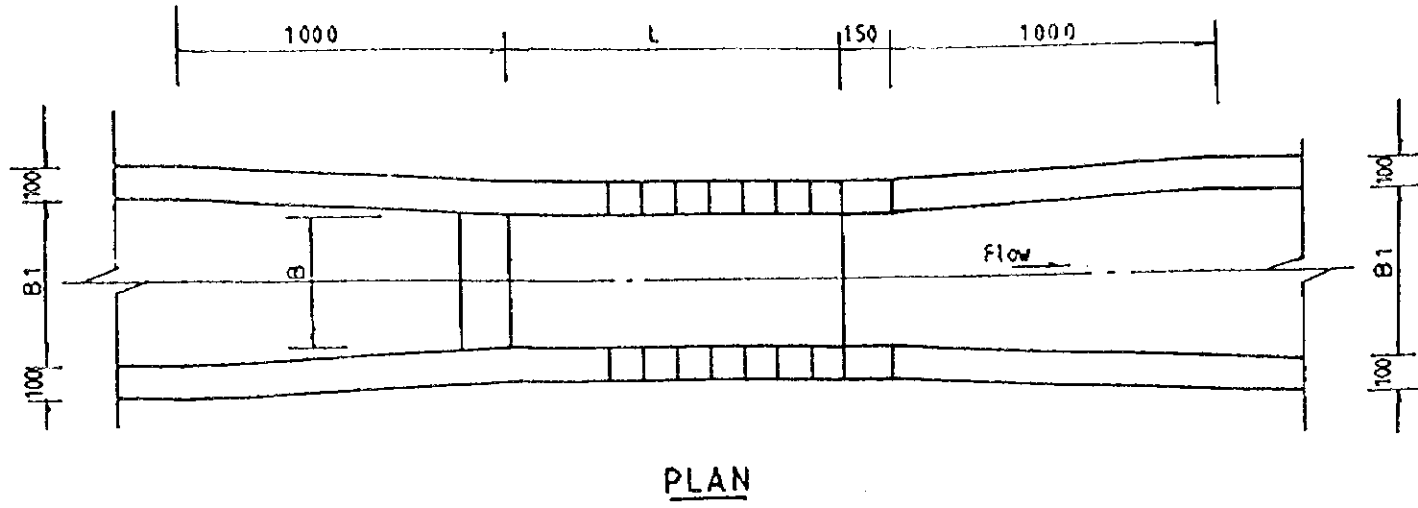
SECTION A - A



PROFILE

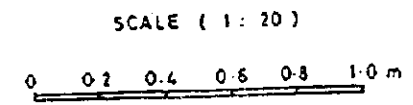


| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING | | | |
| General | | | |
| Turnout | | | |
| DATE | MAR 1998 | DRAWING NO. | GN-03 |
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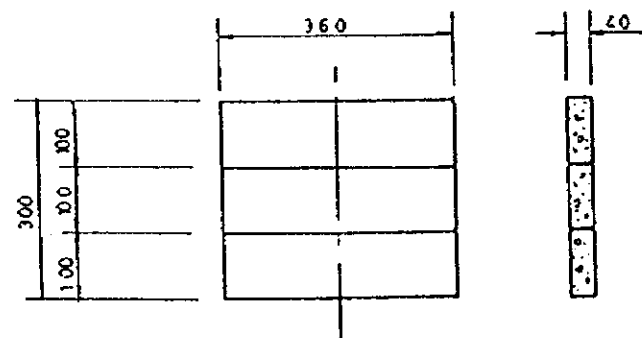
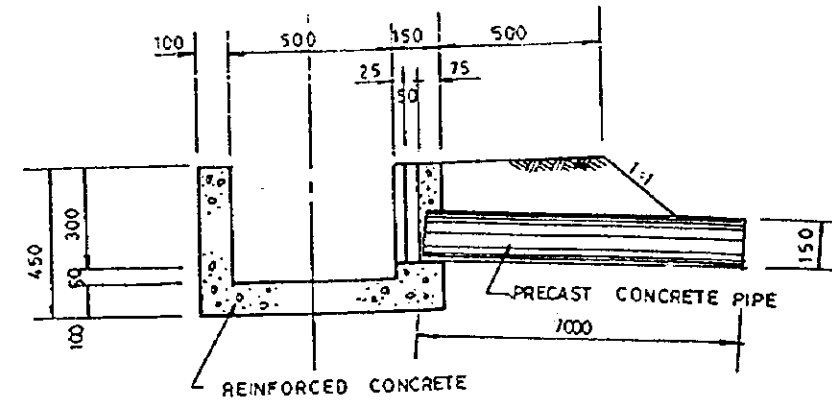
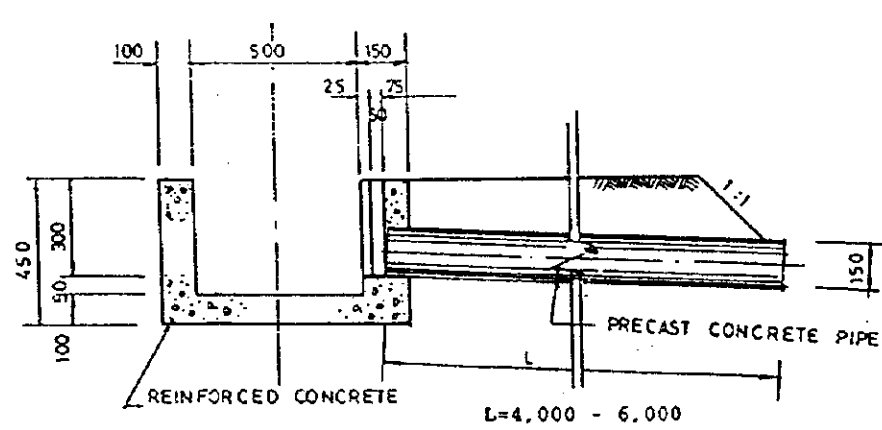
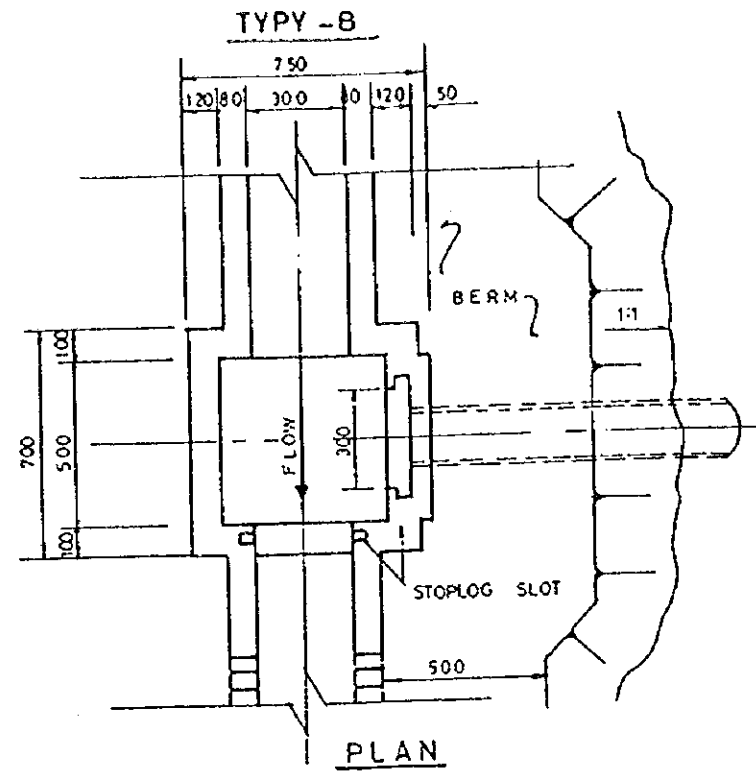
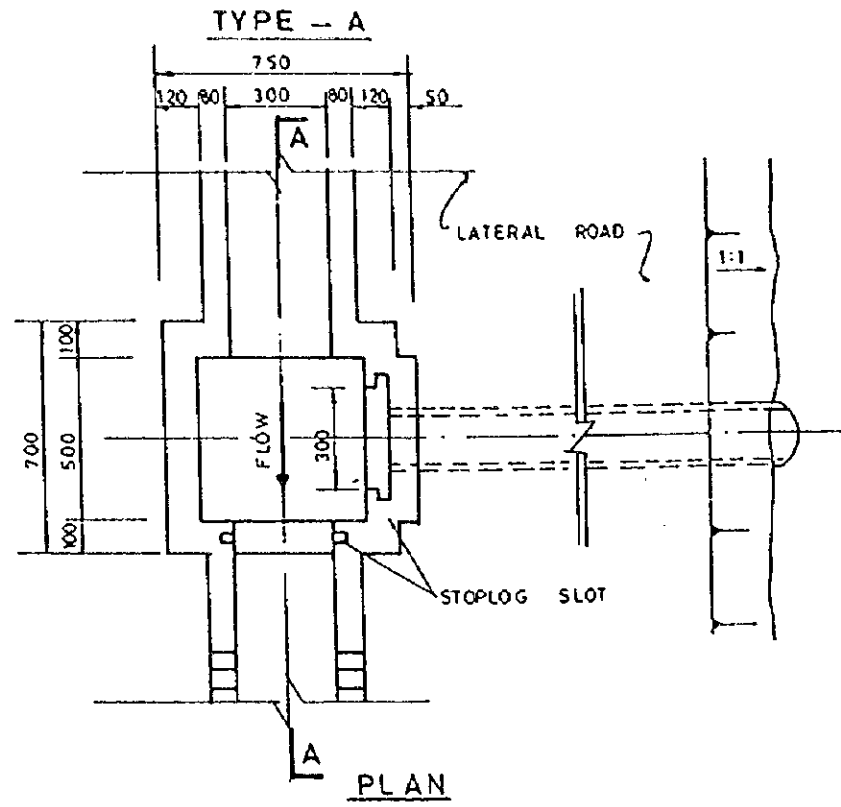


| | DROP (mm) |
|----|-------------|
| B | 300-600 |
| B1 | 300-600 |
| B2 | 300-600 |
| H1 | 400-700 |
| H2 | 400-700 |
| c2 | 150-200 |
| c3 | 100-200 |
| O | 300-1,000 |
| L | 1,000-1,500 |

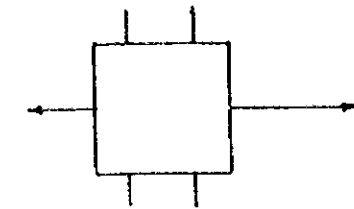
PROFILE



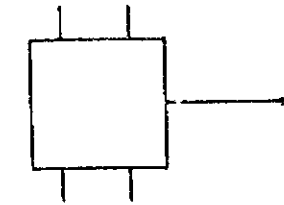
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|--|-------------|-------|--|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING General | | | |
| Drop | | | |
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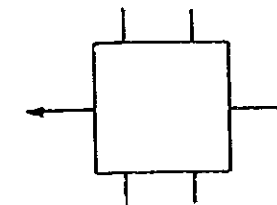
TYPY OF FIELD OUTLET



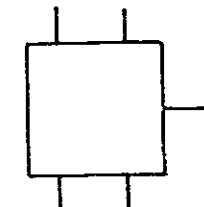
TYPE - A - 1



TYPE - A - 2

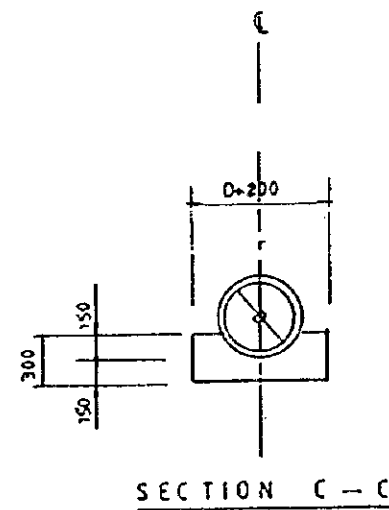
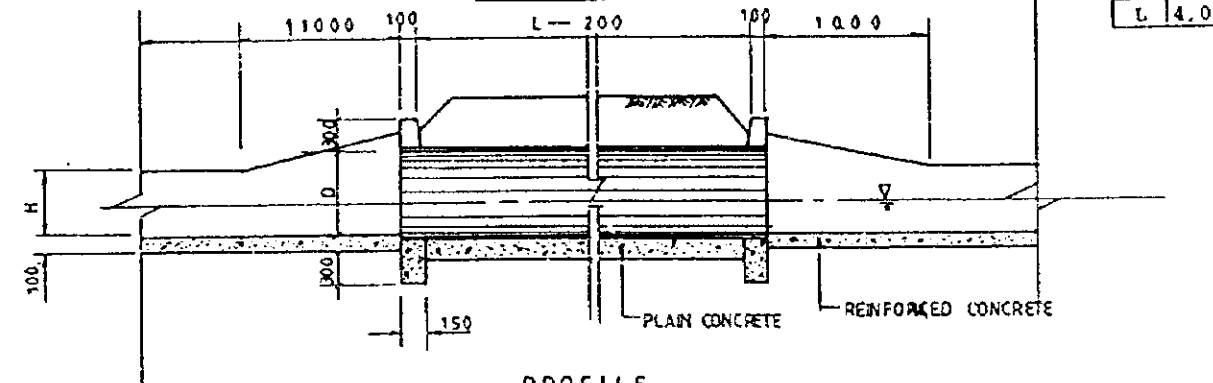
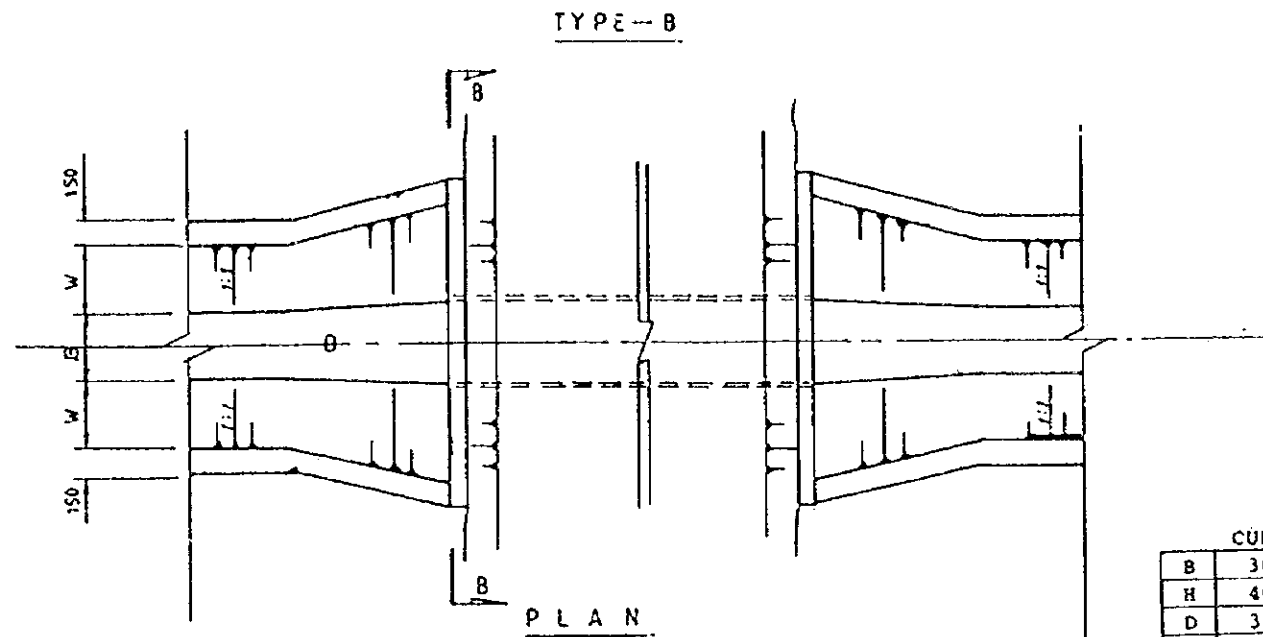
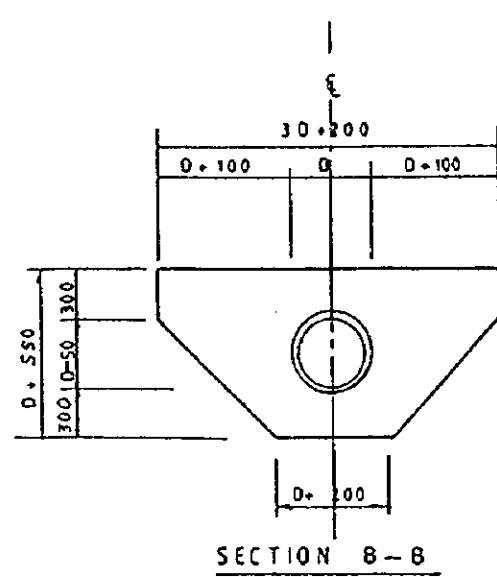
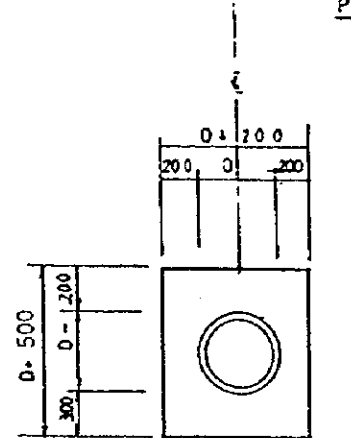
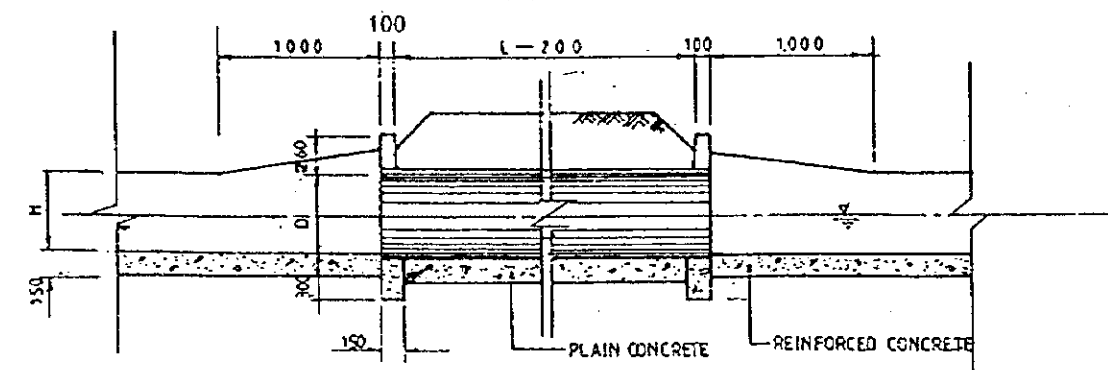
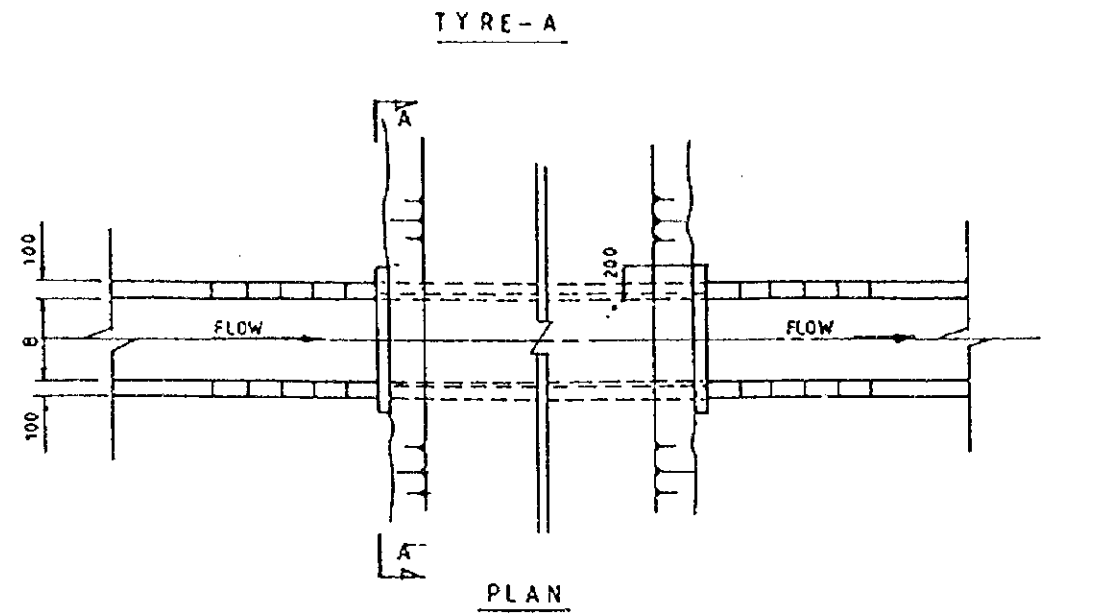


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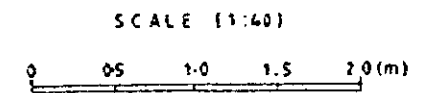


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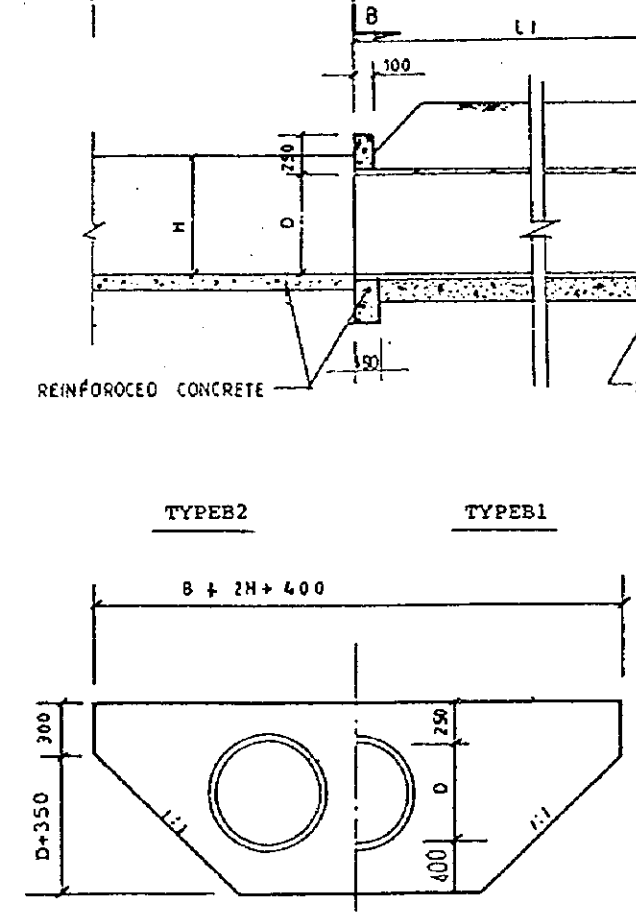
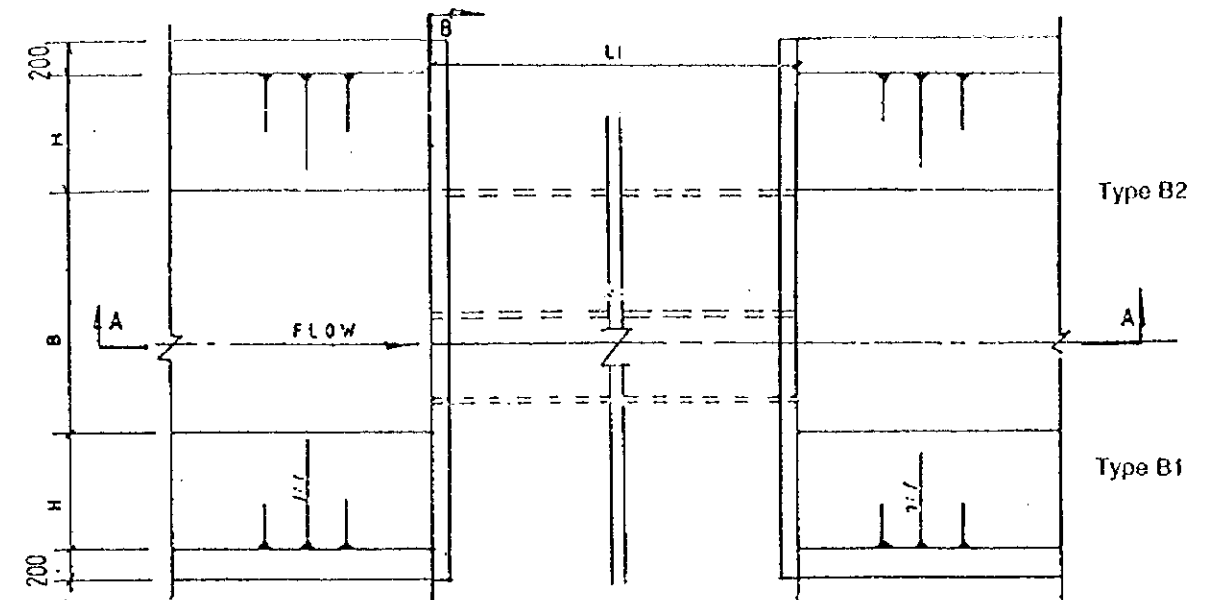
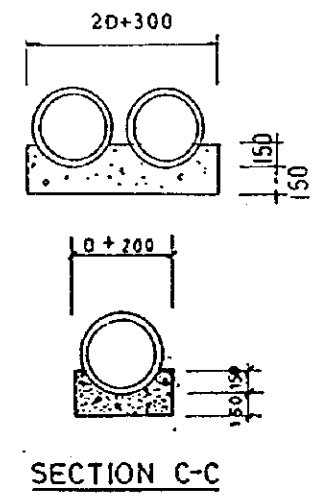
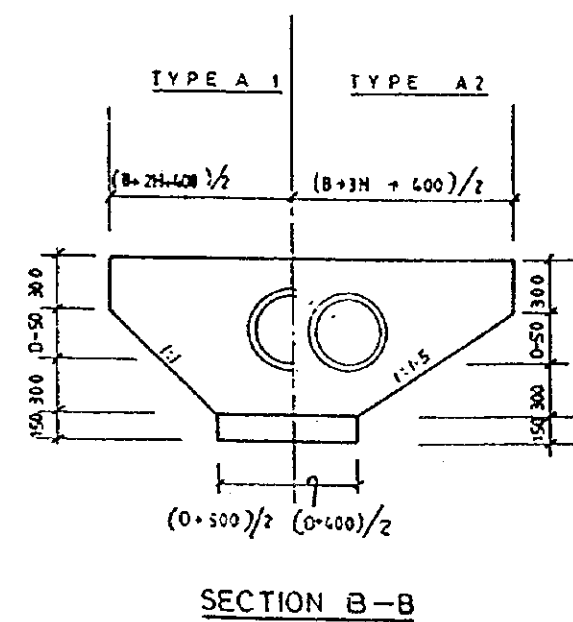
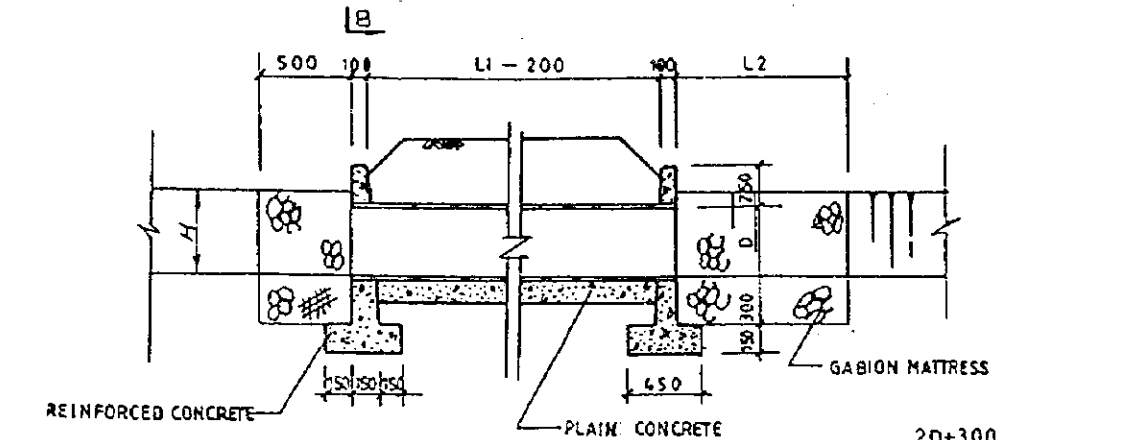
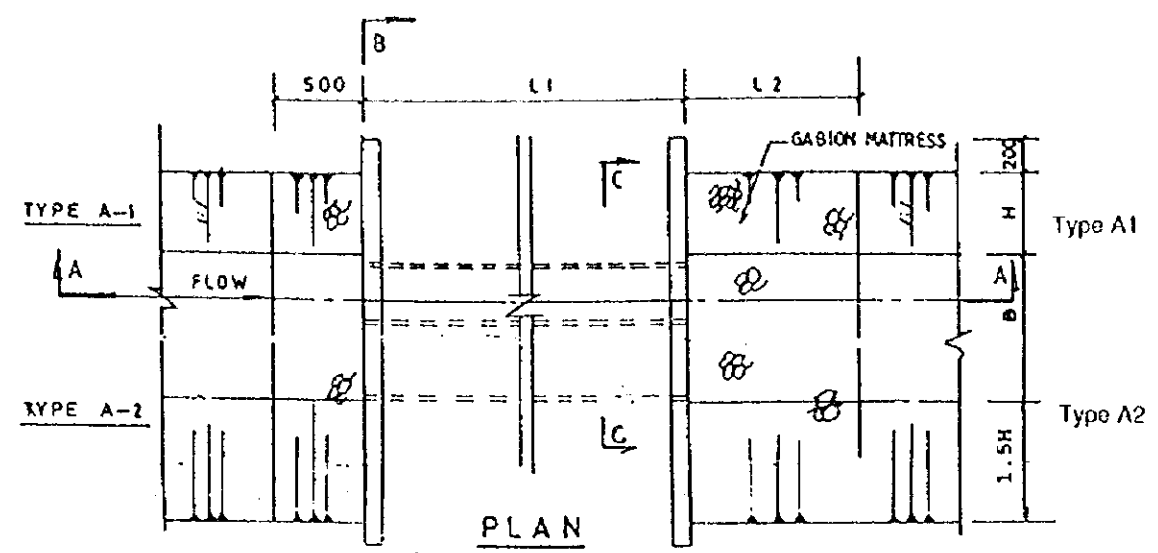
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|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING General Field Inlet | | | |
| DATE | MAR 1998 | DRAWING NO. | GN-05 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



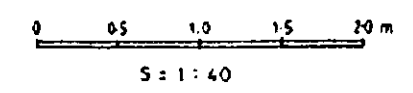
| CULVERT (mm) | |
|--------------|---------------|
| B | 300 - 600 |
| H | 400 - 700 |
| D | 300 - 600 |
| L | 4,000 - 6,000 |



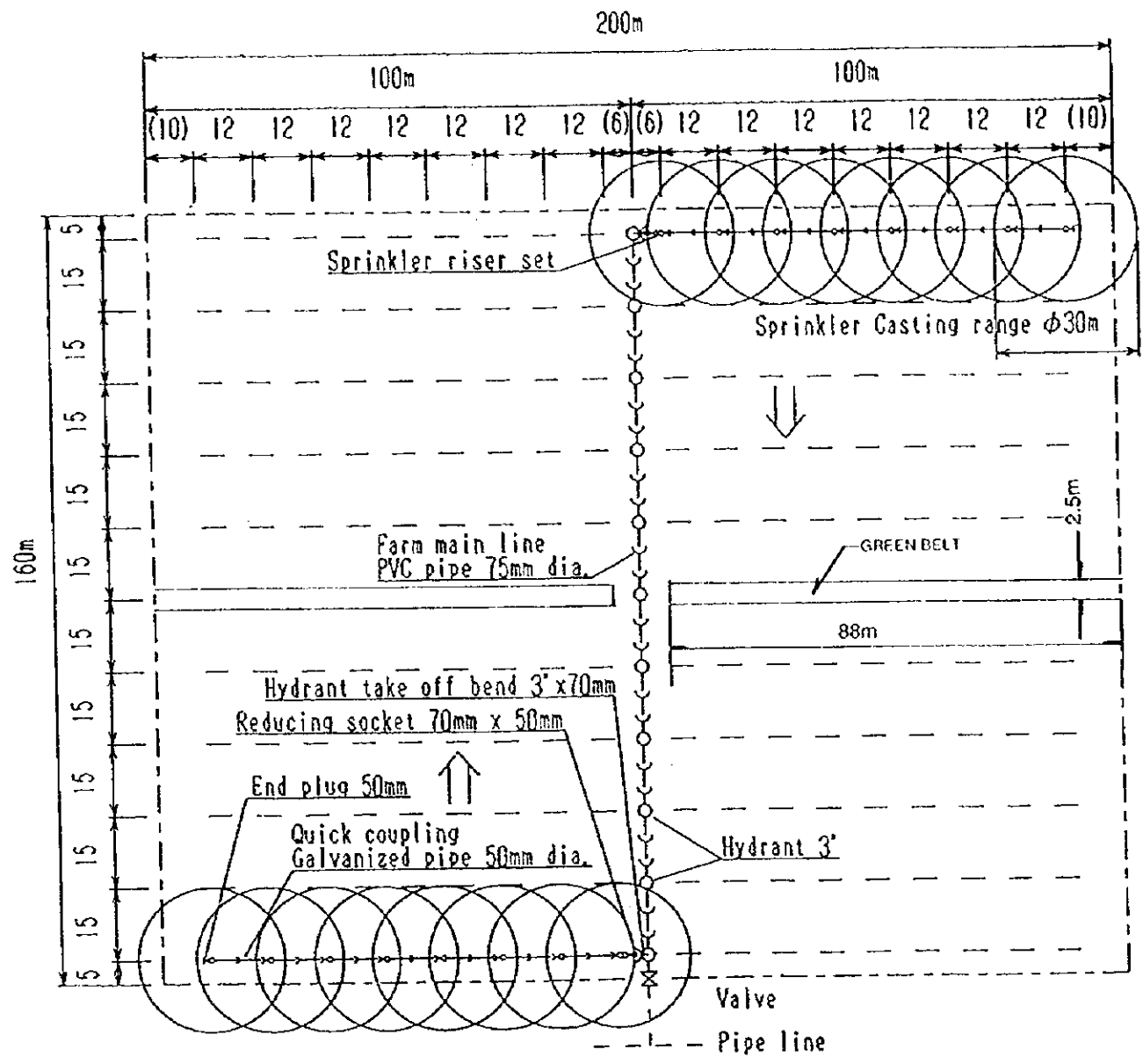
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|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING General Culvert, Type-A&-B | | | |
| DATE | MAR 1998 | DRAWING NO. | GN 06 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



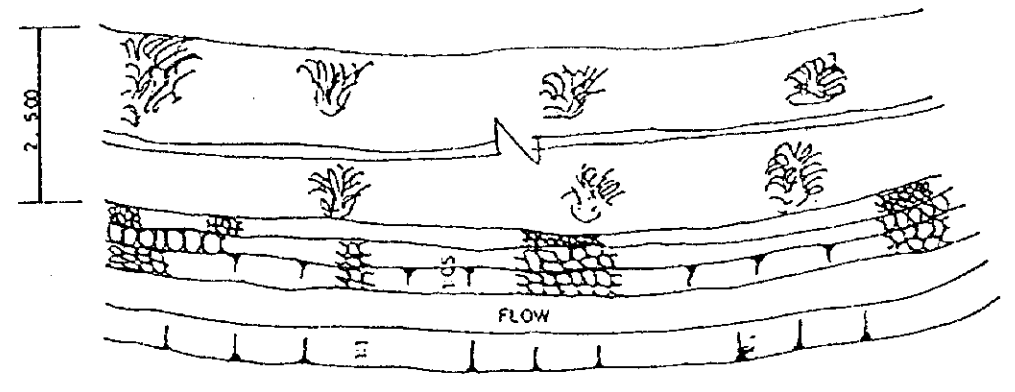
| CROSS DRAIN (mm) | | | |
|------------------|-------------|-------------|---|
| | TYPE-A | TYPE-B | |
| L1 | 4,000-6,000 | 4,000-6,000 | 0 |
| L2 | 1,000-3,000 | - | - |
| B | 300-4,000 | 300-1,000 | 0 |
| H | 300-1,000 | 600-1,000 | 0 |
| D | 300-900 | 600-1,000 | 0 |



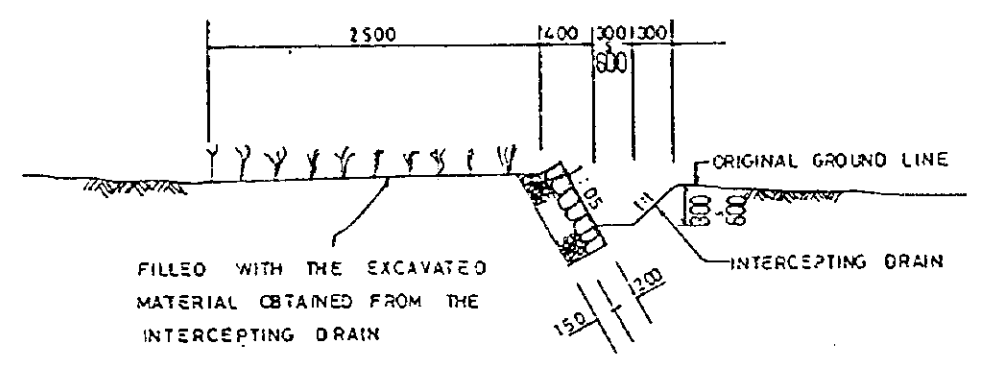
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|--|-------------|-------|
| THE REPUBLIC OF GHANA | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | |
| TITLE OF DRAWING General Cross Drain, Type-A & B | | |
| MAR 1998 | DRAWING NO. | GN-07 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | |



Irrigation material layout on a standard plot.



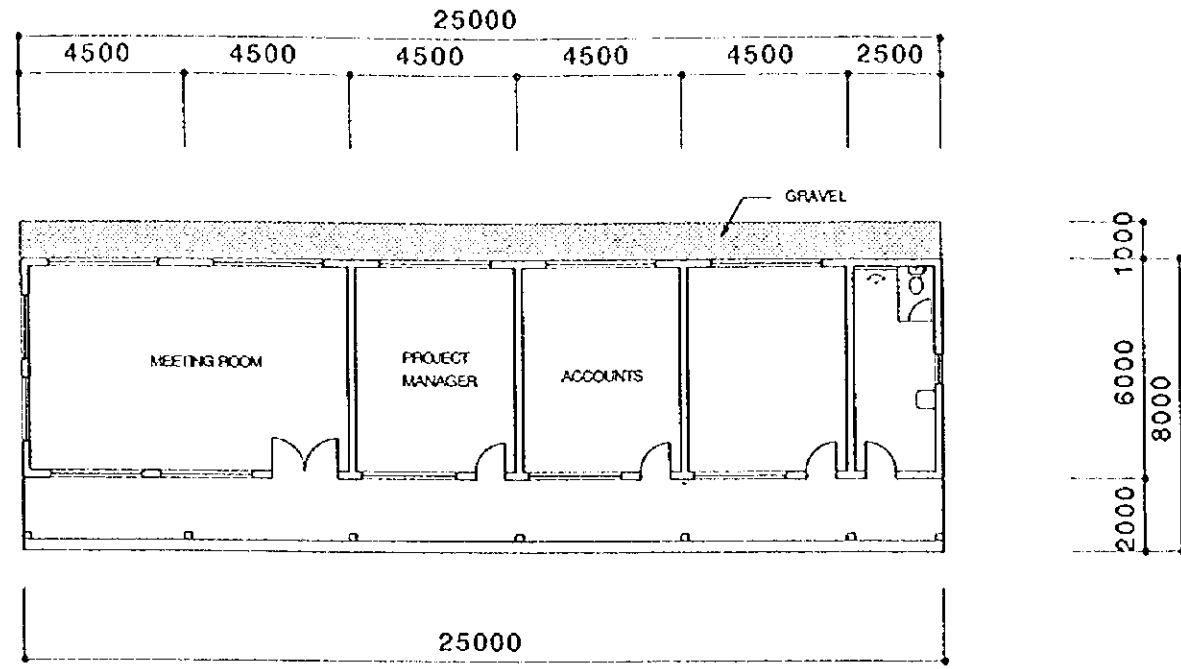
PLAN



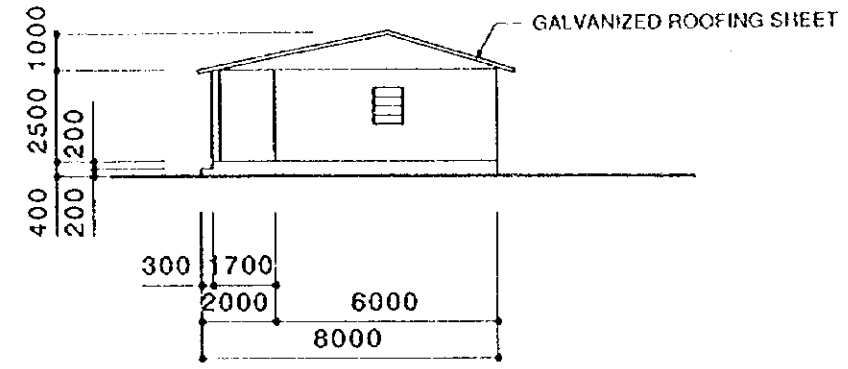
PROFILE

GREEN BELT

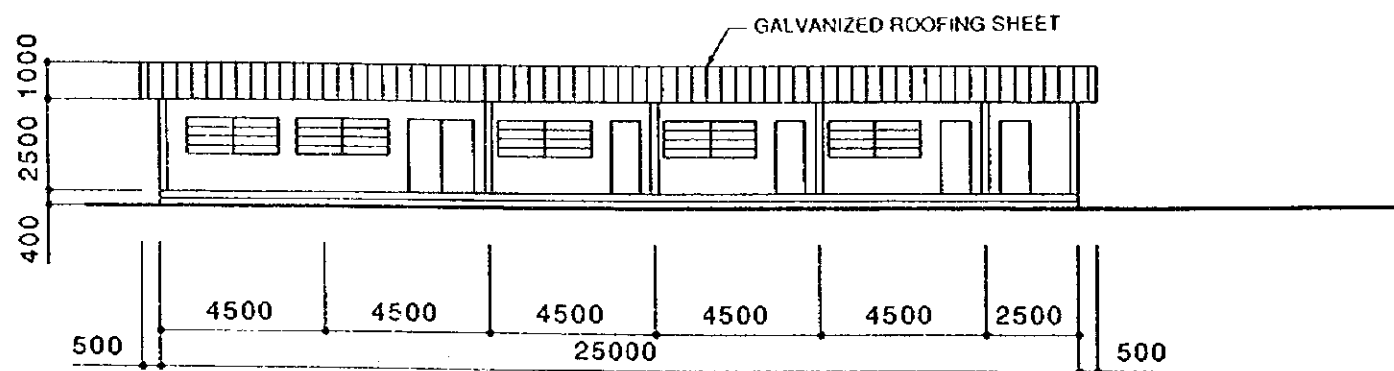
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| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING General Typical Layout of Farm Plot and Green Belt | | | |
| DATE | MAR 1998 | DRAWING NO. | GN 08 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



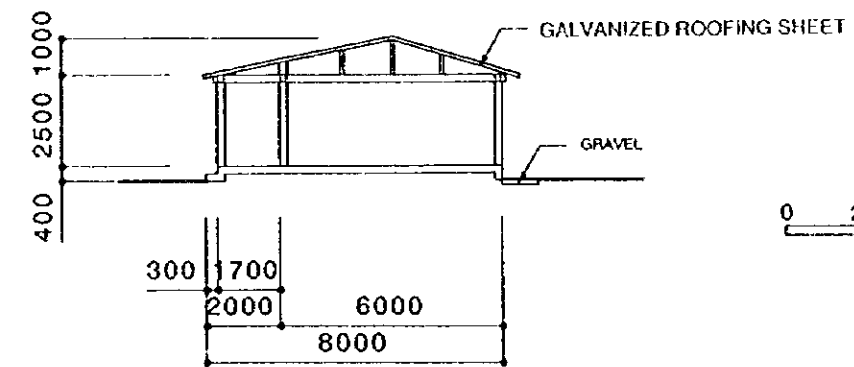
PLAN



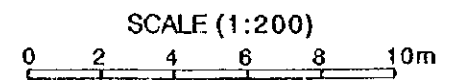
SITE ELEVATION



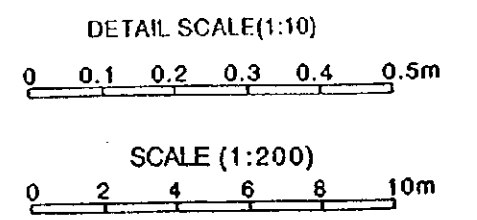
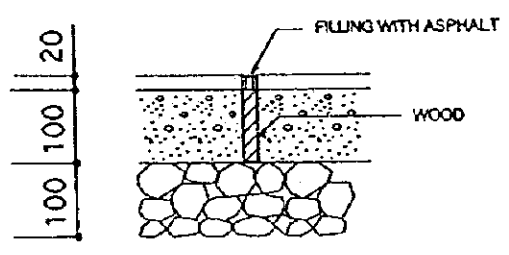
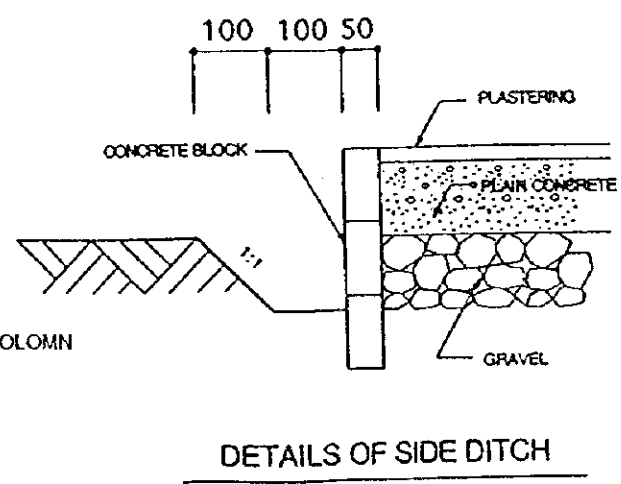
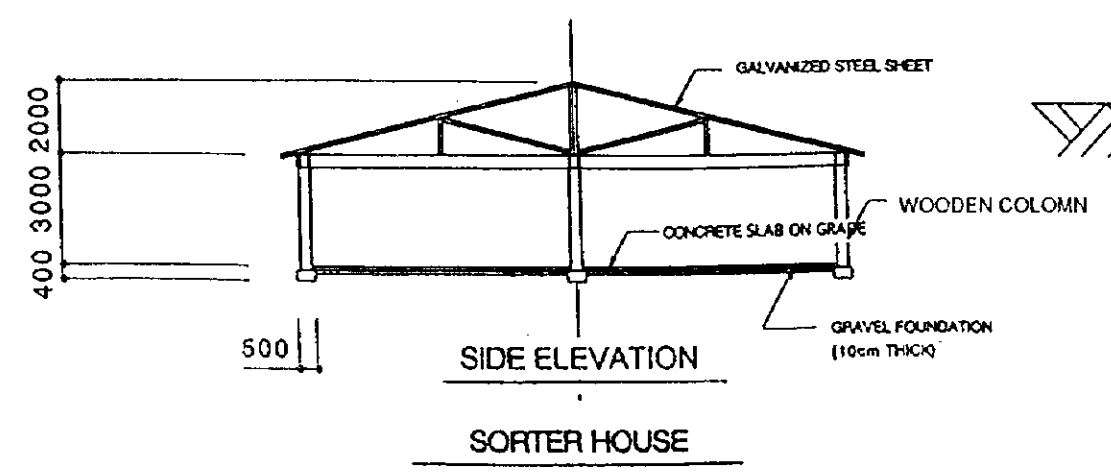
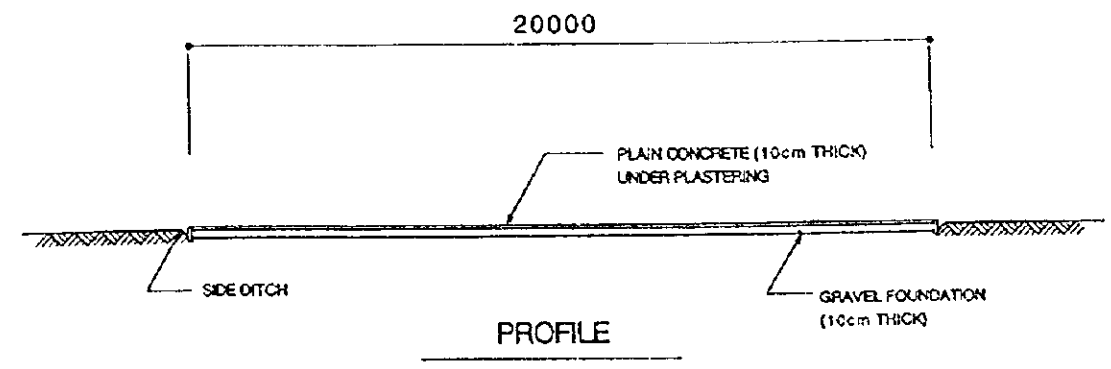
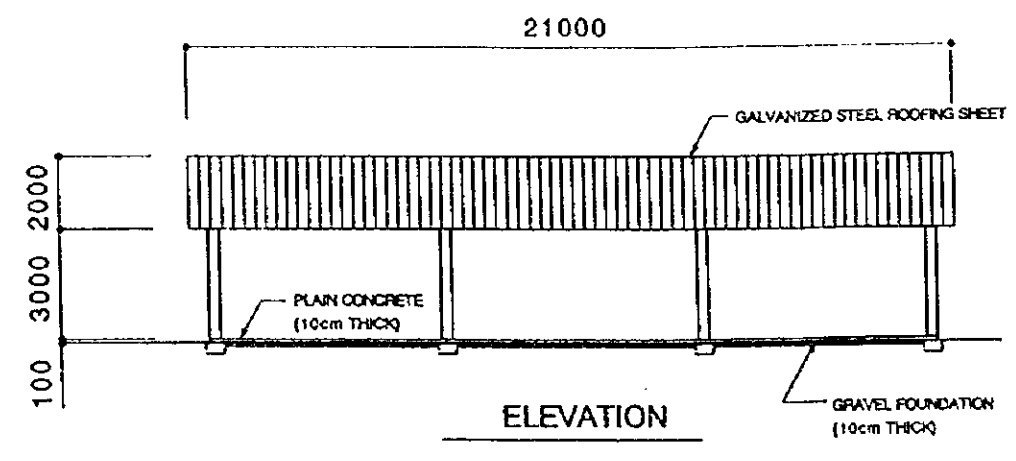
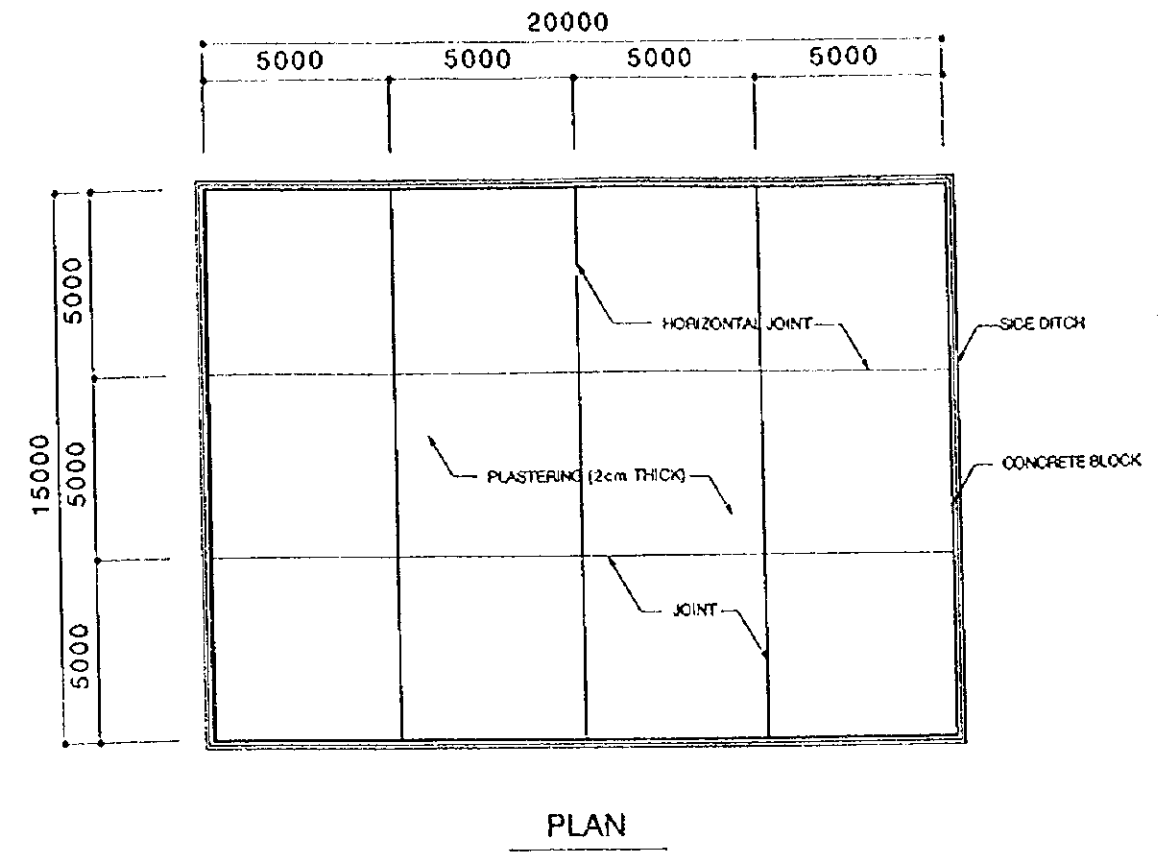
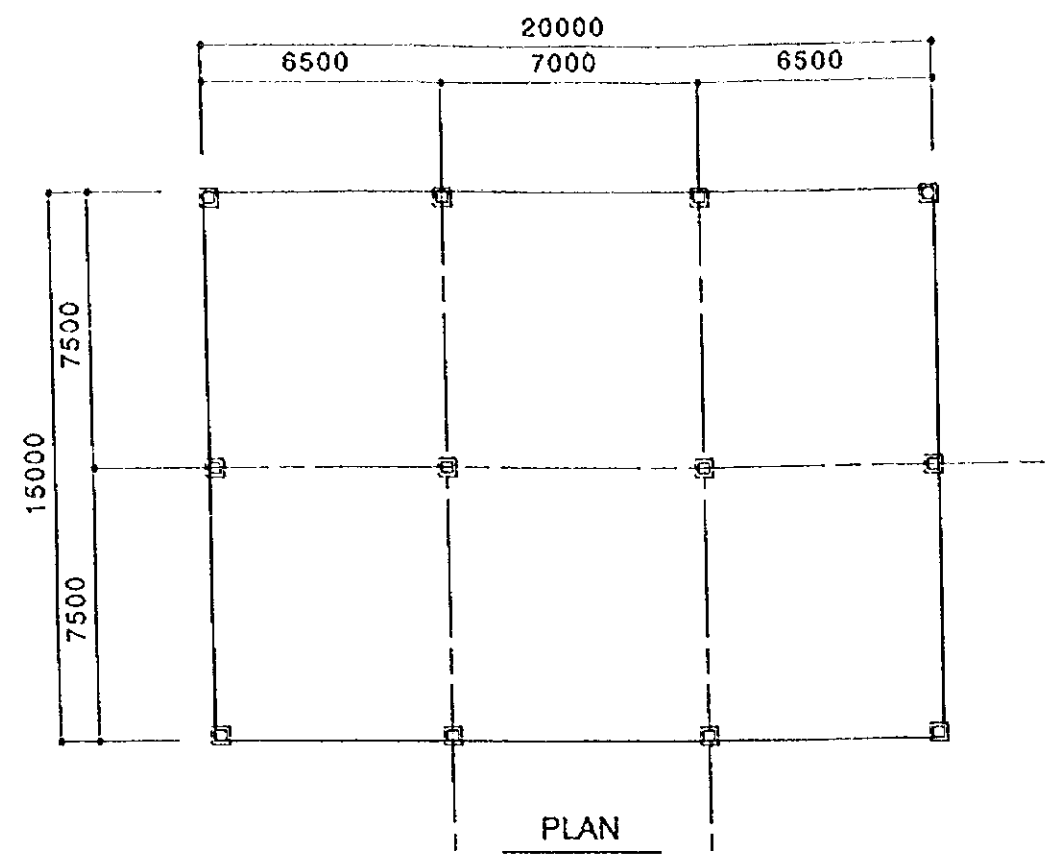
ELEVATION



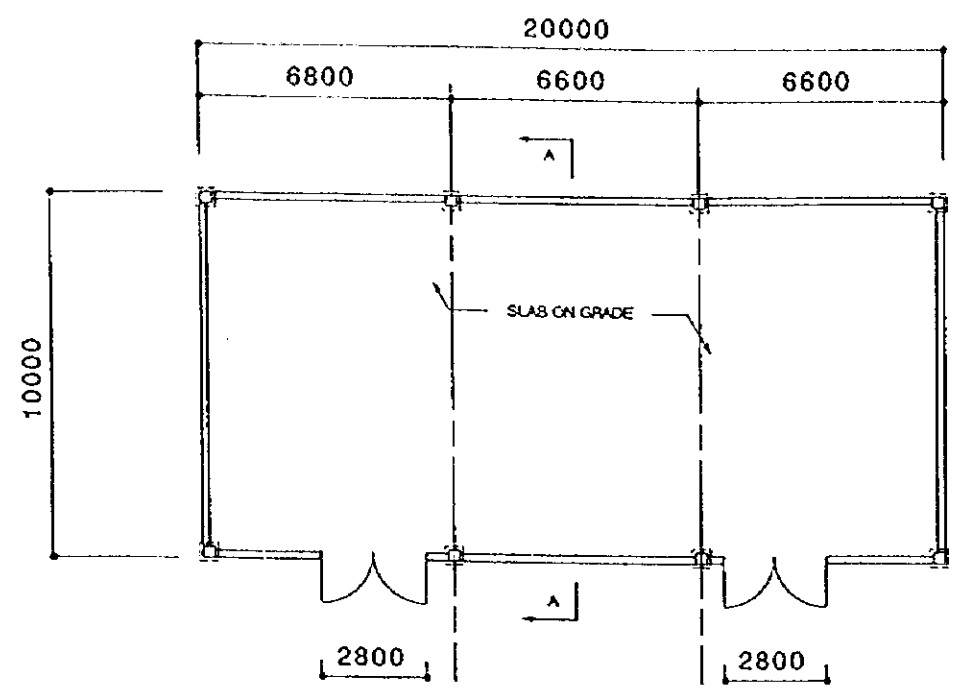
SECTION



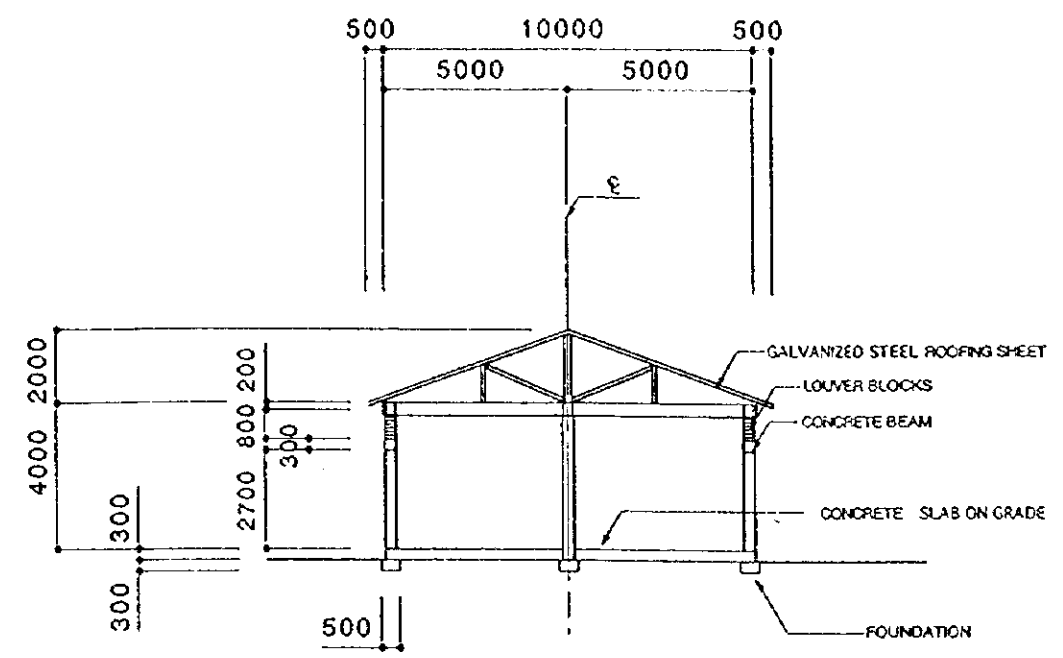
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| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING General Project Office | | | |
| DATE | MAR 1998 | DRAWING NO. | GN-09 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



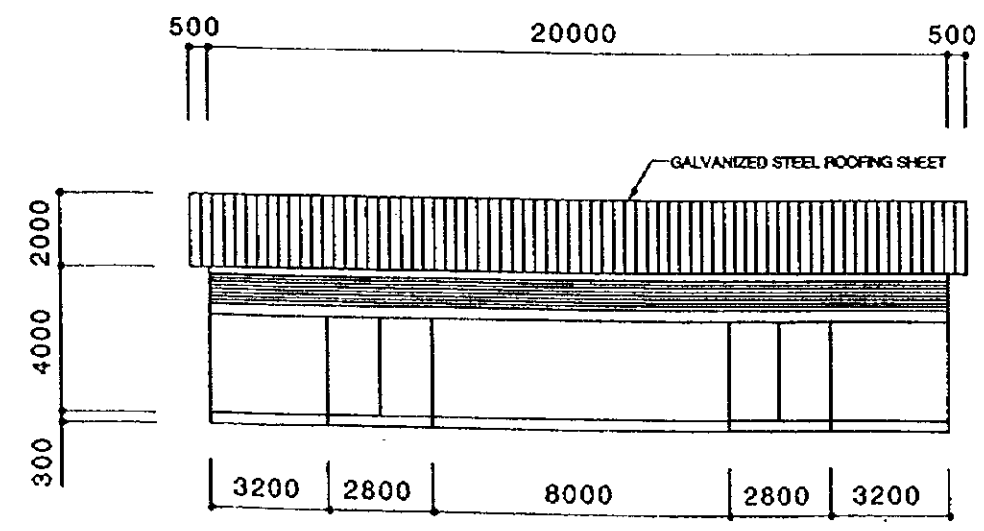
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| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING General | | | |
| Dry Yard and Sorter House | | | |
| DATE | MAR 1998 | DRAWING NO. | GN-10 |
| NIPPON KOEI CO., LTD. / TAIYU CONSULTANTS CO., LTD. | | | |



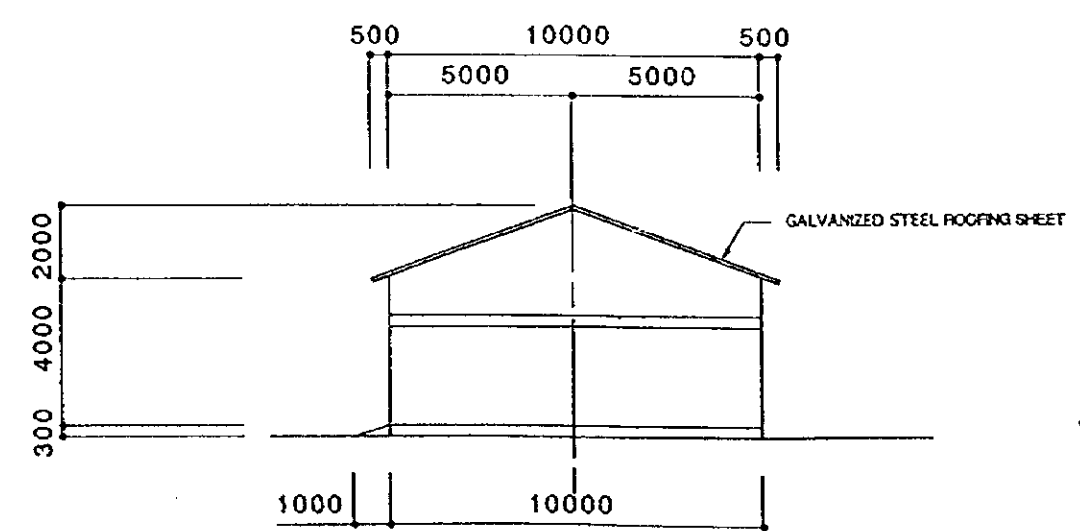
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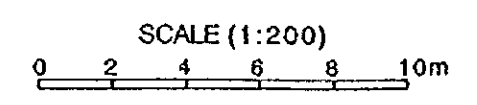
SECTION A-A



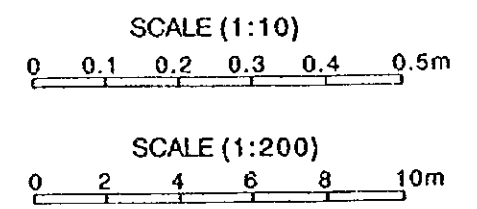
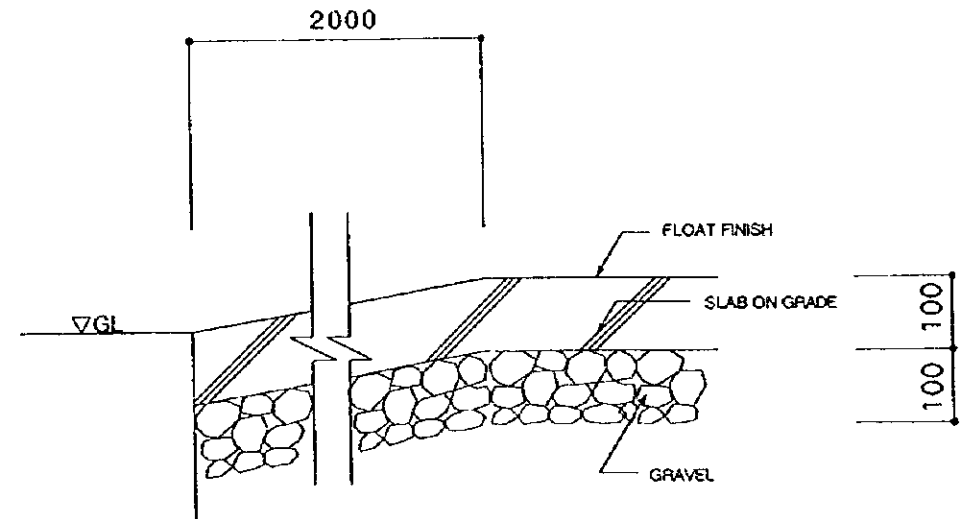
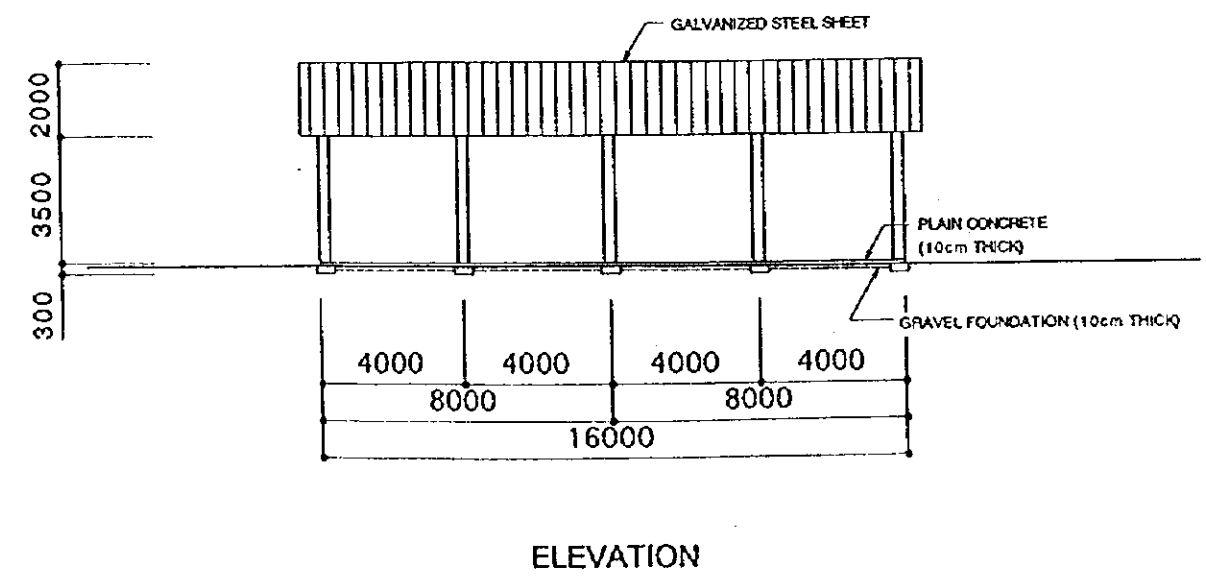
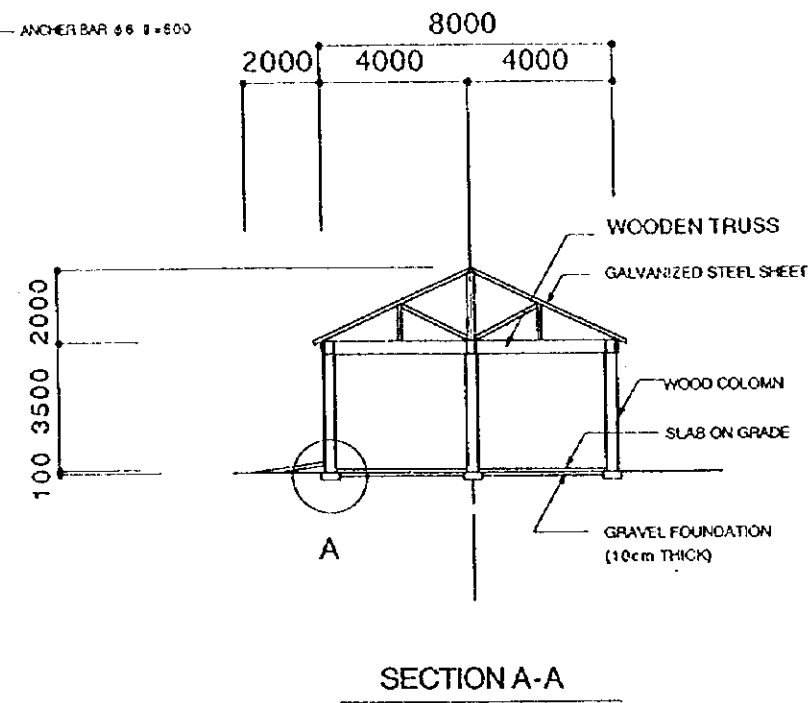
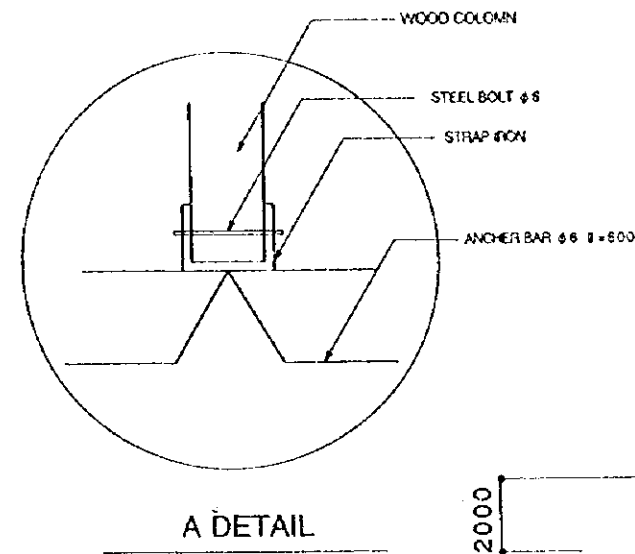
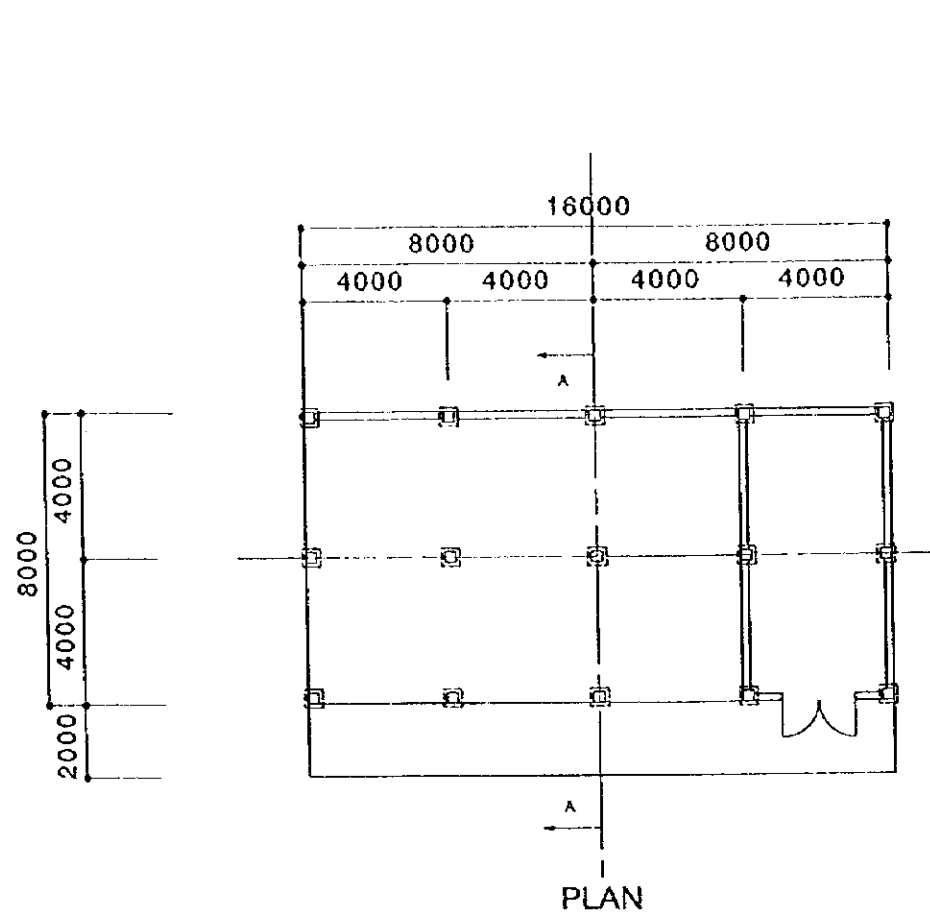
ELEVATION



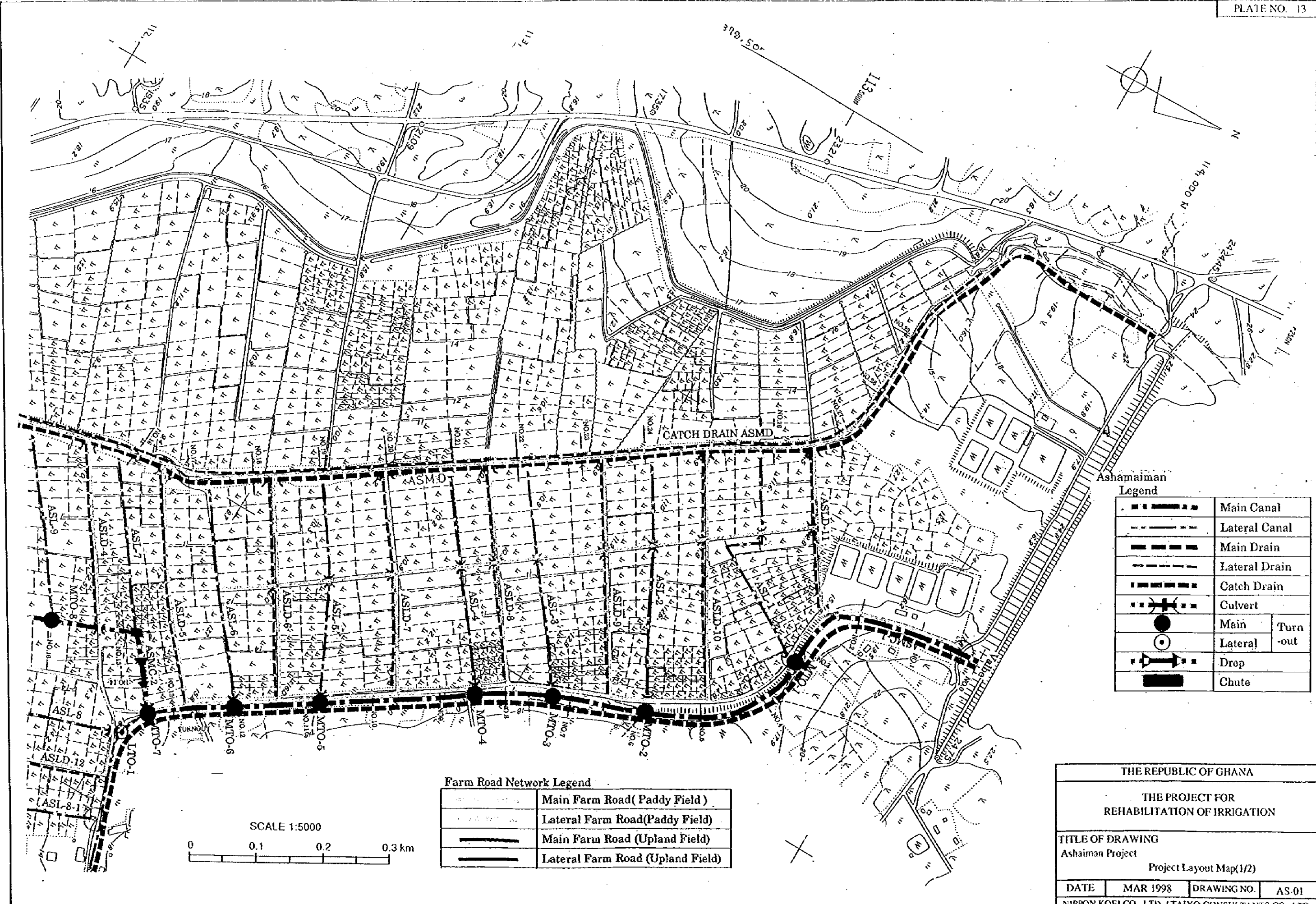
SIDE VIEW



| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING General | | | |
| Store House | | | |
| DATE | MAR 1998 | DRAWING NO. | GN-11 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING General | | | |
| Garage | | | |
| DATE | MAR 1998 | DRAWING NO. | GN-12 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |

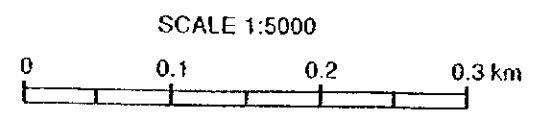


Ashamaiman Legend

| | |
|--|------------------|
| | Main Canal |
| | Lateral Canal |
| | Main Drain |
| | Lateral Drain |
| | Catch Drain |
| | Culvert |
| | Main Turn-out |
| | Lateral Turn-out |
| | Drop |
| | Chute |

Farm Road Network Legend

| | |
|--|----------------------------------|
| | Main Farm Road (Paddy Field) |
| | Lateral Farm Road (Paddy Field) |
| | Main Farm Road (Upland Field) |
| | Lateral Farm Road (Upland Field) |



THE REPUBLIC OF GHANA

THE PROJECT FOR REHABILITATION OF IRRIGATION

TITLE OF DRAWING
Ashamaiman Project
Project Layout Map(1/2)

| | | | |
|------|----------|-------------|-------|
| DATE | MAR 1998 | DRAWING NO. | AS-01 |
|------|----------|-------------|-------|

NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD.

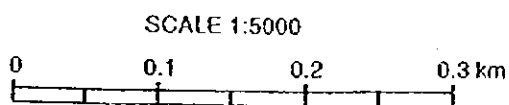


Ashamaiman Legend

| | |
|--|------------------|
| | Main Canal |
| | Lateral Canal |
| | Main Drain |
| | Lateral Drain |
| | Catch Drain |
| | Culvert |
| | Main Turn-out |
| | Lateral Turn-out |
| | Drop |
| | Chute |

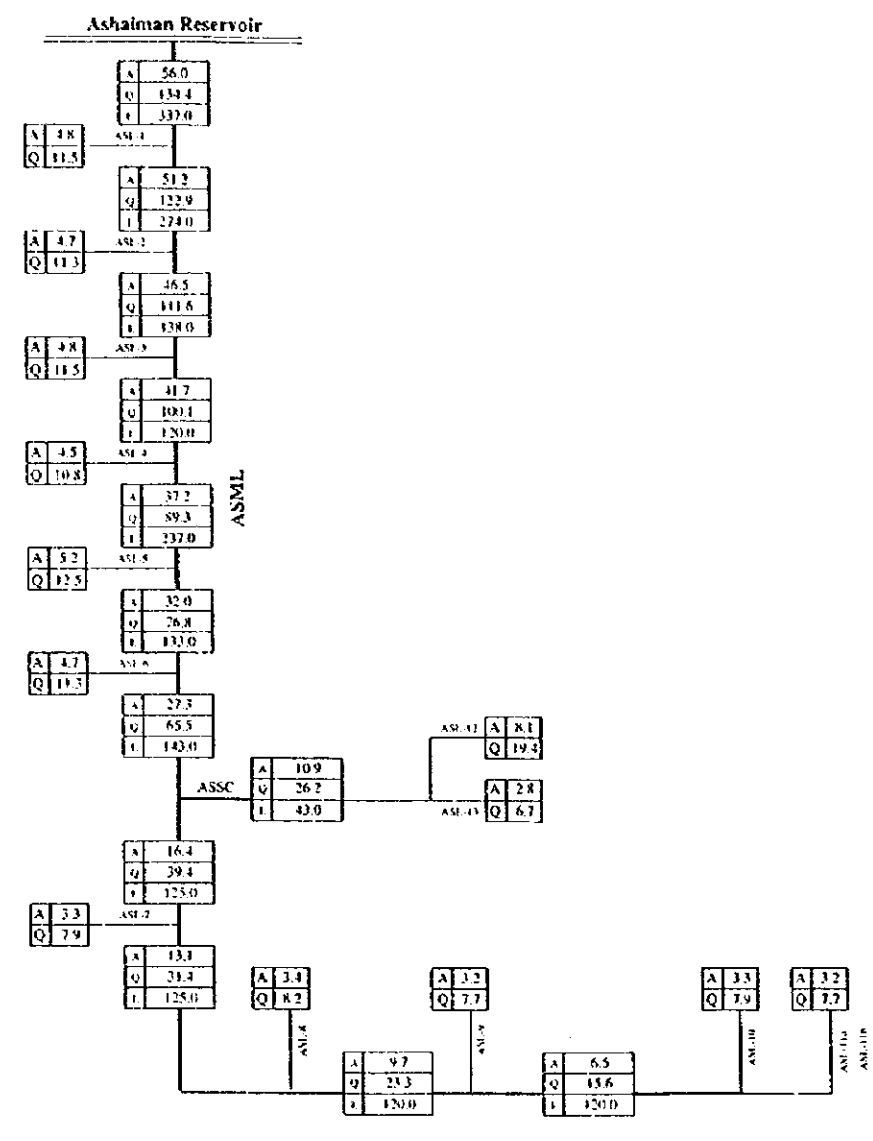
Farm Road Network Legend

| | |
|--|----------------------------------|
| | Main Farm Road (Paddy Field) |
| | Lateral Farm Road (Paddy Field) |
| | Main Farm Road (Upland Field) |
| | Lateral Farm Road (Upland Field) |



| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Ashaiman Project Project Layout Map(2/2) | | | |
| DATE | MAR 1998 | DRAWING NO. | AS-02 |
| NIIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |

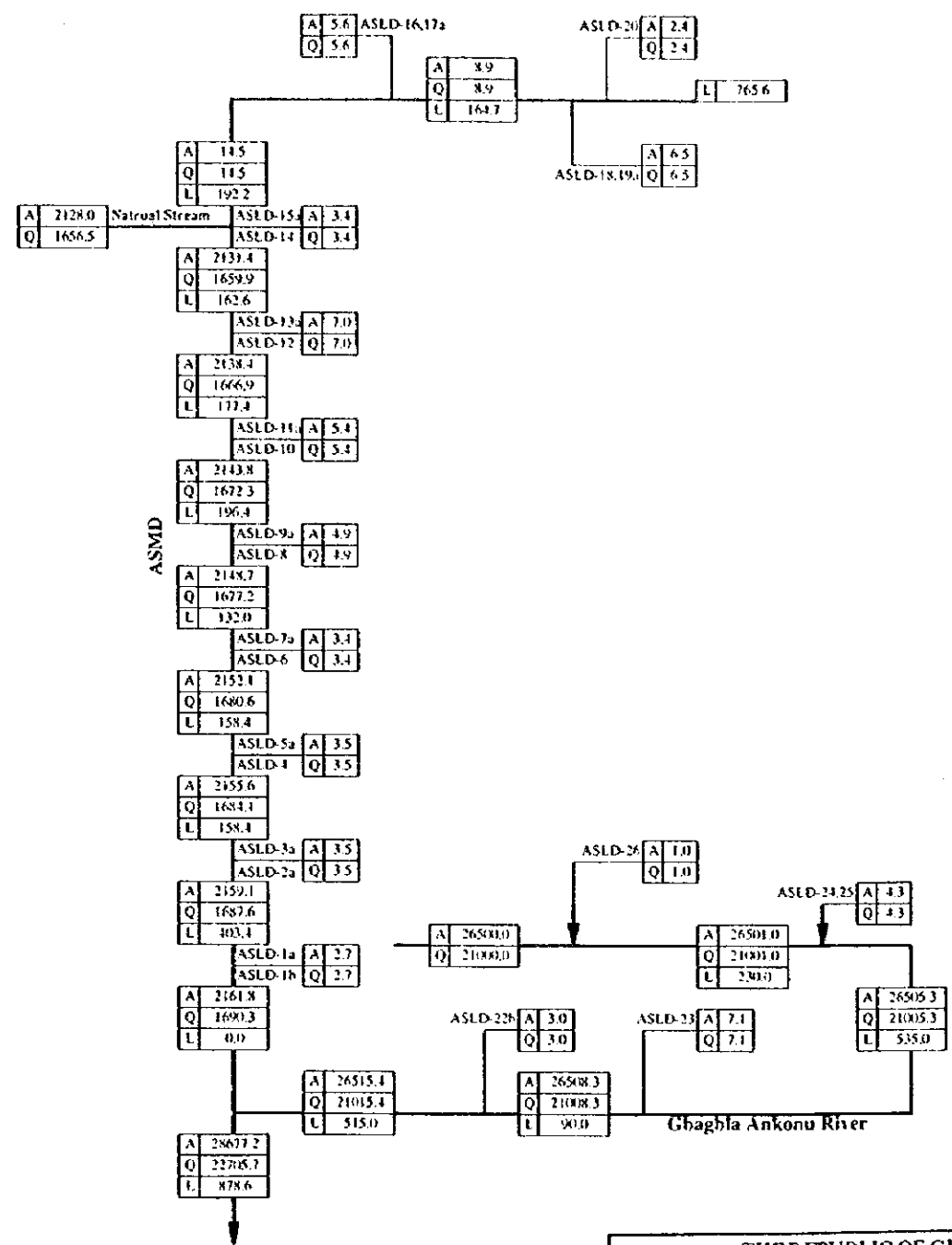
Irrigation Diagram



□ : Paddy Block
(Unit Design Discharge : 2.40 lit/sec/ha)

A: Area (ha)
Q: Discharge (lit/sec)
L: Length (m)

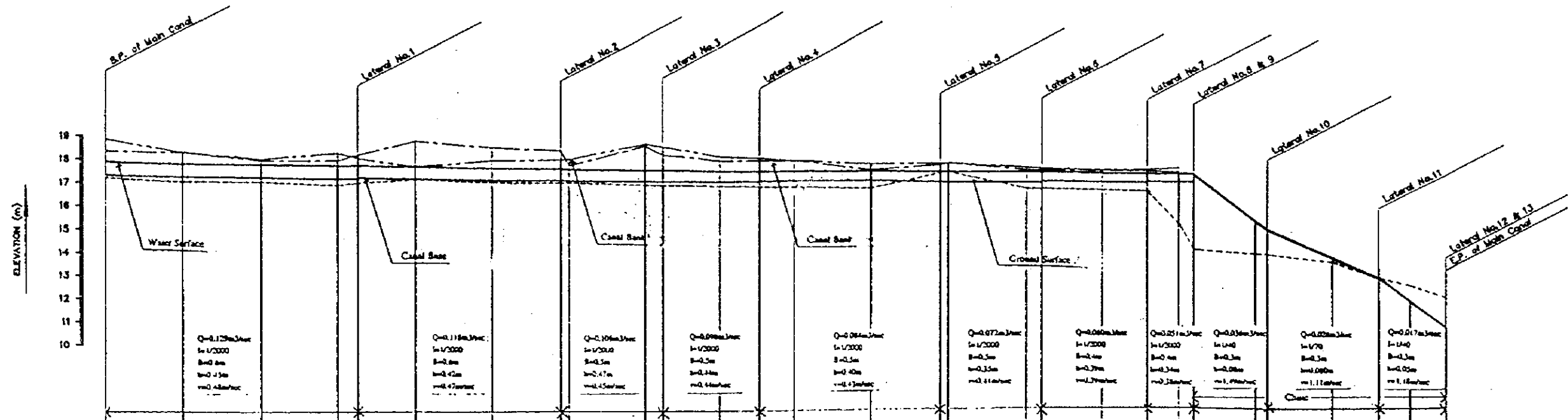
Drainage Diagram



□ : Paddy Block
(Unit Design Discharge : 1.00 lit/sec/ha)

A: Area (ha)
Q: Drainage Discharge (lit/sec)
L: Length (m)

| | | | |
|--|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Ashaiman Project Diagram for Irrigation and Drainage System | | | |
| DATE | MAR 1998 | DRAWING NO. | AS-03 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



| PROPOSED | WATER SURFACE ELEVATION | 17.80 | 17.80 | 17.80 | 17.70 | 17.70 | 17.85 | 17.81 | 17.80 | 17.45 | 17.40 | 17.30 | 17.20 | 17.28 | 17.22 | 17.20 | 17.11 | 17.11 | 13.60 | 12.74 | 11.74 | 10.82 | | | | | | |
|--------------------------|-------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| | CANAL BASE ELEVATION | 17.34 | 17.28 | 17.24 | 17.19 | 17.18 | 17.12 | 17.13 | 17.07 | 17.08 | 17.03 | 17.00 | 16.85 | 16.86 | 16.81 | 16.82 | 16.82 | 16.82 | 16.82 | 13.84 | 12.98 | 11.70 | 10.56 | | | | | |
| EXISTING CONDITIONS | CANAL BANK ELE.(LEFT) | 18.86 | 18.34 | 18.04 | 18.28 | 18.00 | 18.01 | 18.01 | 18.07 | 18.12 | 18.08 | 17.72 | 17.60 | 17.37 | 17.34 | 17.28 | 17.28 | 17.28 | 13.84 | 12.98 | 11.74 | 10.56 | | | | | | |
| | CANAL BANK ELE.(RIGHT) | 18.35 | 18.34 | 17.88 | 17.88 | 18.30 | 18.04 | 18.40 | 18.08 | 18.12 | 17.81 | 17.72 | 17.36 | 17.37 | 17.41 | 17.45 | 17.45 | 17.45 | 13.84 | 12.98 | 11.74 | 10.56 | | | | | | |
| GROUND SURFACE ELEVATION | | 17.18 | 16.96 | 16.96 | 16.83 | 17.00 | 16.96 | 17.06 | 16.91 | 16.91 | 16.87 | 16.80 | 16.45 | 16.80 | 16.28 | 16.15 | 13.74 | 13.74 | 13.42 | 12.78 | 12.42 | 11.91 | | | | | | |
| REDUCED DISTANCE | | 0.00 | 100.00 | 200.00 | 308.00 | 328.00 | 400.00 | 508.00 | 608.00 | 700.00 | 728.00 | 800.00 | 884.00 | 900.00 | 1000.00 | 1090.00 | 1100.00 | 1200.00 | 1300.00 | 1389.00 | 1400.00 | 1420.00 | 1500.00 | 1612.00 | 1640.00 | 1700.00 | 1743.00 | |
| DISTANCE | | 0.00 | 100.00 | 100.00 | 100.00 | 28.00 | 78.00 | 100.00 | 11.00 | 100.00 | 28.00 | 78.00 | 84.00 | 44.00 | 100.00 | 90.00 | 10.00 | 100.00 | 80.00 | 59.00 | 41.00 | 20.00 | 80.00 | 18.00 | 83.00 | 80.00 | 40.00 | 43.00 |
| STATION NO. | | Sta 0 | Sta 1 | Sta 2 | Sta 3 | Sta 4 | Sta 5 | Sta 6 | Sta 7 | Sta 8 | Sta 9 | Sta 10 | Sta 11 | Sta 12 | Sta 13 | Sta 14 | Sta 15 | Sta 16 | Sta 17 | Sta 18 | Sta 19 | Sta 20 | Sta 21 | Sta 22 | Sta 23 | Sta 24 | Sta 25 | |

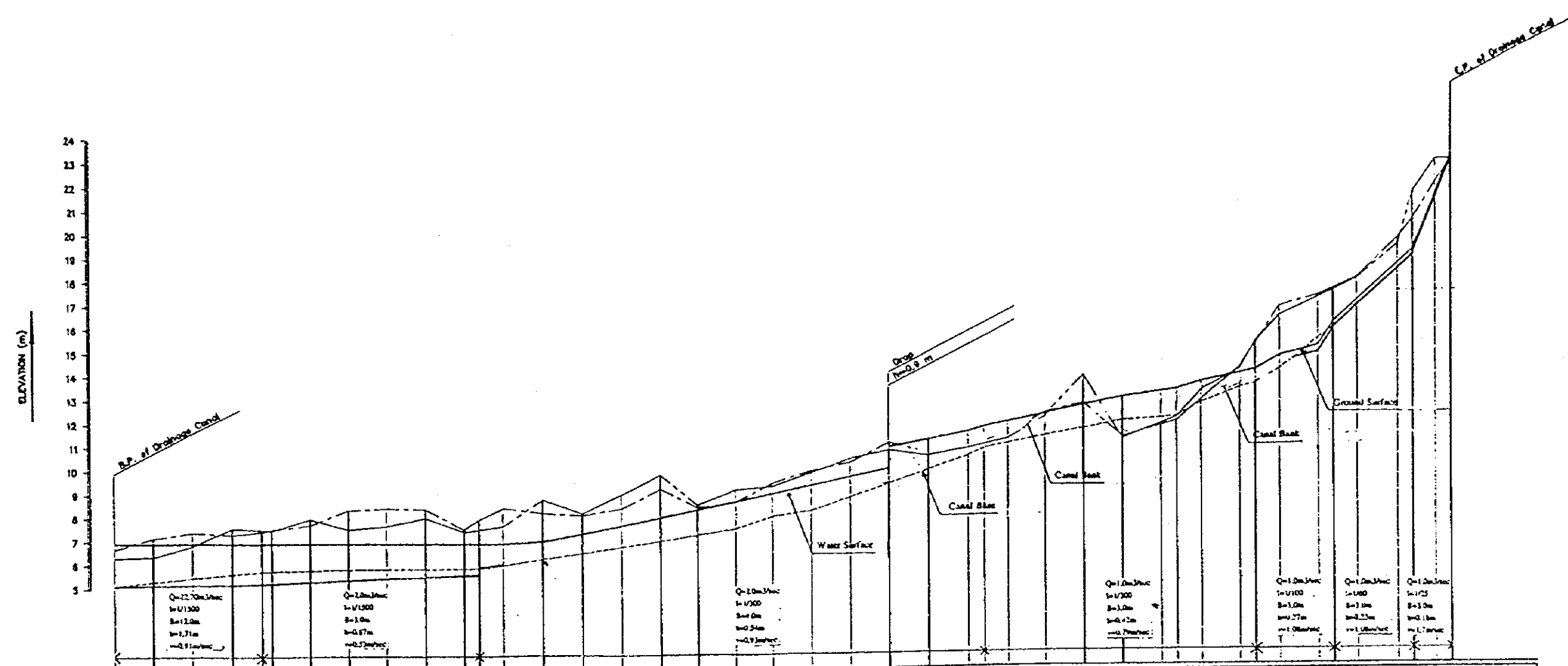
THE REPUBLIC OF GHANA

THE PROJECT FOR
REHABILITATION OF IRRIGATION

TITLE OF DRAWING
Ashaiman Project
Profile of Main Irrigation Canal

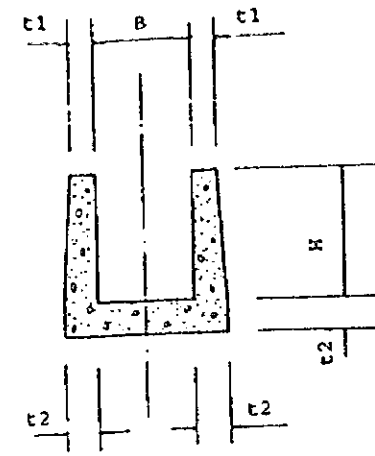
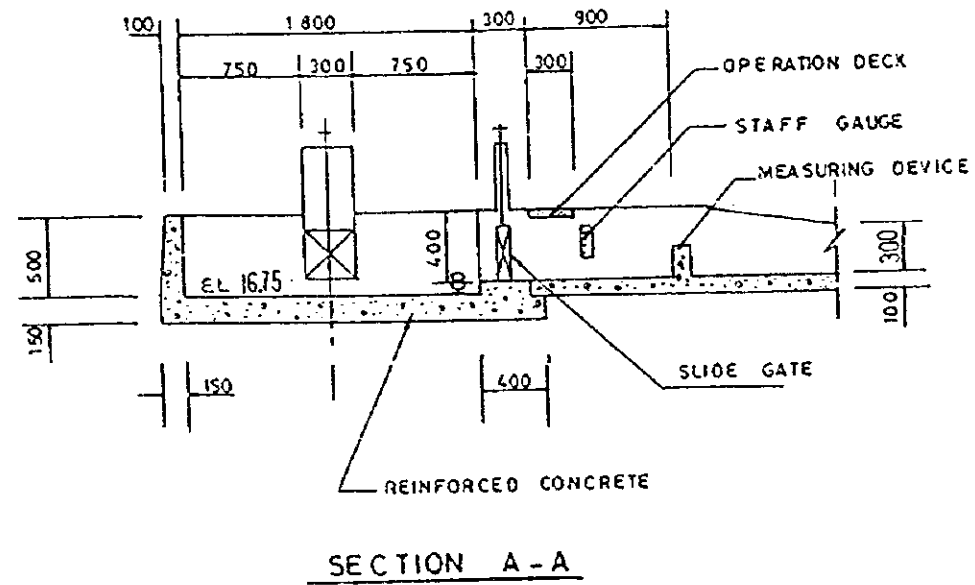
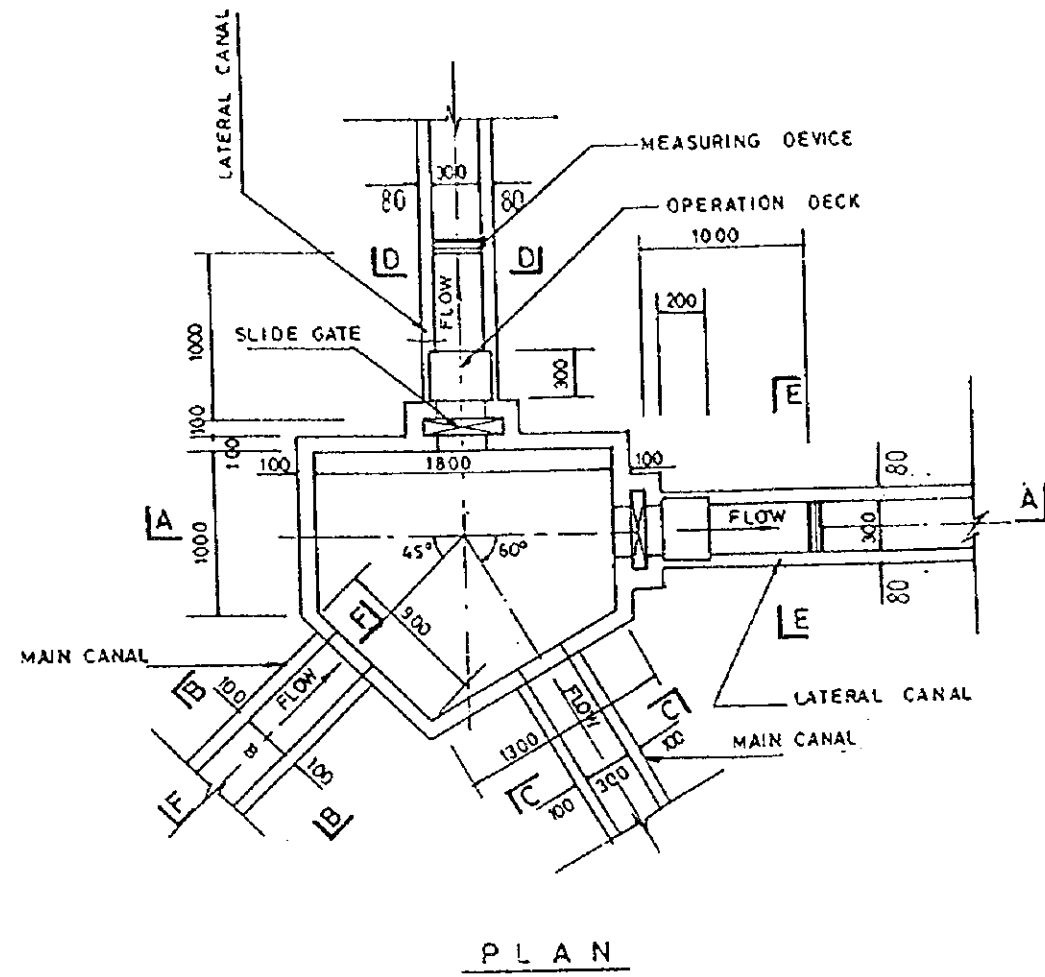
| | | | |
|------|----------|-------------|-------|
| DATE | MAR 1998 | DRAWING NO. | AS-04 |
|------|----------|-------------|-------|

NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD.



| STATION NO. | DISTANCE | REDUCED DISTANCE | GROUND SURFACE ELEVATION | EXISTING CONDITIONS | | PROPOSED | |
|-------------|----------|------------------|--------------------------|-----------------------|------------------------|----------------------|-------------------------|
| | | | | CANAL BANK ELE.(LEFT) | CANAL BANK ELE.(RIGHT) | CANAL BASE ELEVATION | WATER SURFACE ELEVATION |
| Sta 0 | 0.00 | 0.00 | 4.55 | 6.70 | 6.13 | 6.93 | 6.93 |
| Sta 1 | 100.00 | 100.00 | 4.70 | 7.16 | 6.19 | 6.93 | 6.93 |
| Sta 2 | 200.00 | 200.00 | 4.54 | 7.41 | 6.17 | 6.93 | 6.93 |
| Sta 3 | 300.00 | 300.00 | 5.09 | 7.32 | 6.18 | 6.93 | 6.93 |
| Sta 4 | 375.00 | 375.00 | 6.15 | 7.43 | 6.23 | 6.93 | 6.93 |
| Sta 5 | 400.00 | 400.00 | 6.02 | 7.84 | 6.24 | 6.93 | 6.93 |
| Sta 6 | 500.00 | 500.00 | 6.29 | 7.73 | 6.31 | 6.93 | 6.93 |
| Sta 7 | 600.00 | 600.00 | 6.98 | 6.33 | 6.32 | 6.93 | 6.93 |
| Sta 8 | 700.00 | 700.00 | 6.17 | 6.41 | 6.44 | 6.93 | 6.93 |
| Sta 9 | 800.00 | 800.00 | 6.31 | 6.34 | 6.51 | 6.93 | 6.93 |
| Sta 10 | 800.00 | 800.00 | 6.86 | 7.84 | 6.48 | 6.93 | 6.93 |
| Sta 11 | 900.00 | 900.00 | 6.44 | 7.84 | 6.52 | 6.93 | 6.93 |
| Sta 12 | 1000.00 | 1000.00 | 6.41 | 6.44 | 6.57 | 6.93 | 6.93 |
| Sta 13 | 1100.00 | 1100.00 | 6.78 | 6.21 | 6.74 | 7.01 | 7.01 |
| Sta 14 | 1200.00 | 1200.00 | 6.95 | 6.12 | 6.20 | 7.34 | 7.34 |
| Sta 15 | 1300.00 | 1300.00 | 7.07 | 6.40 | 6.21 | 7.88 | 7.88 |
| Sta 16 | 1400.00 | 1400.00 | 7.08 | 6.25 | 6.84 | 6.01 | 6.01 |
| Sta 17 | 1500.00 | 1500.00 | 7.60 | 6.42 | 6.94 | 6.34 | 6.34 |
| Sta 18 | 1600.00 | 1600.00 | 7.83 | 6.87 | 6.19 | 6.84 | 6.84 |
| Sta 19 | 1700.00 | 1700.00 | 7.82 | 6.43 | 6.31 | 8.01 | 8.01 |
| Sta 20 | 1800.00 | 1800.00 | 6.73 | 6.92 | 6.87 | 8.34 | 8.34 |
| Sta 21 | 1900.00 | 1900.00 | 8.32 | 10.25 | 10.40 | 9.88 | 9.88 |
| Sta 22 | 2000.00 | 2000.00 | 6.94 | 11.09 | 10.77 | 10.01 | 10.01 |
| Sta 23 | 2100.00 | 2100.00 | 8.80 | 10.83 | 10.83 | 11.20 | 11.20 |
| Sta 24 | 2200.00 | 2200.00 | 10.48 | 11.01 | 10.82 | 11.51 | 11.51 |
| Sta 25 | 2239.00 | 2239.00 | 10.61 | 11.13 | 10.87 | 11.71 | 11.71 |
| Sta 26 | 2300.00 | 2300.00 | 10.87 | 11.41 | 11.19 | 11.81 | 11.81 |
| Sta 27 | 2400.00 | 2400.00 | 11.18 | 12.28 | 12.11 | 12.24 | 12.24 |
| Sta 28 | 2500.00 | 2500.00 | 11.26 | 12.80 | 13.06 | 12.57 | 12.57 |
| Sta 29 | 2600.00 | 2600.00 | 11.86 | 11.21 | 11.12 | 12.91 | 12.91 |
| Sta 30 | 2700.00 | 2700.00 | 12.14 | 11.89 | 11.79 | 13.15 | 13.15 |
| Sta 31 | 2739.00 | 2739.00 | 12.42 | 11.88 | 12.06 | 13.30 | 13.30 |
| Sta 32 | 2800.00 | 2800.00 | 12.75 | 12.81 | 12.19 | 13.00 | 13.00 |
| Sta 33 | 2900.00 | 2900.00 | 13.36 | 14.17 | 14.09 | 13.81 | 13.81 |
| Sta 34 | 2939.00 | 2939.00 | 12.87 | 18.17 | 15.24 | 14.00 | 14.00 |
| Sta 35 | 3000.00 | 3000.00 | 12.81 | 16.78 | 15.34 | 14.60 | 14.60 |
| Sta 36 | 3100.00 | 3100.00 | 14.12 | 17.20 | 17.10 | 14.77 | 14.77 |
| Sta 37 | 3139.00 | 3139.00 | 16.49 | 17.40 | 17.39 | 14.77 | 14.77 |
| Sta 38 | 3200.00 | 3200.00 | 17.27 | 17.83 | 17.86 | 16.74 | 16.74 |
| Sta 39 | 3300.00 | 3300.00 | 16.86 | 18.00 | 18.28 | 18.40 | 18.40 |
| Sta 40 | 3339.00 | 3339.00 | 18.41 | 20.37 | 21.50 | 18.80 | 18.80 |
| Sta 41 | 3400.00 | 3400.00 | 20.80 | 21.81 | 22.85 | 21.47 | 21.47 |
| Sta 42 | 3438.00 | 3438.00 | 20.90 | 22.83 | 22.88 | 23.03 | 23.03 |

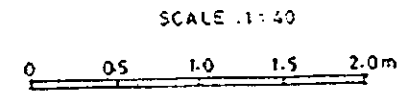
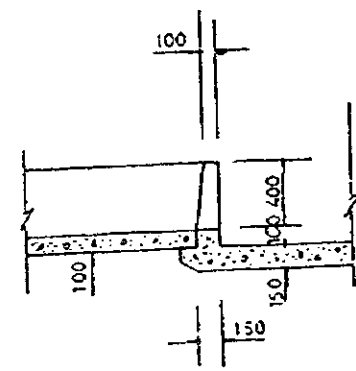
| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Ashaiman Project Profile of Main Drain | | | |
| DATE | MAR 1998 | DRAWING NO. | AS 05 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



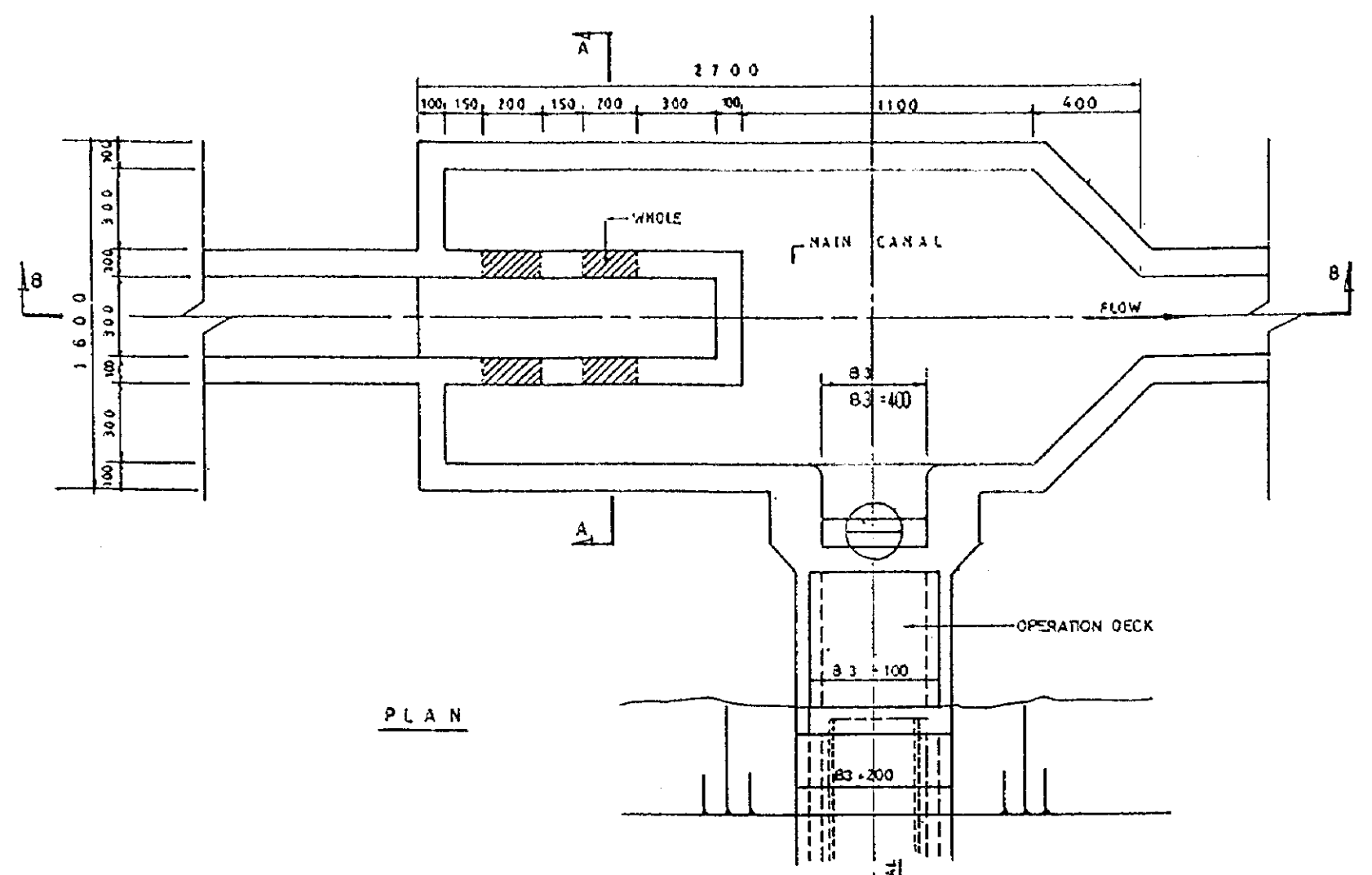
DIVISION BOX SECTION

| | B-B | C-C | D-D | E-E |
|----|-----|-----|-----|-----|
| B | 400 | 300 | 300 | 300 |
| H | 500 | 400 | 300 | 300 |
| t1 | 100 | 100 | 80 | 80 |
| t2 | 100 | 100 | 80 | 80 |

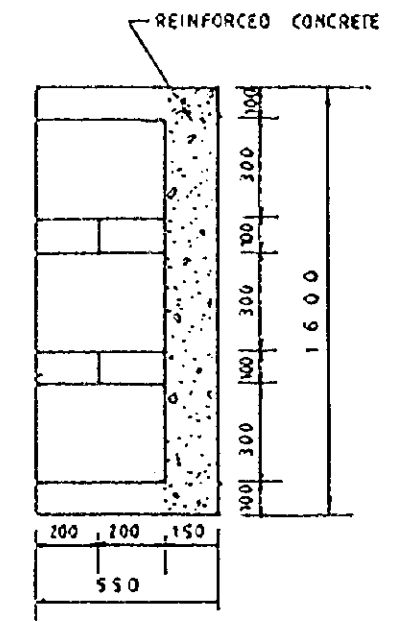
SECTION B-B C-C D-D & E-E



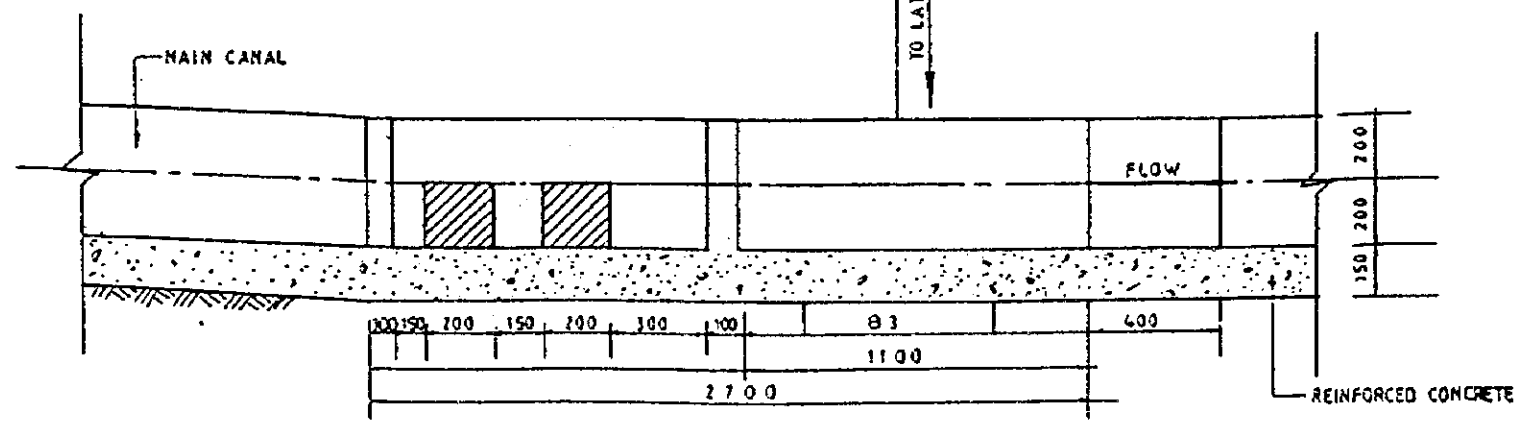
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|--|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Ashaiman Project Turnout No.7 on the Main Canal | | | |
| DATE | MAR 1998 | DRAWING NO. | AS-06 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



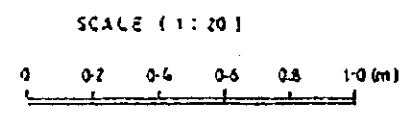
PLAN



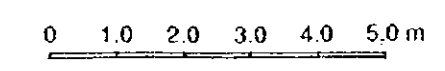
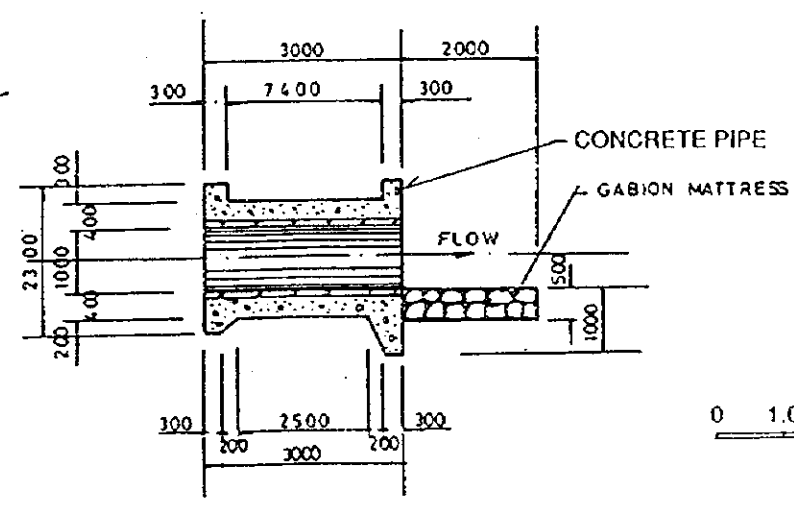
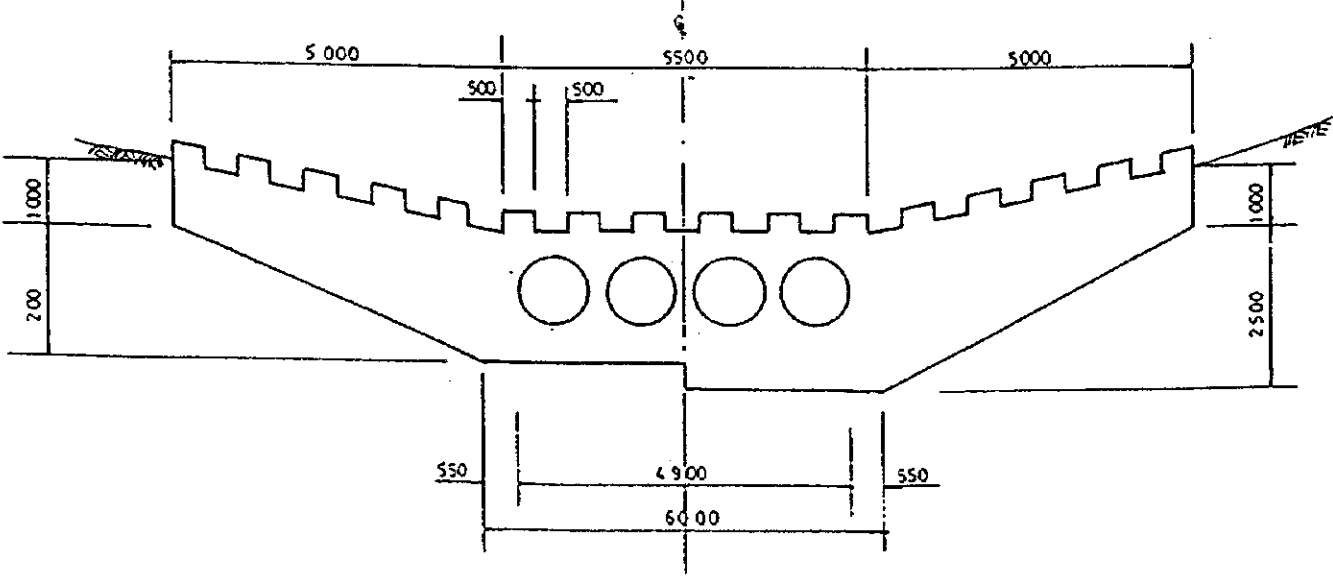
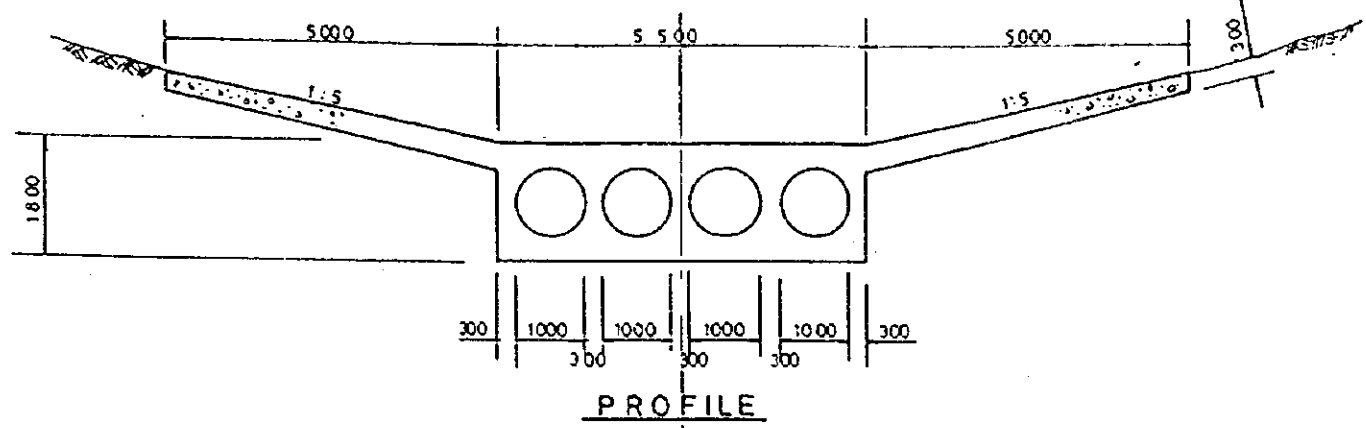
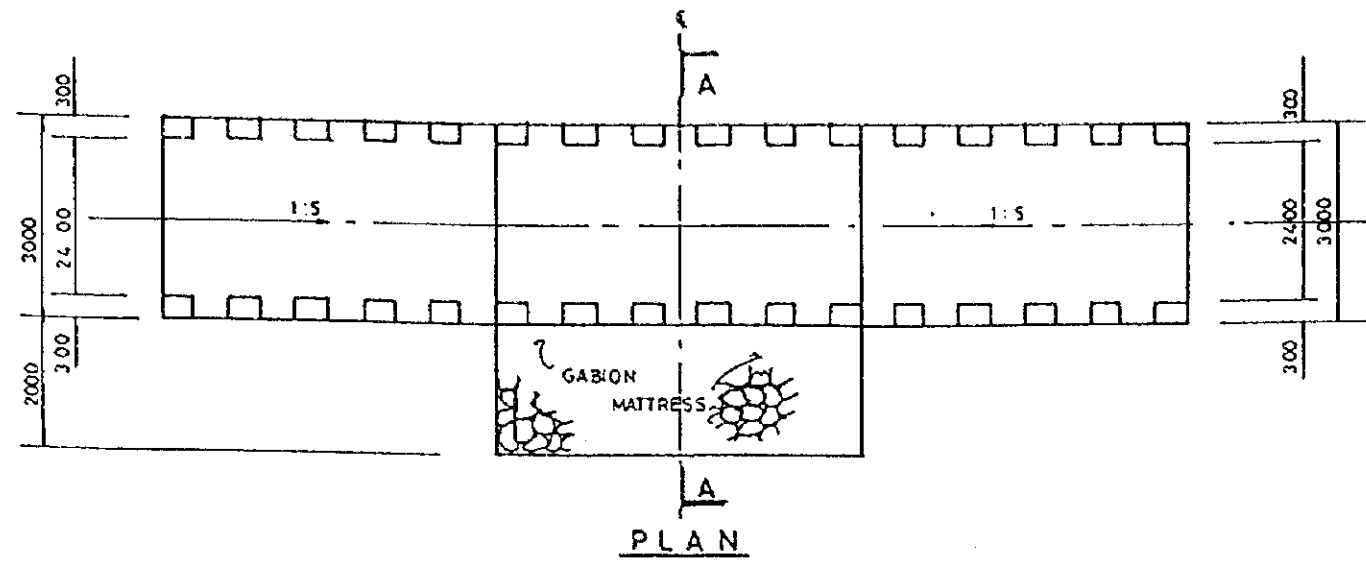
SECTION A - A



PROFILE

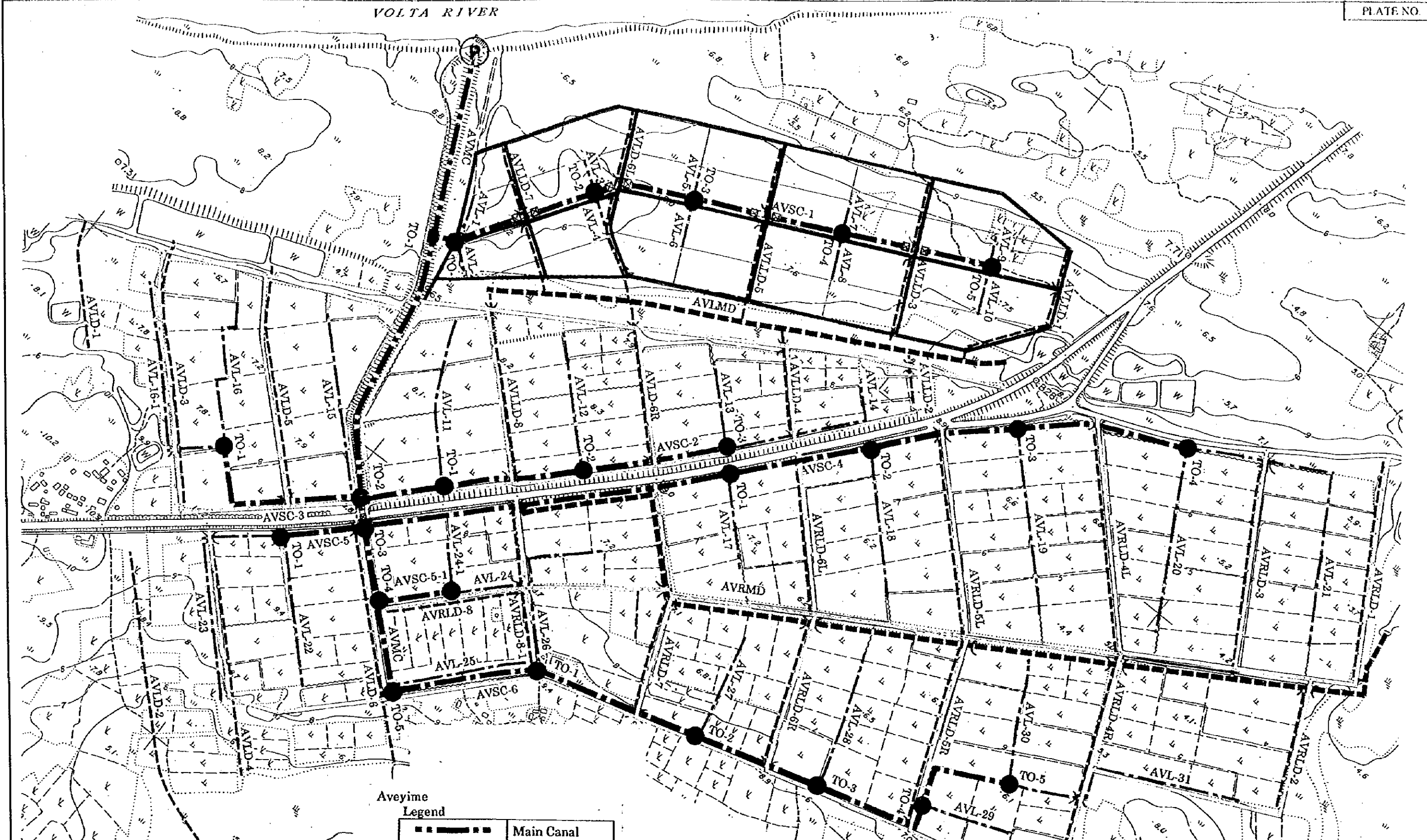


| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Ashaiman Project Chute | | | |
| DATE | MAR 1998 | DRAWING NO. | AS 07 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



CAUSEWAY

| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Ashaiman Project Causeway | | | |
| DATE | MAR 1998 | DRAWING NO. | AS-08 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



SCALE 1:5000
0 0.1 0.2 0.3 km

Aveyime Legend

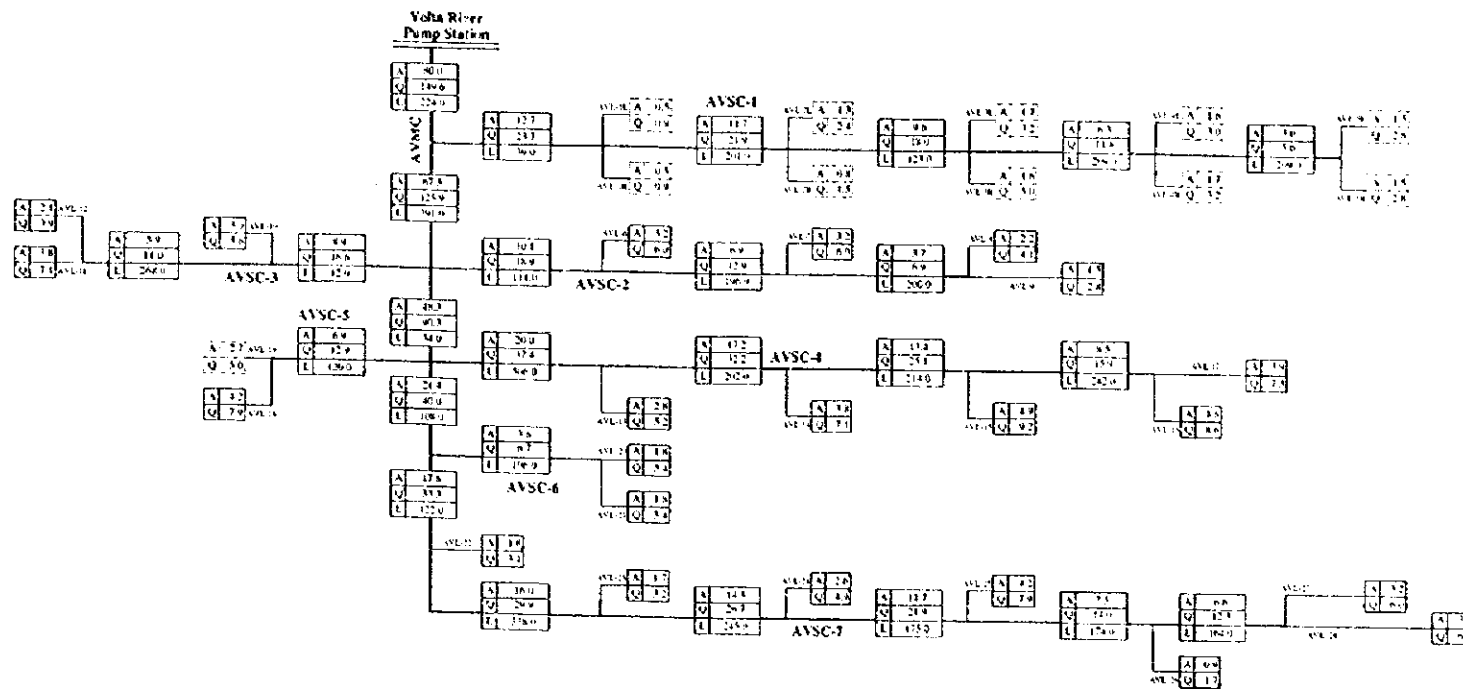
| | | |
|--|---------------|----------|
| | Main Canal | |
| | Lateral Canal | |
| | Main Drain | |
| | Lateral Drain | |
| | Culvert | |
| | Main | Turn-out |
| | Lateral | |
| | Siphone | |

Farm Road Network Legend

| | |
|--|---------------------------------------|
| | Main Farm Road (Paddy Field Field) |
| | Lateral Farm Road (Paddy Field Field) |
| | Main Farm Road (Upland Field) |
| | Lateral Farm Road (Upland Field) |

| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Aveyime Project Project Layout Map | | | |
| DATE | MAR 1998 | DRAWING NO. | AV-01 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |

Irrigation Diagram

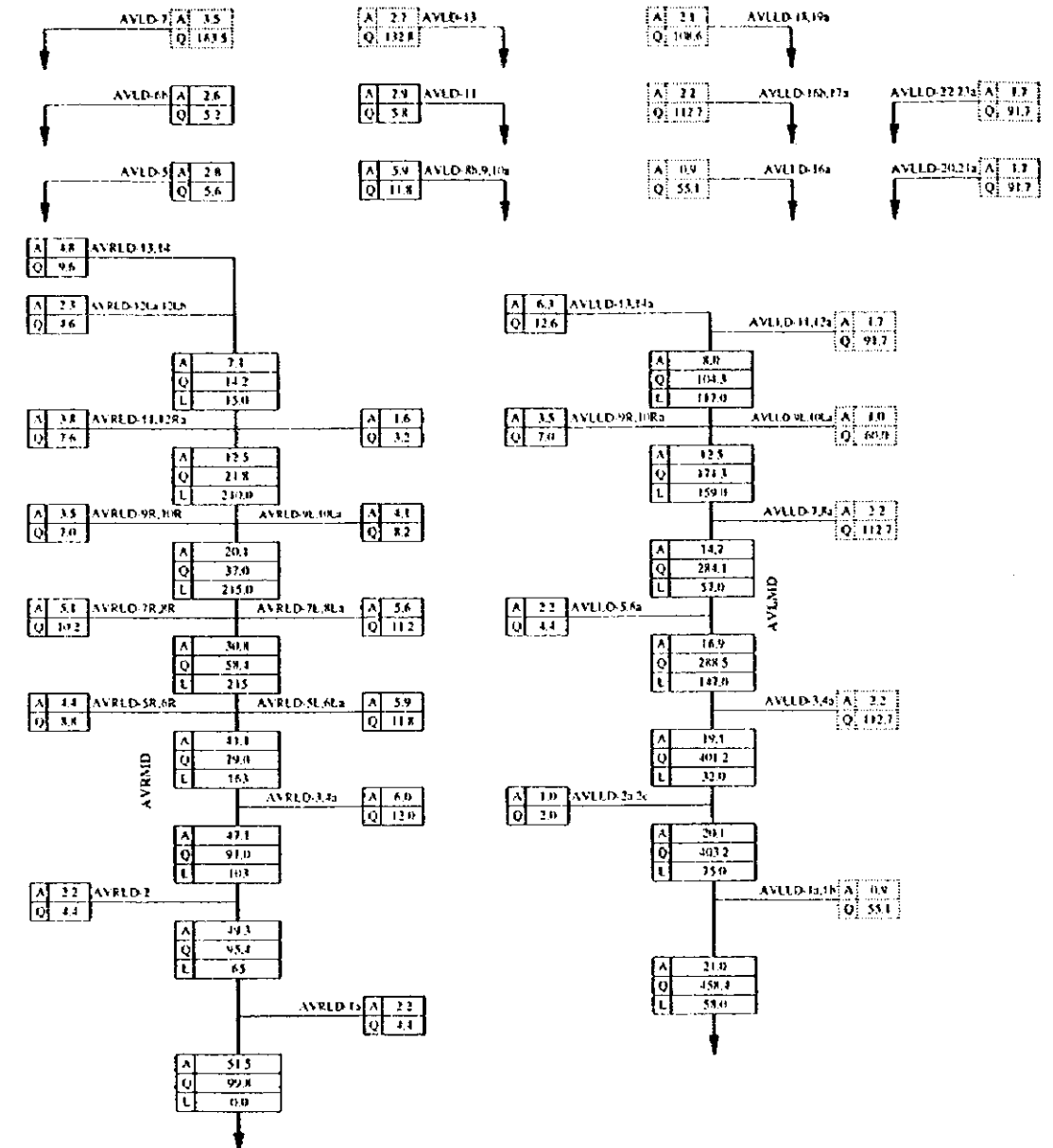


: Paddy Block
(Unit Design Discharge : 1.87 lit/sec/ha)

: Paddy+Upland Field Block
(Unit Design Discharge : 1.87 lit/sec/ha)

A: Area (ha)
Q: Discharge (lit/sec)
L: Length (m)

Drainage Diagram

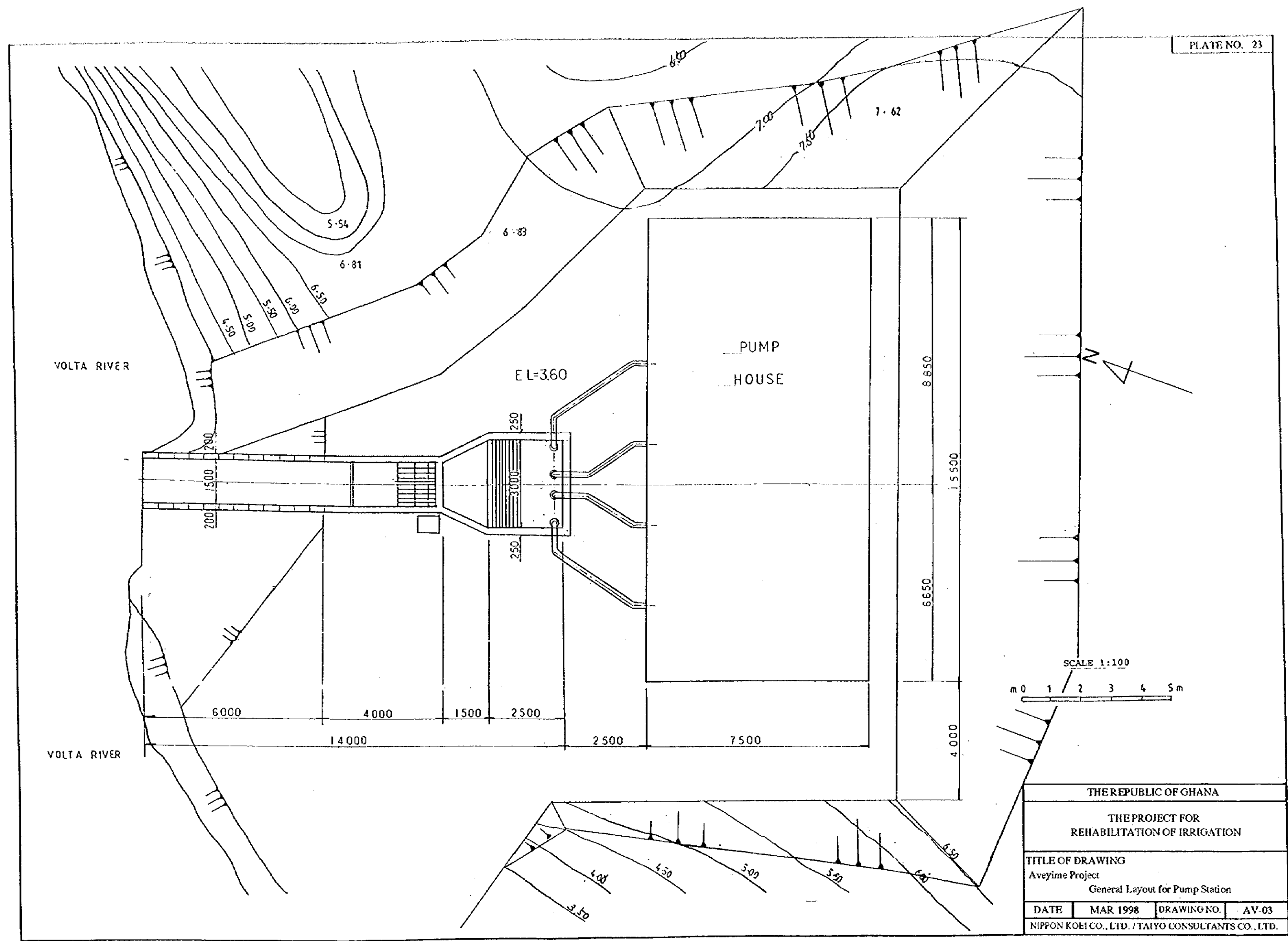


: Paddy Block
(Unit Design Discharge : 2.0 lit/sec/ha)

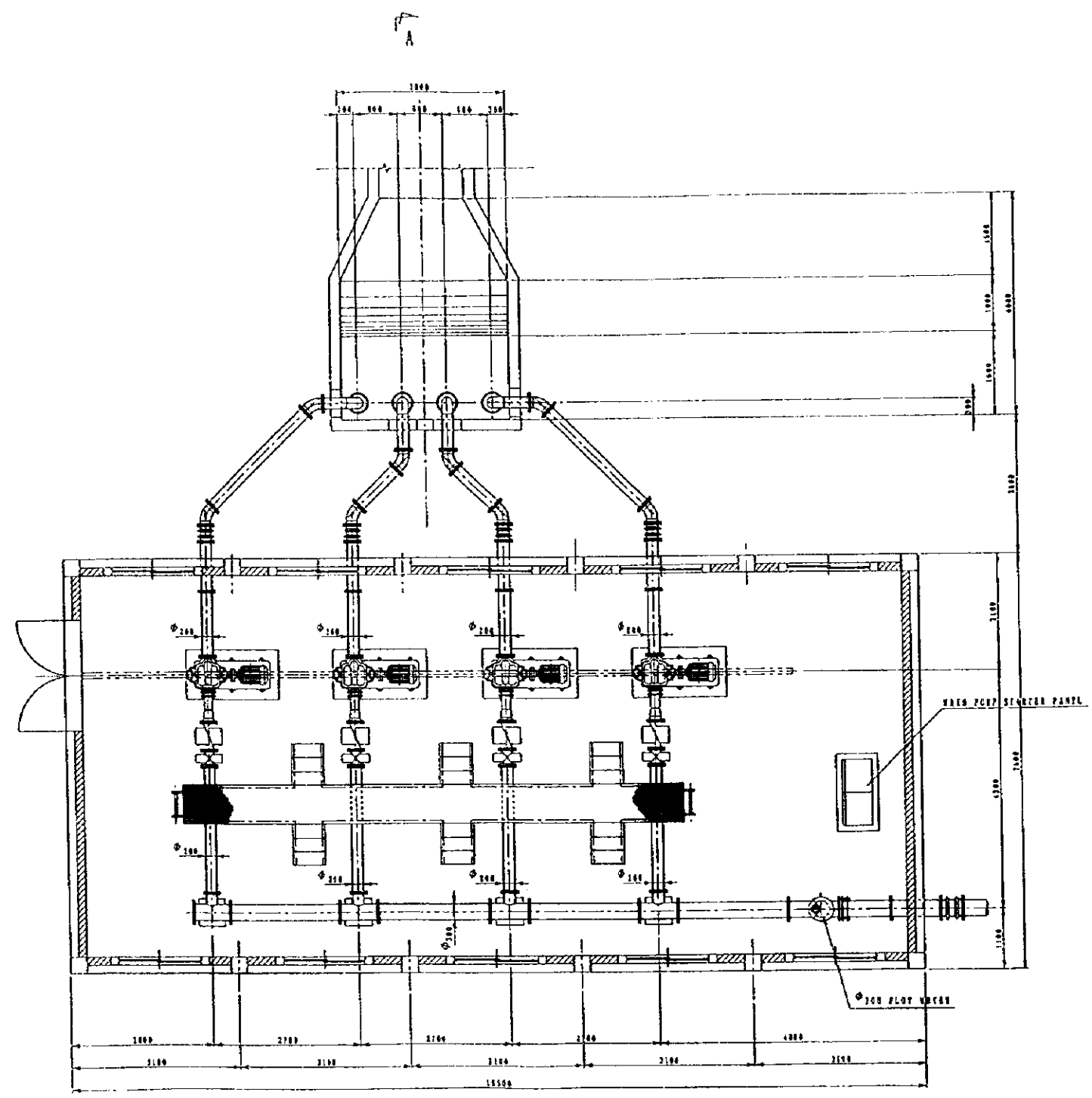
: Paddy+Upland Field Block
(Unit Design Discharge : $Q \text{ (lit/s)} = 0.060A^{4/5} \times 1000$)

A: Area (ha)
Q: Drainage Discharge (lit/sec)
L: Length (m)

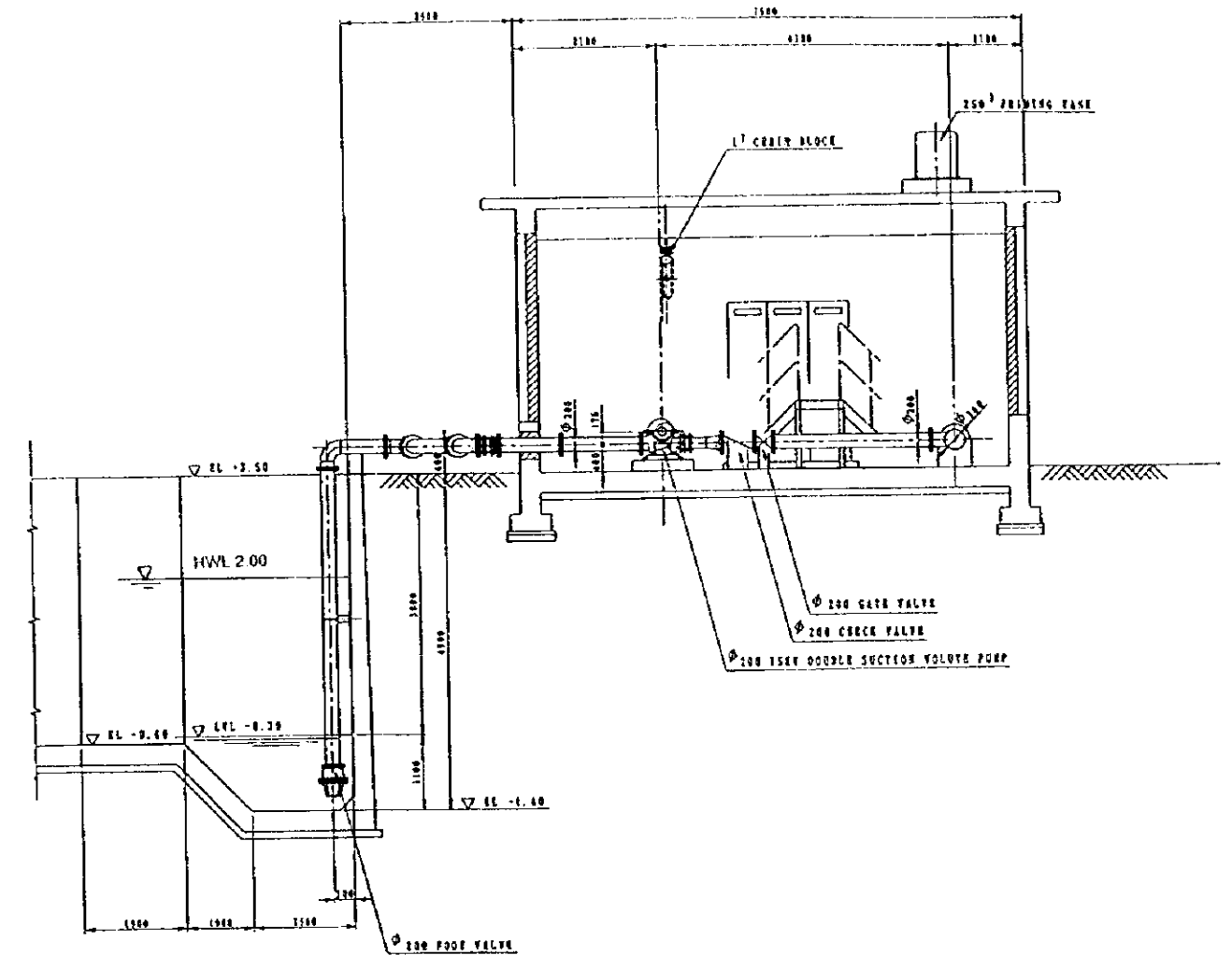
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|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Aveyime Project Diagram for Irrigation and Drainage System | | | |
| DATE | MAR 1998 | DRAWING NO. | AV-02 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



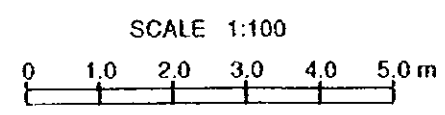
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| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Aveyime Project General Layout for Pump Station | | | |
| DATE | MAR 1998 | DRAWING NO. | AV-03 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



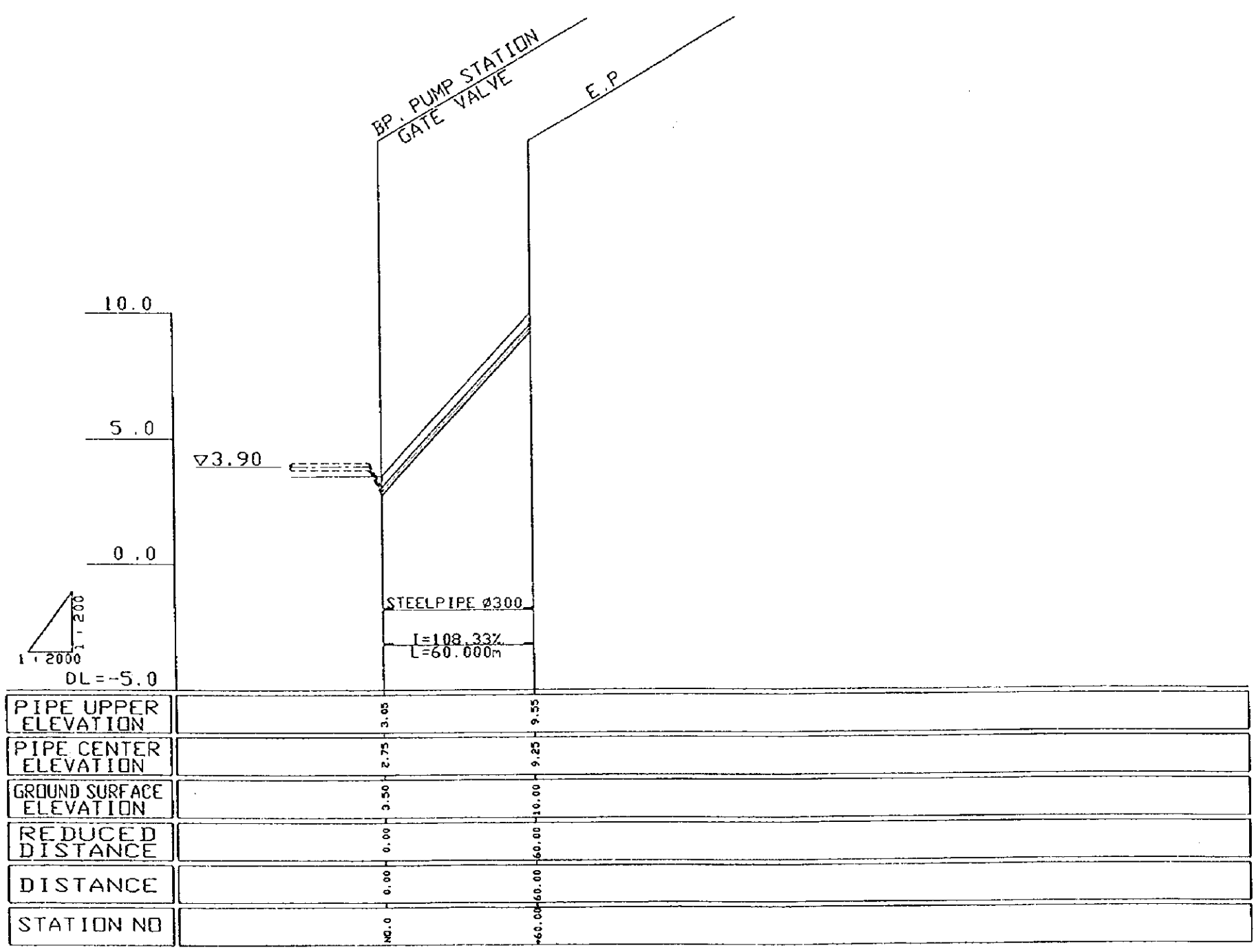
P L A N



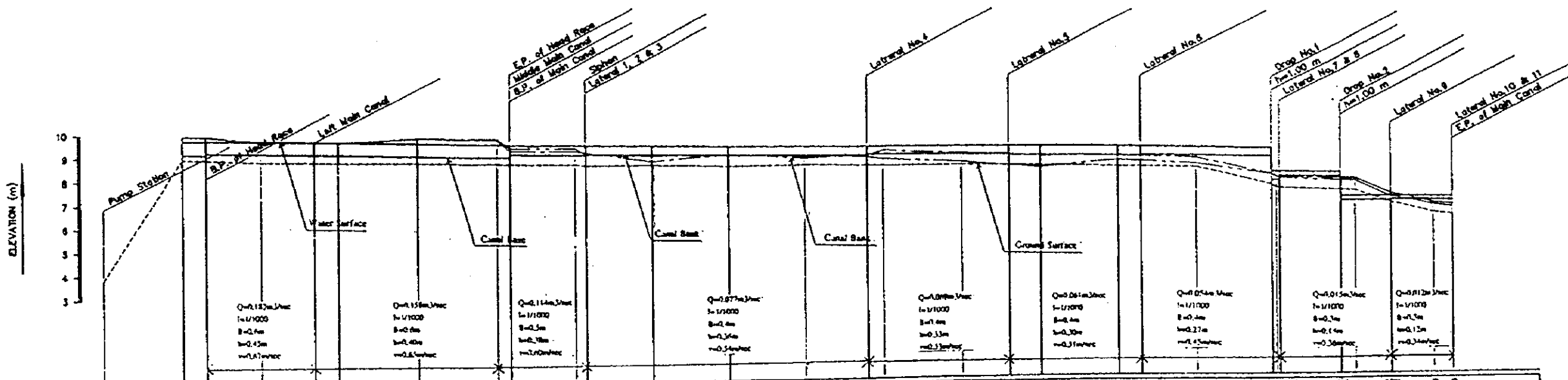
SECTION A - A



| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Aveyime Project Pump Station | | | |
| DATE | MAR 1998 | DRAWING NO. | AV-04 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |

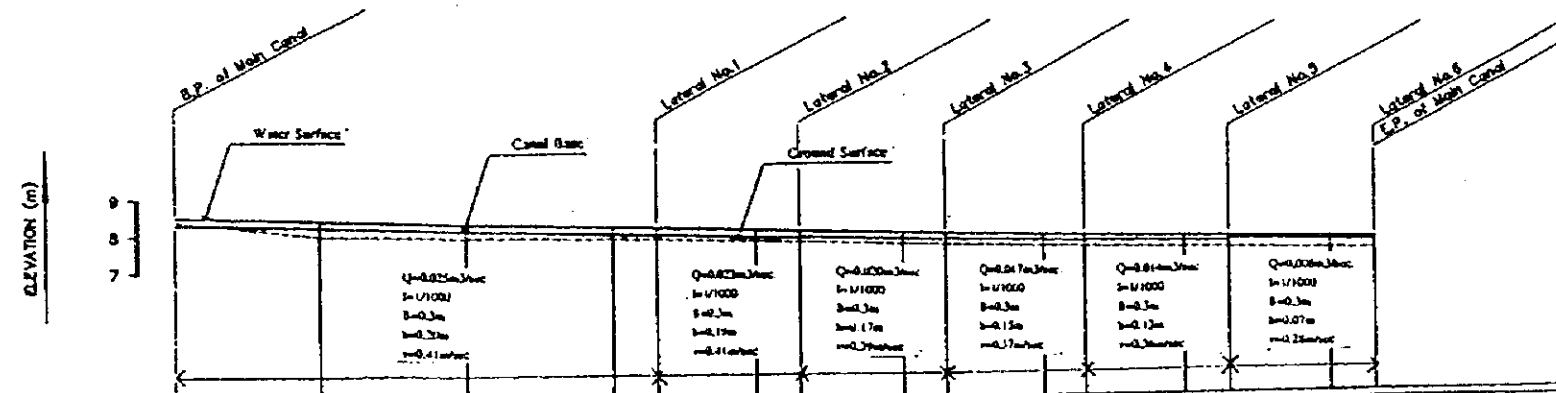


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|--|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Aveyime Project Main Pipeline | | | |
| DATE | MAR 1998 | DRAWING NO. | AV-05 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



| | PROPOSED | | EXISTING CONDITIONS | | | | REDUCED DISTANCE | DISTANCE | STATION NO. |
|---------|-------------------------|----------------------|------------------------|-------------------------|--------------------------|---------|------------------|----------|-------------|
| | WATER SURFACE ELEVATION | CANAL BASE ELEVATION | CANAL BANK ELE. (LEFT) | CANAL BANK ELE. (RIGHT) | GROUND SURFACE ELEVATION | | | | |
| Sta. 0 | | | | | 3.66 | 0.00 | 0.00 | 0 | |
| Sta. 1 | 6.79 | 3.19 | 6.04 | 6.89 | 6.64 | 100.00 | 100.00 | 1 | |
| Sta. 2 | 6.74 | 2.21 | 6.70 | 6.79 | 6.67 | 300.00 | 70.00 | 2 | |
| Sta. 3 | 6.71 | 2.16 | 6.69 | 6.71 | 6.66 | 270.00 | 70.00 | 3 | |
| Sta. 4 | 6.69 | 2.15 | 6.68 | 6.68 | 6.67 | 300.00 | 30.00 | 4 | |
| Sta. 5 | 6.64 | 2.11 | 6.66 | 6.66 | 6.63 | 400.00 | 100.00 | 5 | |
| Sta. 6 | 6.61 | 2.03 | 6.65 | 6.79 | 6.66 | 800.00 | 100.00 | 6 | |
| Sta. 7 | 6.59 | 1.98 | 6.40 | 6.33 | 6.65 | 818.00 | 18.00 | 7 | |
| Sta. 8 | 6.55 | 1.92 | 6.42 | 6.20 | 6.63 | 800.00 | 84.00 | 8 | |
| Sta. 9 | 6.55 | 1.91 | 6.15 | 6.23 | 6.66 | 814.00 | 14.00 | 9 | |
| Sta. 10 | 6.49 | 1.87 | 6.00 | 6.64 | 6.60 | 700.00 | 84.00 | 10 | |
| Sta. 11 | 6.44 | 1.87 | 6.10 | 6.10 | 6.64 | 800.00 | 100.00 | 11 | |
| Sta. 12 | 6.38 | 1.82 | 6.90 | 6.90 | 6.64 | 900.00 | 100.00 | 12 | |
| Sta. 13 | 6.34 | 1.80 | 6.91 | 6.89 | 6.50 | 978.00 | 78.00 | 13 | |
| Sta. 14 | 6.28 | 1.79 | 6.82 | 6.17 | 6.48 | 1000.00 | 21.00 | 14 | |
| Sta. 15 | 6.28 | 1.73 | 6.84 | 6.00 | 6.56 | 1100.00 | 100.00 | 15 | |
| Sta. 16 | 6.24 | 1.70 | 6.40 | 6.90 | 6.53 | 1166.00 | 66.00 | 16 | |
| Sta. 17 | 6.21 | 1.69 | 6.30 | 6.92 | 6.37 | 1200.00 | 41.00 | 17 | |
| Sta. 18 | 6.19 | 1.67 | 6.92 | 6.92 | 6.40 | 1300.00 | 100.00 | 18 | |
| Sta. 19 | 6.18 | 1.65 | 6.93 | 6.77 | 6.36 | 1328.00 | 28.00 | 19 | |
| Sta. 20 | 6.14 | 1.64 | 6.88 | 6.88 | 6.36 | 1400.00 | 71.00 | 20 | |
| Sta. 21 | 6.09 | 1.63 | 7.05 | 6.00 | 6.30 | 1494.00 | 94.00 | 21 | |
| Sta. 22 | 6.08 | 1.61 | 7.88 | 7.87 | 6.30 | 1500.00 | 6.00 | 22 | |
| Sta. 23 | 6.04 | 1.59 | 7.82 | 7.65 | 6.30 | 1504.00 | 4.00 | 23 | |
| Sta. 24 | 6.04 | 1.58 | 7.72 | 7.80 | 7.36 | 1800.00 | 78.00 | 24 | |
| Sta. 25 | 6.04 | 1.57 | 7.48 | 7.78 | 7.35 | 1800.00 | 20.00 | 25 | |
| Sta. 26 | 6.04 | 1.57 | 7.01 | 7.15 | 7.38 | 1844.00 | 44.00 | 26 | |
| Sta. 27 | 6.04 | 1.56 | 6.84 | 6.72 | 6.36 | 1700.00 | 56.00 | 27 | |
| Sta. 28 | 6.03 | 1.55 | 6.88 | 6.88 | 6.33 | 1724.00 | 24.00 | 28 | |

| | | | |
|--|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Aveyime Project Profile of Main Irrigation Canal and Secondary Canal No.6 | | | |
| DATE | MAR 1998 | DRAWING NO. | AV-06 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



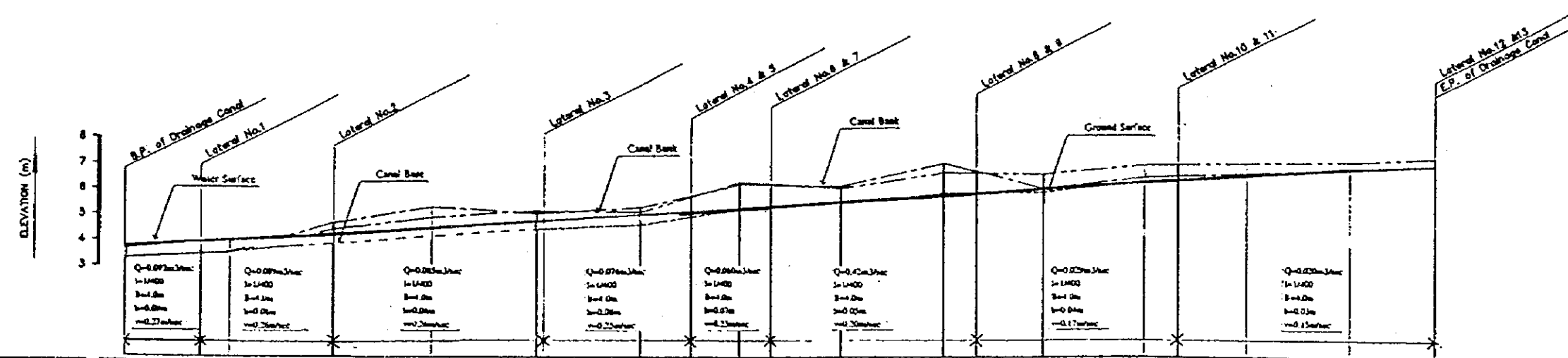
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|---------------------|--------------------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| PROPOSED | WATER SURFACE ELEVATION | 8.33 | 8.43 | 8.53 | 8.63 | 8.73 | 8.83 | 8.93 | 9.03 | 9.13 | 9.23 | 9.33 | 9.43 | 9.53 | 9.63 | 9.73 | 9.83 | 9.93 | |
| | CANAL BASE ELEVATION | 8.33 | 8.23 | 8.13 | 8.03 | 7.93 | 7.84 | 7.75 | 7.66 | 7.57 | 7.48 | 7.39 | 7.30 | 7.21 | 7.12 | 7.03 | 6.94 | 6.85 | 6.76 |
| EXISTING CONDITIONS | CANAL BANK ELE.(LEFT) | | | | | | | | | | | | | | | | | | |
| | CANAL BANK ELE.(RIGHT) | | | | | | | | | | | | | | | | | | |
| | GROUND SURFACE ELEVATION | 7.91 | 8.06 | 8.21 | 8.36 | 8.51 | 8.66 | 8.81 | 8.96 | 9.11 | 9.26 | 9.41 | 9.56 | 9.71 | 9.86 | 10.01 | 10.16 | 10.31 | 10.46 |
| | REDUCED DISTANCE | 0.00 | 100.00 | 200.00 | 300.00 | 400.00 | 500.00 | 600.00 | 700.00 | 800.00 | 900.00 | 1000.00 | 1100.00 | 1200.00 | 1300.00 | 1400.00 | 1500.00 | 1600.00 | 1700.00 |
| | DISTANCE | 0.00 | 100.00 | 200.00 | 300.00 | 400.00 | 500.00 | 600.00 | 700.00 | 800.00 | 900.00 | 1000.00 | 1100.00 | 1200.00 | 1300.00 | 1400.00 | 1500.00 | 1600.00 | 1700.00 |
| | STATION NO. | 0+00 | 0+100 | 0+200 | 0+300 | 0+400 | 0+500 | 0+600 | 0+700 | 0+800 | 0+900 | 0+1000 | 0+1100 | 0+1200 | 0+1300 | 0+1400 | 0+1500 | 0+1600 | 0+1700 |

THE REPUBLIC OF GHANA

THE PROJECT FOR
REHABILITATION OF IRRIGATION

TITLE OF DRAWING
Aveyime Project
Profile of Left Main Drain

| | | | |
|---|----------|-------------|-------|
| DATE | MAR 1998 | DRAWING NO. | AV-07 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



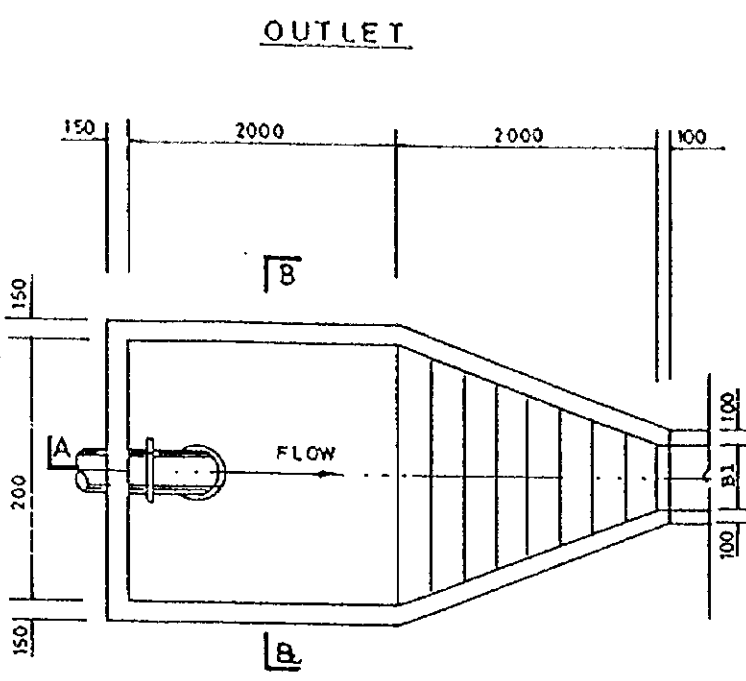
| PROPOSED | WATER SURFACE ELEVATION | 3.80 | 3.80 | 4.00 | 4.30 | 4.30 | 4.55 | 4.80 | 4.80 | 5.17 | 5.30 | 5.30 | 5.50 | 5.80 | 6.00 | 6.30 | 6.55 | 6.80 | 7.00 | | |
|--------------------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | CANAL BASE ELEVATION | | | | | | | | | 4.80 | 5.20 | 5.20 | 5.50 | 5.75 | 5.80 | 6.00 | 6.25 | 6.50 | 6.80 | 7.00 | |
| EXISTING CONDITIONS | CANAL BANK ELE.(LEFT) | 3.30 | 3.40 | 3.85 | 4.45 | 4.45 | 4.90 | 5.10 | 5.18 | 5.74 | 5.31 | 5.20 | 5.08 | 5.87 | 5.80 | 6.01 | 6.35 | 6.60 | 6.87 | 7.20 | |
| | CANAL BANK ELE.(RIGHT) | 3.30 | 3.00 | 3.85 | 4.75 | 4.75 | 5.30 | 5.10 | 5.30 | 5.78 | 5.31 | 5.20 | 5.14 | 5.87 | 5.70 | 6.00 | 6.47 | 6.60 | 6.83 | 7.10 | 7.20 |
| GROUND SURFACE ELEVATION | | 3.20 | 3.50 | 3.70 | 4.07 | 3.97 | 4.30 | 4.50 | 4.74 | 5.10 | 5.30 | 5.44 | 5.68 | 6.07 | 5.97 | 6.20 | 7.08 | 6.64 | 6.90 | 7.37 | 7.40 |
| REDUCED DISTANCE | | 0.00 | 72.00 | 100.00 | 200.00 | 202.00 | 300.00 | 400.00 | 400.00 | 500.00 | 600.00 | 632.00 | 700.00 | 800.00 | 832.00 | 900.00 | 1000.00 | 1032.00 | 1100.00 | 1200.00 | 1282.00 |
| DISTANCE | | 0.00 | 72.00 | 28.00 | 100.00 | 2.00 | 98.00 | 100.00 | 83.00 | 64.00 | 60.00 | 32.00 | 68.00 | 100.00 | 32.00 | 48.00 | 100.00 | 32.00 | 68.00 | 100.00 | 82.00 |
| STATION NO. | | Sta. 0 | Sta. 1 | Sta. 2 | Sta. 3 | Sta. 4 | Sta. 5 | Sta. 6 | Sta. 7 | Sta. 8 | Sta. 9 | Sta. 10 | Sta. 11 | Sta. 12 | Sta. 13 | Sta. 14 | Sta. 15 | Sta. 16 | Sta. 17 | Sta. 18 | |

THE REPUBLIC OF GHANA

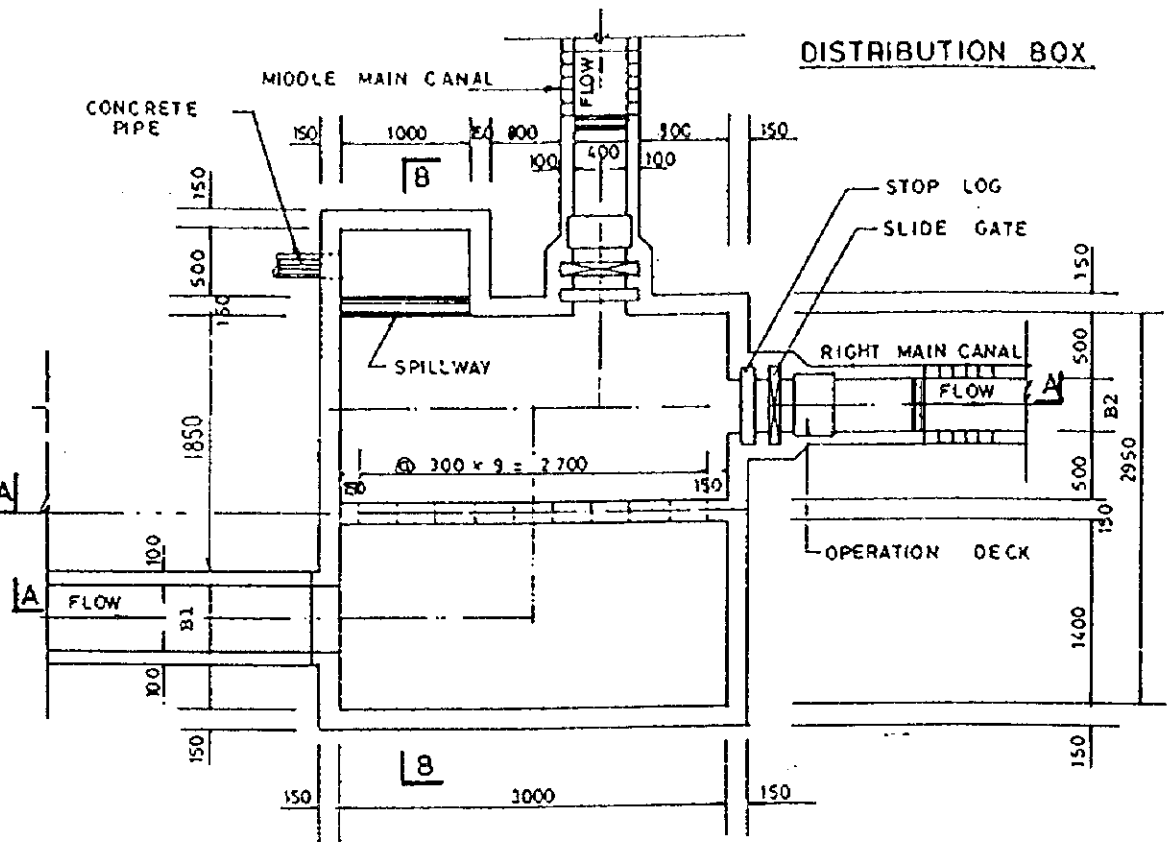
THE PROJECT FOR
REHABILITATION OF IRRIGATION

TITLE OF DRAWING
Aveyime Project
Profile of Right Main Drain

| | | | |
|---|----------|-------------|-------|
| DATE | MAR 1998 | DRAWING NO. | AV-08 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |



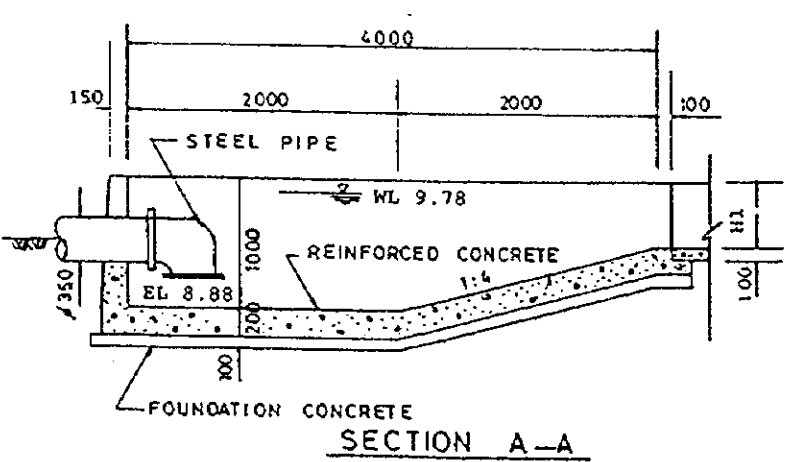
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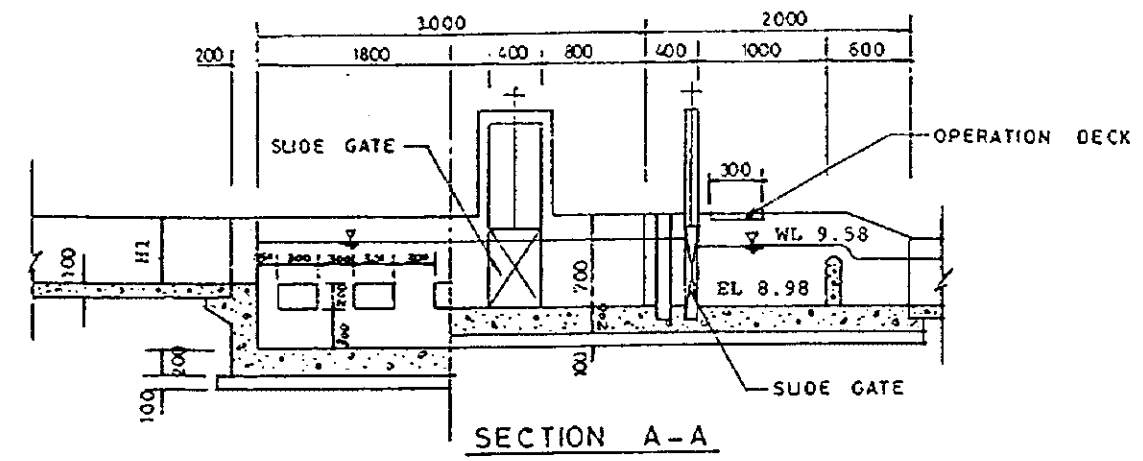
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OUTLET & DISTRIBUTION BOX

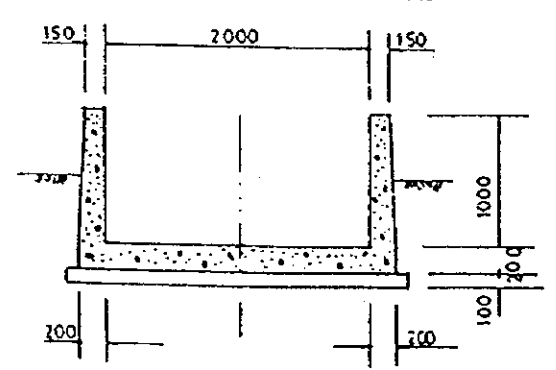
| | |
|----|-----|
| B1 | 600 |
| B2 | 500 |
| H1 | 700 |



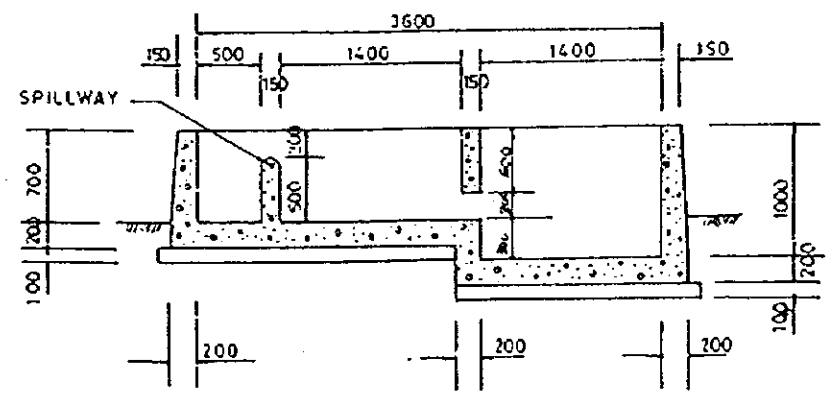
SECTION A-A



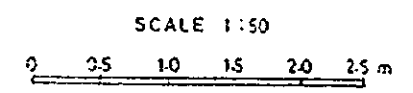
SECTION A-A



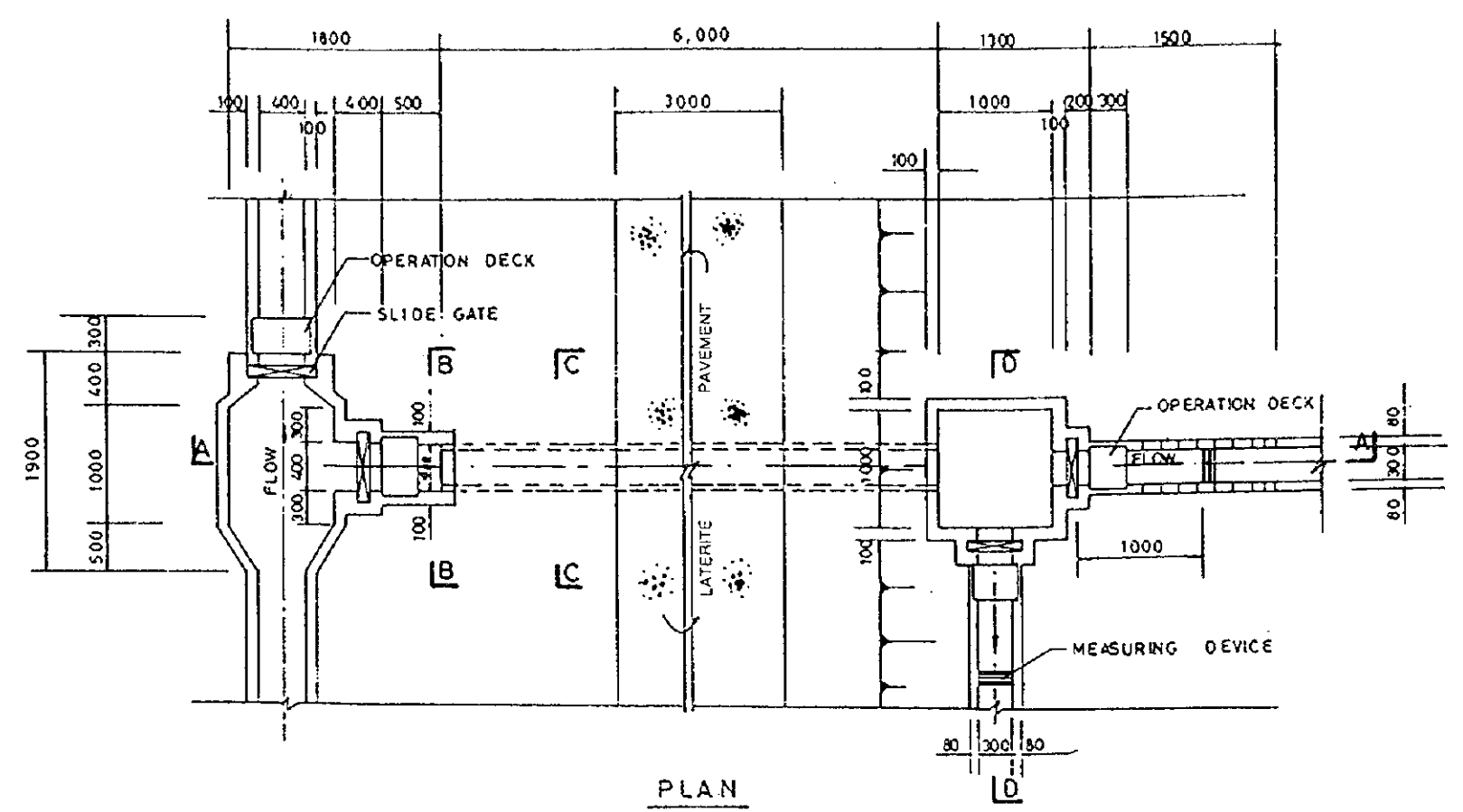
SECTION B-B



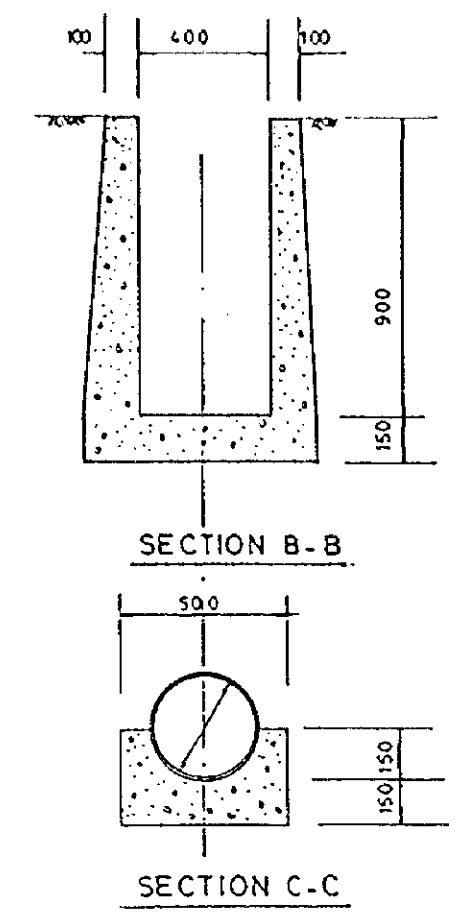
SECTION B-B



| | | | |
|--|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Aveyime Project Outlet and Distribution Box for Main Irrigation Canal | | | |
| DATE | MAR 1998 | DRAWING NO. | AV-09 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD | | | |

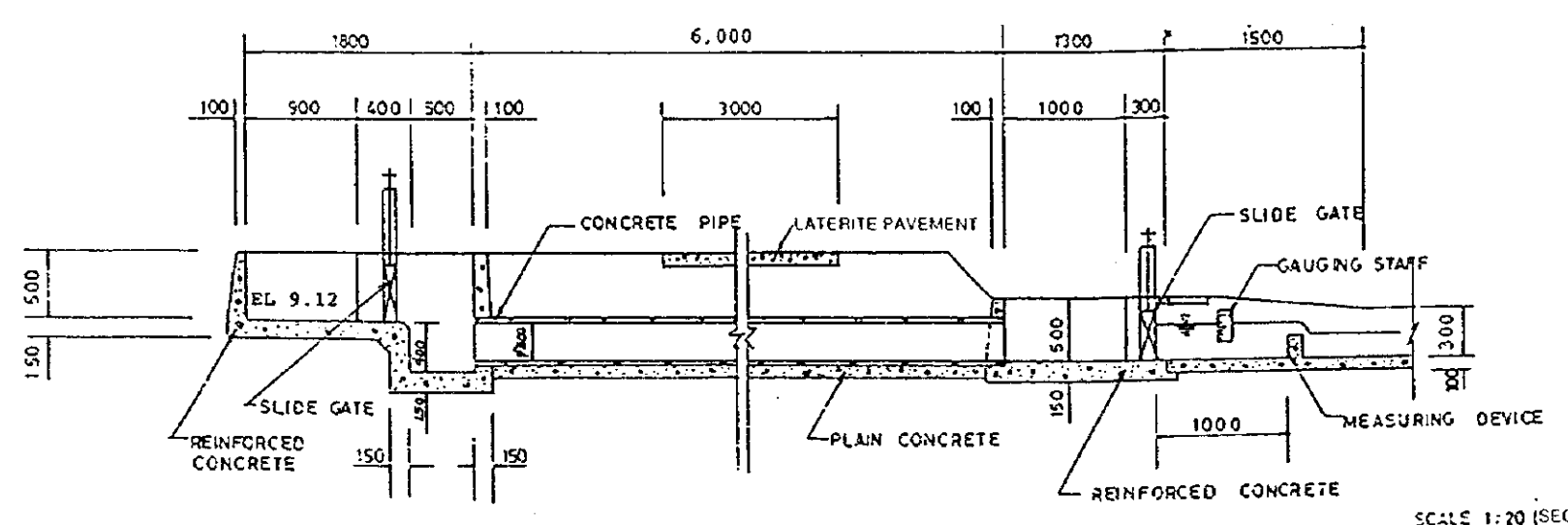


PLAN

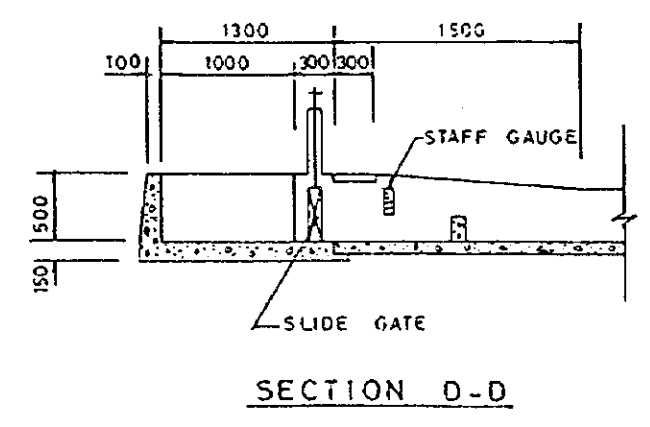


SECTION B-B

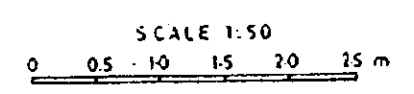
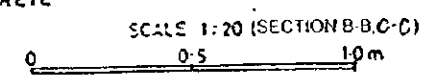
SECTION C-C



SECTION A-A



SECTION D-D



| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Aveyime Project Turnout No.1 on the Main Canal | | | |
| DATE | MAR 1998 | DRAWING NO. | AV-10 |
| NIPPON KOBELCO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |

VOLTA LAKE

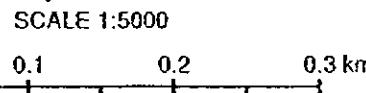
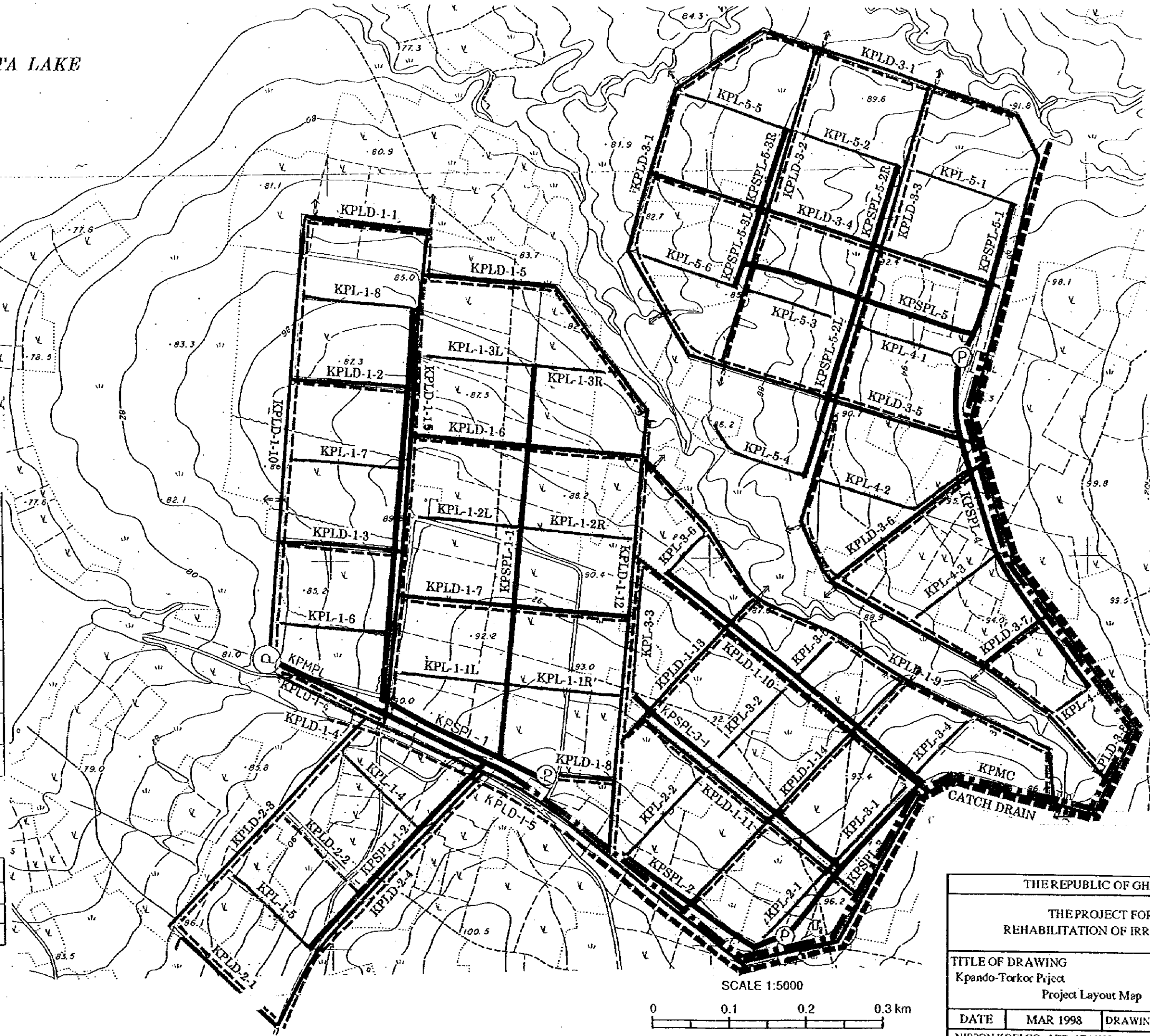
Kpando-Torkor

Legend

| | |
|--------------------|-------|
| Main Pipeline | |
| Secondary Pipeline | |
| Lateral Pipeline | |
| Lateral Drain | |
| Main Canal | |
| Pump Station | Large |
| | Small |
| Drainage Culvert | |
| Drainage Outlet | |

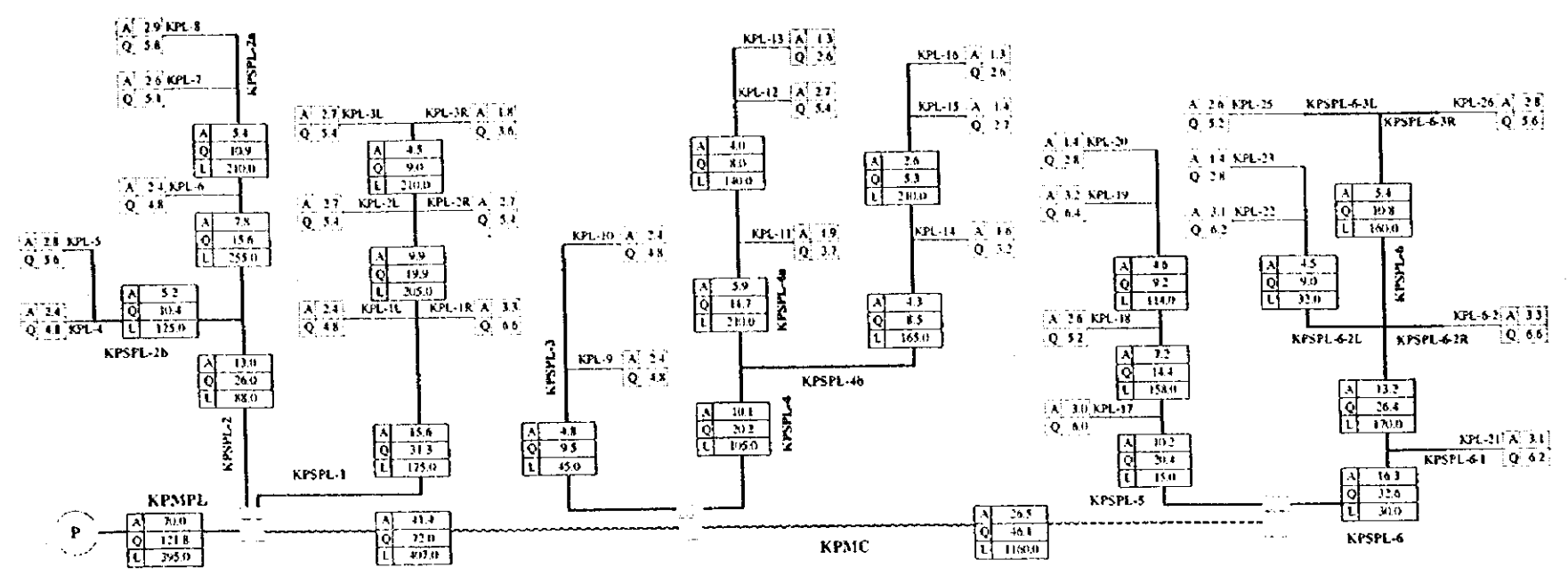
Farm Road Network Legend

| | |
|--|----------------------------------|
| | Main Farm Road (Paddy Field) |
| | Lateral Farm Road (Paddy Field) |
| | Main Farm Road (Upland Field) |
| | Lateral Farm Road (Upland Field) |



| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Kpando-Torkor Project Project Layout Map | | | |
| DATE | MAR 1998 | DRAWING NO. | KP-01 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |

Irrigation Diagram

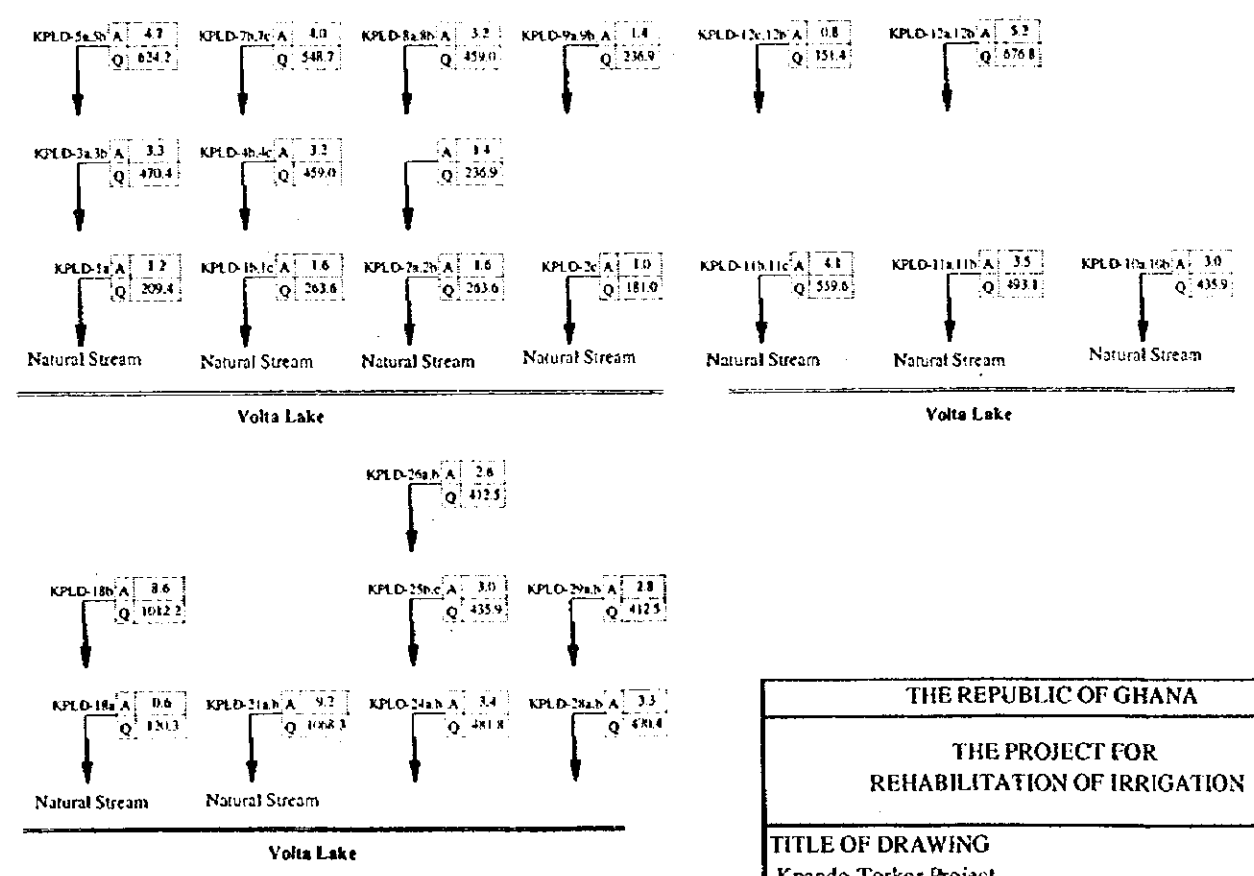


Upland Field Block
(Unit Design Discharge : 2.00 lit/sec/ha)

Open Channel : KPMC
(Unit Design Discharge : 1.74 lit/sec/ha)

A: Area (ha)
Q: Discharge (lit/sec)
L: Length (m)

Drainage Diagram



Upland Field Block
(Unit Design Discharge : Q (lit/s)=0.181A^{4/5}*1000)

A: Area (ha)
Q: Drainage Discharge (lit/sec)
L: Length (m)

| | | | |
|---|----------|-------------|-------|
| THE REPUBLIC OF GHANA | | | |
| THE PROJECT FOR REHABILITATION OF IRRIGATION | | | |
| TITLE OF DRAWING Kpando-Torkor Project Diagram for Irrigation and Drainage System | | | |
| DATE | MAR 1998 | DRAWING NO. | KP-02 |
| NIPPON KOEI CO., LTD. / TAIYO CONSULTANTS CO., LTD. | | | |