# TENDER DOCUMENT

# FOR

# Distribution Network for Amba Division of Right Main Canal (RMC), Bihar Portion under North Koel Reservoir Project, Jharkhand and Bihar

**Estimated Cost (Rs. 64.12 Crores)**

**TENDER NO: WAP/NK/RMC/DIST/AMBA/2025**

## TENDER DRAWINGS

**Issued to M/s**

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WAPCOS

(भारत सरकार का उपक्रम–जल शक्ति मंत्रालय)

(A Government of India Undertaking-Ministry of Jal Shakti)

# NORTH KOEL RESERVOIR PROJECT

JANUARY 2025

## Completion of Balance Works of North Koel Reservoir Project

**DRAWING REPORT – MAHAURY SUB DY. (OFFTAKING FROM RIGHT MAIN CANAL AT 47.49 KM)**








**WAPCOS LIMITED**

**(GOVT. OF INDIA UNDERTAKING)**

**76- C SECTOR-18 INDUSTRIAL AREA, GURUGRAM-122015 (HARYANA)**

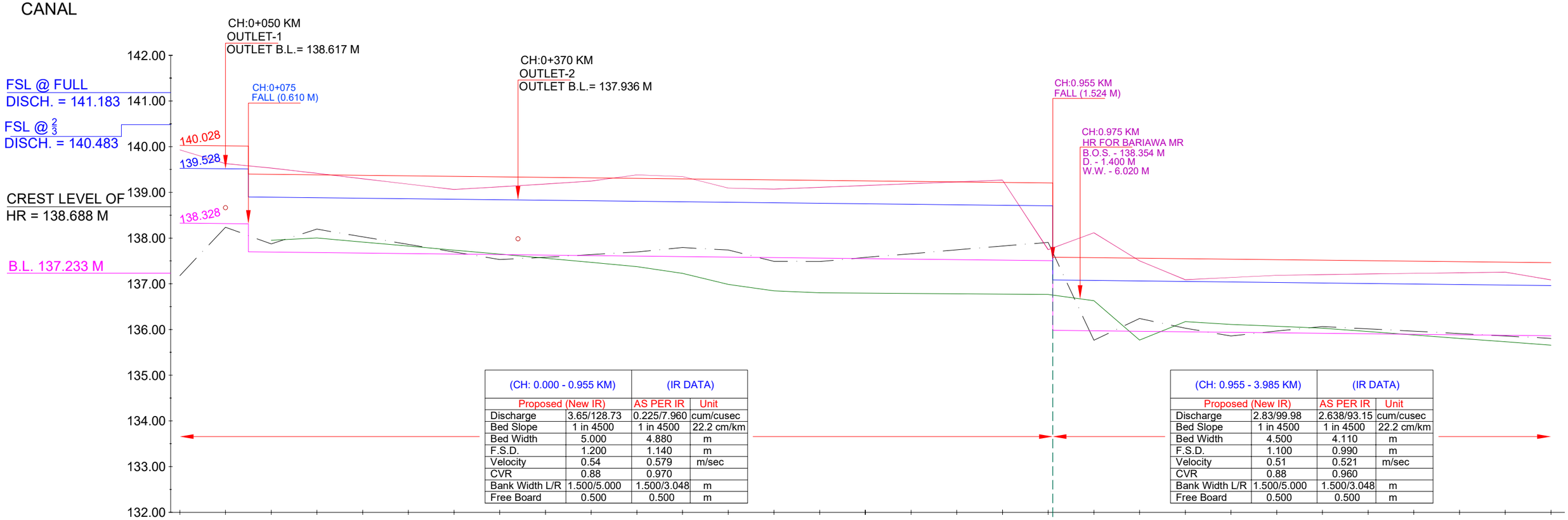
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# *L-SECTION*

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 0+000 TO 1+500

DATA OF PARENT CANAL

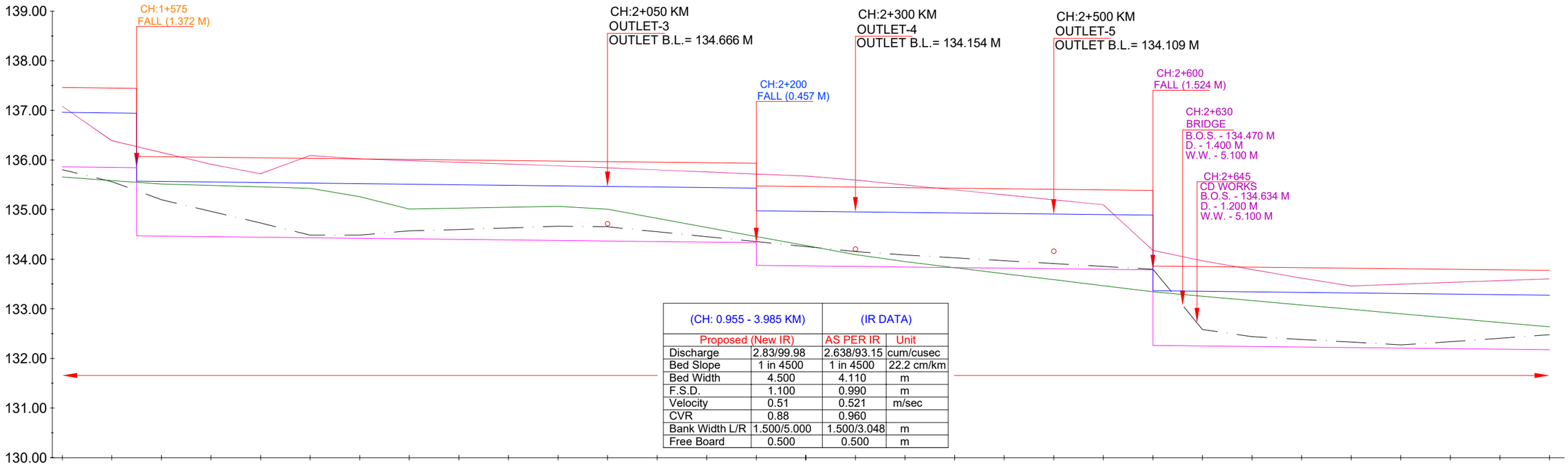



| (CH: 0.000 - 0.955 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 3.65/128.73 | 0.225/7.960 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 5.000 | 4.880 | m |
| F.S.D. | 1.200 | 1.140 | m |
| Velocity | 0.54 | 0.579 | m/sec |
| CVR | 0.88 | 0.970 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 0.955 - 3.985 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 2.83/99.98 | 2.638/93.15 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 4.500 | 4.110 | m |
| F.S.D. | 1.100 | 0.990 | m |
| Velocity | 0.51 | 0.521 | m/sec |
| CVR | 0.88 | 0.960 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | |

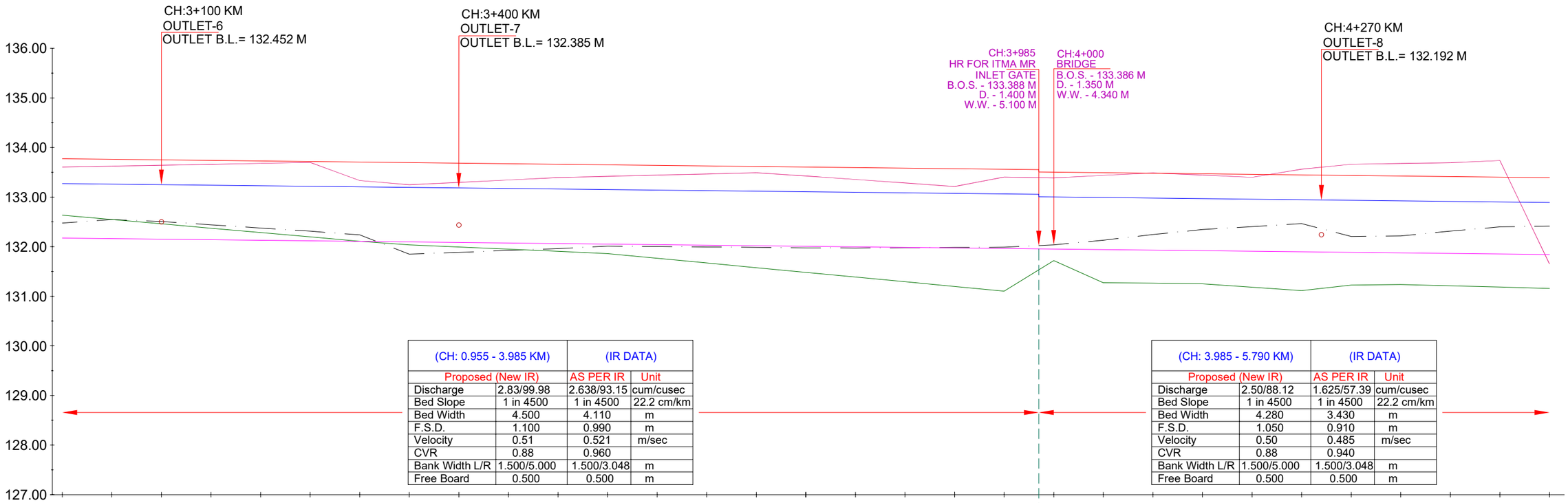
# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 1+500 TO 3+000




| (CH: 0.955 - 3.985 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 2.83/99.98 | 2.638/93.15 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 4.500 | 4.110 | m |
| F.S.D. | 1.100 | 0.990 | m |
| Velocity | 0.51 | 0.521 | m/sec |
| CVR | 0.88 | 0.960 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 3+000 TO 4+500

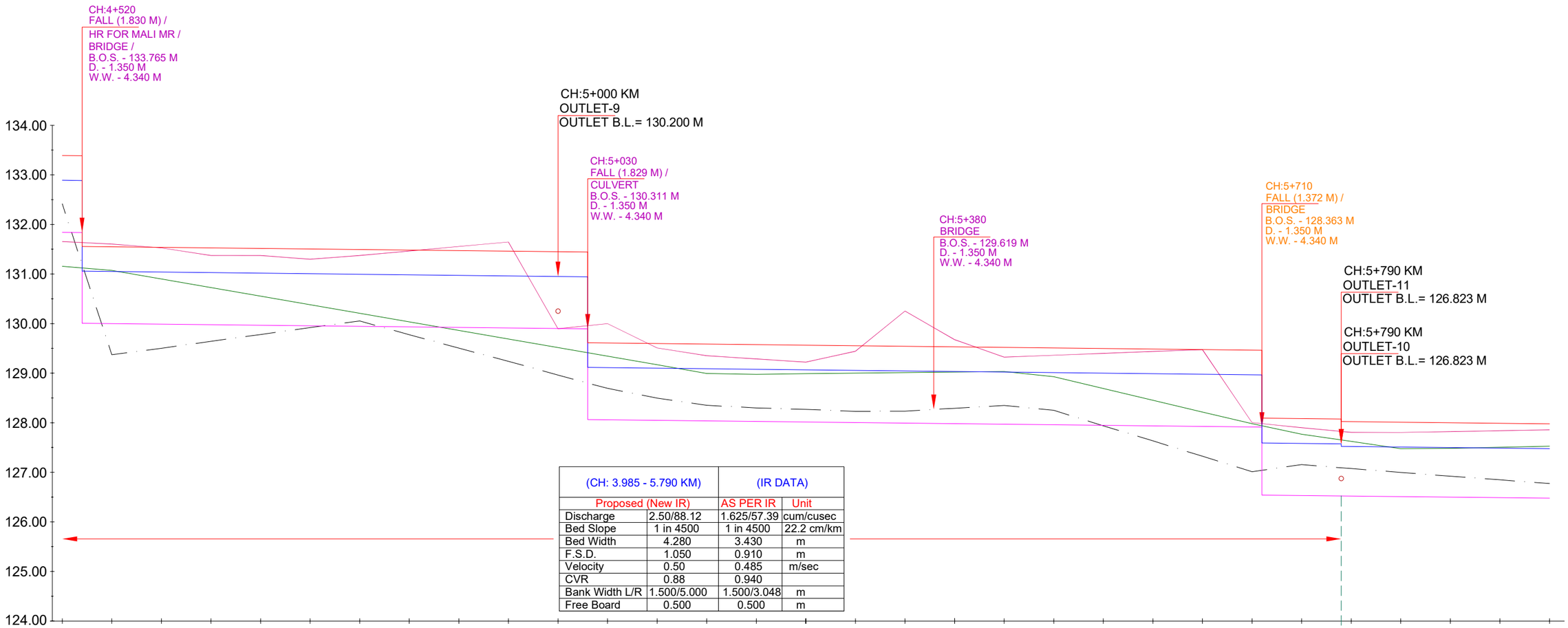



| (CH: 0.955 - 3.985 KM) | (IR DATA) | |
|---|---|---|
| Proposed (New IR) | AS PER IR | Unit |
| Discharge 2.83/99.98 | 2.638/93.15 | cum/cusec |
| Bed Slope 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width 4.500 | 4.110 | m |
| F.S.D. 1.100 | 0.990 | m |
| Velocity 0.51 | 0.521 | m/sec |
| CVR 0.88 | 0.960 | |
| Bank Width L/R 1.500/5.000 | 1.500/3.048 | m |
| Free Board 0.500 | 0.500 | m |

| (CH: 3.985 - 5.790 KM) | (IR DATA) | |
|---|---|---|
| Proposed (New IR) | AS PER IR | Unit |
| Discharge 2.50/88.12 | 1.625/57.39 | cum/cusec |
| Bed Slope 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width 4.280 | 3.430 | m |
| F.S.D. 1.050 | 0.910 | m |
| Velocity 0.50 | 0.485 | m/sec |
| CVR 0.88 | 0.940 | |
| Bank Width L/R 1.500/5.000 | 1.500/3.048 | m |
| Free Board 0.500 | 0.500 | m |

| | | |

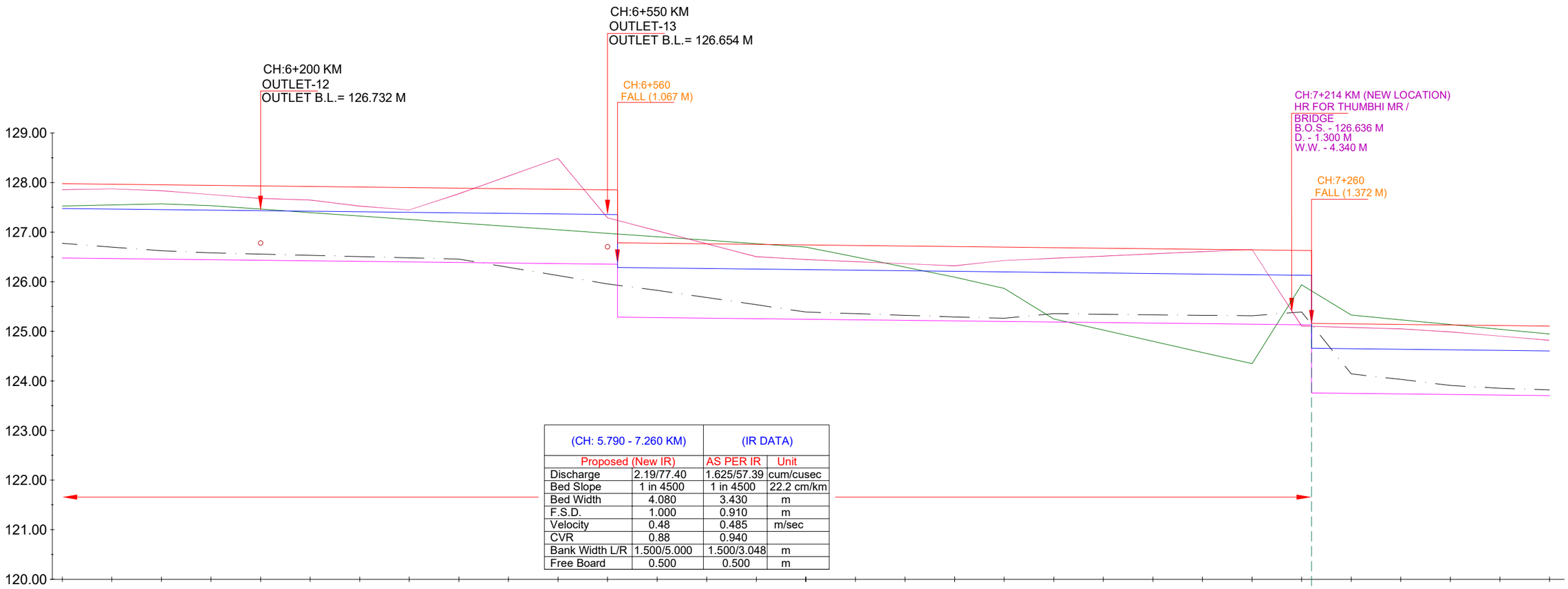
# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 4+500 TO 6+000




| (CH: 3.985 - 5.790 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 2.50/88.12 | 1.625/57.39 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 4.280 | 3.430 | m |
| F.S.D. | 1.050 | 0.910 | m |
| Velocity | 0.50 | 0.485 | m/sec |
| CVR | 0.88 | 0.940 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 6+000 TO 7+500




| (CH: 5.790 - 7.260 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 2.19/77.40 | 1.625/57.39 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 4.080 | 3.430 | m |
| F.S.D. | 1.000 | 0.910 | m |
| Velocity | 0.48 | 0.485 | m/sec |
| CVR | 0.88 | 0.940 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 6+000 | 6+050 | 6+100 | 6+150 | 6+200 | 6+250 | 6+300 | 6+350 | 6+400 | 6+450 | 6+500 | 6+550 | 6+600 | 6+650 | 6+700 | 6+750 | 6+800 | 6+850 | 6+900 | 6+950 | 7+000 | 7+050 | 7+100 | 7+150 | 7+200 | 7+250 | 7+260 | 7+300 | 7+350 | 7+400 | 7+450 | 7+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 127.977 | 127.966 | 127.954 | 127.943 | 127.932 | 127.921 | 127.910 | 127.899 | 127.888 | 127.877 | 127.866 | 127.854 | 127.852 | 126.785 | 126.776 | 126.765 | 126.754 | 126.743 | 126.732 | 126.721 | 126.710 | 126.699 | 126.687 | 126.676 | 126.665 | 126.654 | 126.643 | 126.632 | 126.630 | 125.158 | 125.149 | 125.138 | 125.127 | 125.115 | 125.104 |
| | F.S.L. | 127.477 | 127.466 | 127.454 | 127.443 | 127.432 | 127.421 | 127.410 | 127.399 | 127.388 | 127.377 | 127.366 | 127.354 | 127.352 | 126.285 | 126.276 | 126.265 | 126.254 | 126.243 | 126.232 | 126.221 | 126.210 | 126.199 | 126.187 | 126.176 | 126.165 | 126.154 | 126.143 | 126.132 | 126.130 | 124.658 | 124.649 | 124.638 | 124.627 | 124.615 | 124.604 |
| | Proposed Bed Level | 126.477 | 126.466 | 126.454 | 126.443 | 126.432 | 126.421 | 126.410 | 126.399 | 126.388 | 126.377 | 126.366 | 126.354 | 126.352 | 125.285 | 125.276 | 125.265 | 125.254 | 125.243 | 125.232 | 125.221 | 125.210 | 125.199 | 125.187 | 125.176 | 125.165 | 125.154 | 125.143 | 125.132 | 125.130 | 123.758 | 123.749 | 123.738 | 123.727 | 123.715 | 123.704 |
| EXISTING DATA | Bed Level | 126.773 | 126.698 | 126.624 | 126.582 | 126.557 | 126.532 | 126.507 | 126.482 | 126.457 | 126.291 | 126.124 | 125.956 | 125.825 | 125.680 | 125.537 | 125.388 | 125.356 | 125.323 | 125.290 | 125.263 | 125.356 | 125.343 | 125.332 | 125.322 | 125.314 | 125.391 | | 124.142 | 124.030 | 123.909 | 123.850 | 123.819 |
| | TOP OF BANK LEVEL | 127.856 | 127.873 | 127.835 | 127.757 | 127.680 | 127.649 | 127.525 | 127.447 | 127.773 | 128.130 | 128.487 | 127.289 | 127.028 | 126.766 | 126.504 | 126.446 | 126.405 | 126.363 | 126.322 | 126.428 | 126.472 | 126.517 | 126.562 | 126.606 | 126.651 | 125.107 | | 125.078 | 125.049 | 124.987 | 124.903 | 124.820 |
| | NSL | 127.527 | 127.549 | 127.571 | 127.533 | 127.464 | 127.394 | 127.324 | 127.255 | 127.185 | 127.115 | 127.046 | 126.976 | 126.907 | 126.837 | 126.767 | 126.698 | 126.498 | 126.296 | 126.094 | 125.866 | 125.251 | 125.025 | 124.800 | 124.573 | 124.348 | 125.937 | | 125.328 | 125.233 | 125.137 | 125.042 | 124.947 |
| | Chainage IN KM | 6+000 | 6+050 | 6+100 | 6+150 | 6+200 | 6+250 | 6+300 | 6+350 | 6+400 | 6+450 | 6+500 | 6+550 | 6+600 | 6+650 | 6+700 | 6+750 | 6+800 | 6+850 | 6+900 | 6+950 | 7+000 | 7+050 | 7+100 | 7+150 | 7+200 | 7+250 | 7+260 | 7+300 | 7+350 | 7+400 | 7+450 | 7+500 |

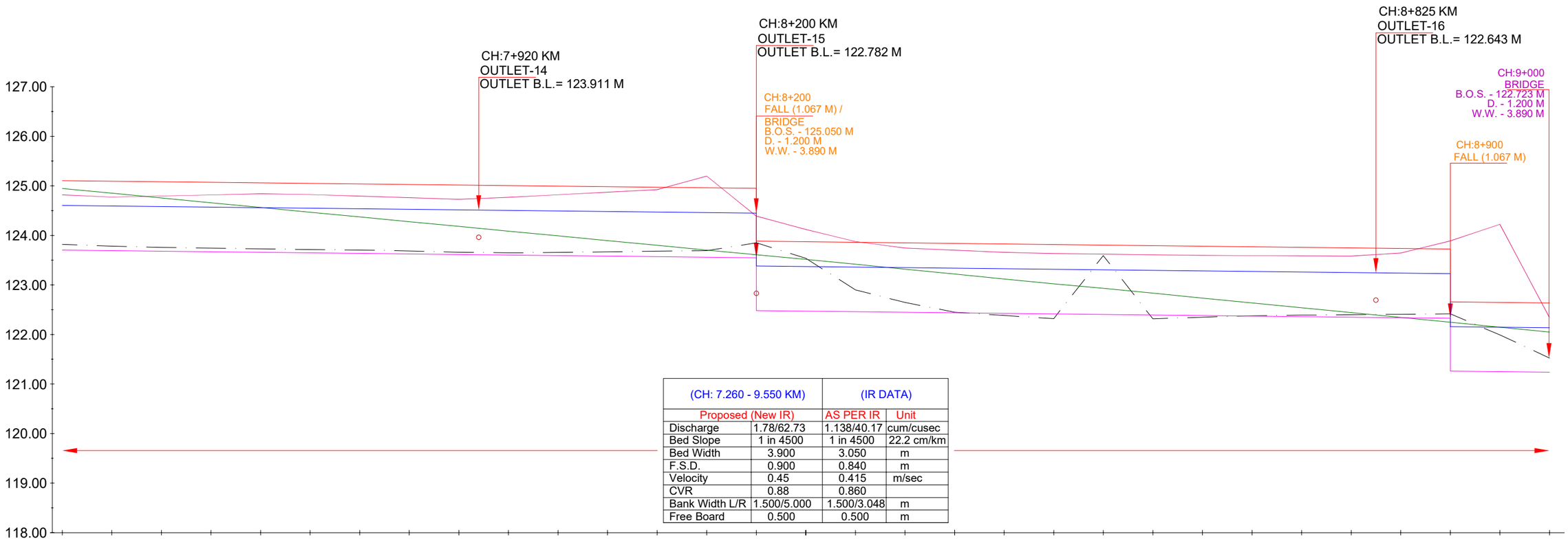
LEGEND

| | | | |
|---|---|---|---|
| NSL | | EXISTING BED LEVEL | |
| EXISTING TOP OF BANK | | PROPOSED BED LEVEL | |
| EXISTING STRUCTURE | | PROPOSED FSL | |
| MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL | |
| NEW STRUCTURE | | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ LSEC- 05 of 14 |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 7+500 TO 9+000




| (CH: 7.260 - 9.550 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 1.78/62.73 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 3.900 | 3.050 | m |
| F.S.D. | 0.900 | 0.840 | m |
| Velocity | 0.45 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 7+500 | 7+550 | 7+600 | 7+650 | 7+700 | 7+750 | 7+800 | 7+850 | 7+900 | 7+950 | 8+000 | 8+050 | 8+100 | 8+150 | 8+200 | 8+250 | 8+300 | 8+350 | 8+400 | 8+450 | 8+500 | 8+550 | 8+600 | 8+650 | 8+700 | 8+750 | 8+800 | 8+850 | 8+900 | 8+950 | 9+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 125.104 | 125.093 | 125.082 | 125.071 | 125.060 | 125.049 | 125.038 | 125.027 | 125.015 | 125.004 | 124.993 | 124.982 | 124.971 | 124.960 | 124.949<br>123.882 | 123.871 | 123.860 | 123.848 | 123.837 | 123.826 | 123.815 | 123.804 | 123.793 | 123.782 | 123.771 | 123.760 | 123.748 | 123.737 | 123.726<br>122.659 | 122.648 | 122.637 |
| | F.S.L. | 124.604 | 124.593 | 124.582 | 124.571 | 124.560 | 124.549 | 124.538 | 124.527 | 124.515 | 124.504 | 124.493 | 124.482 | 124.471 | 124.460 | 124.449<br>123.382 | 123.371 | 123.360 | 123.348 | 123.337 | 123.326 | 123.315 | 123.304 | 123.293 | 123.282 | 123.271 | 123.260 | 123.248 | 123.237 | 123.226<br>122.159 | 122.148 | 122.137 |
| | Proposed Bed Level | 123.704 | 123.693 | 123.682 | 123.671 | 123.660 | 123.649 | 123.638 | 123.627 | 123.615 | 123.604 | 123.593 | 123.582 | 123.571 | 123.560 | 123.549<br>122.482 | 122.471 | 122.460 | 122.448 | 122.437 | 122.426 | 122.415 | 122.404 | 122.393 | 122.382 | 122.371 | 122.360 | 122.348 | 122.337 | 122.326<br>121.259 | 121.248 | 121.237 |
| EXISTING DATA | Bed Level | 123.819 | 123.783 | 123.758 | 123.743 | 123.729 | 123.714 | 123.705 | 123.685 | 123.660 | 123.648 | 123.657 | 123.669 | 123.680 | 123.692 | 123.850 | 123.537 | 122.901 | 122.646 | 122.450 | 122.383 | 122.319 | 122.284 | 122.316 | 122.349 | 122.379 | 122.391 | 122.398 | 122.407 | 122.416 | 121.993 | 121.523 |
| | TOP OF BANK LEVEL | 124.820 | 124.774 | 124.795 | 124.817 | 124.840 | 124.824 | 124.792 | 124.760 | 124.729 | 124.769 | 124.820 | 124.872 | 124.923 | 125.197 | 124.390 | 124.120 | 123.877 | 123.744 | 123.701 | 123.658 | 123.634 | 123.621 | 123.608 | 123.597 | 123.592 | 123.587 | 123.582 | 123.644 | 123.890 | 124.224 | 122.344 |
| | NSL | 124.947 | 124.851 | 124.755 | 124.659 | 124.564 | 124.468 | 124.372 | 124.277 | 124.182 | 124.087 | 123.991 | 123.896 | 123.800 | 123.705 | 123.609 | 123.515 | 123.417 | 123.319 | 123.220 | 123.121 | 123.023 | 122.932 | 122.834 | 122.735 | 122.638 | 122.540 | 122.442 | 122.344 | 122.246 | 122.148 | 122.050 |
| | Chainage IN KM | 7+500 | 7+550 | 7+600 | 7+650 | 7+700 | 7+750 | 7+800 | 7+850 | 7+900 | 7+950 | 8+000 | 8+050 | 8+100 | 8+150 | 8+200 | 8+250 | 8+300 | 8+350 | 8+400 | 8+450 | 8+500 | 8+550 | 8+600 | 8+650 | 8+700 | 8+750 | 8+800 | 8+850 | 8+900 | 8+950 | 9+000 |

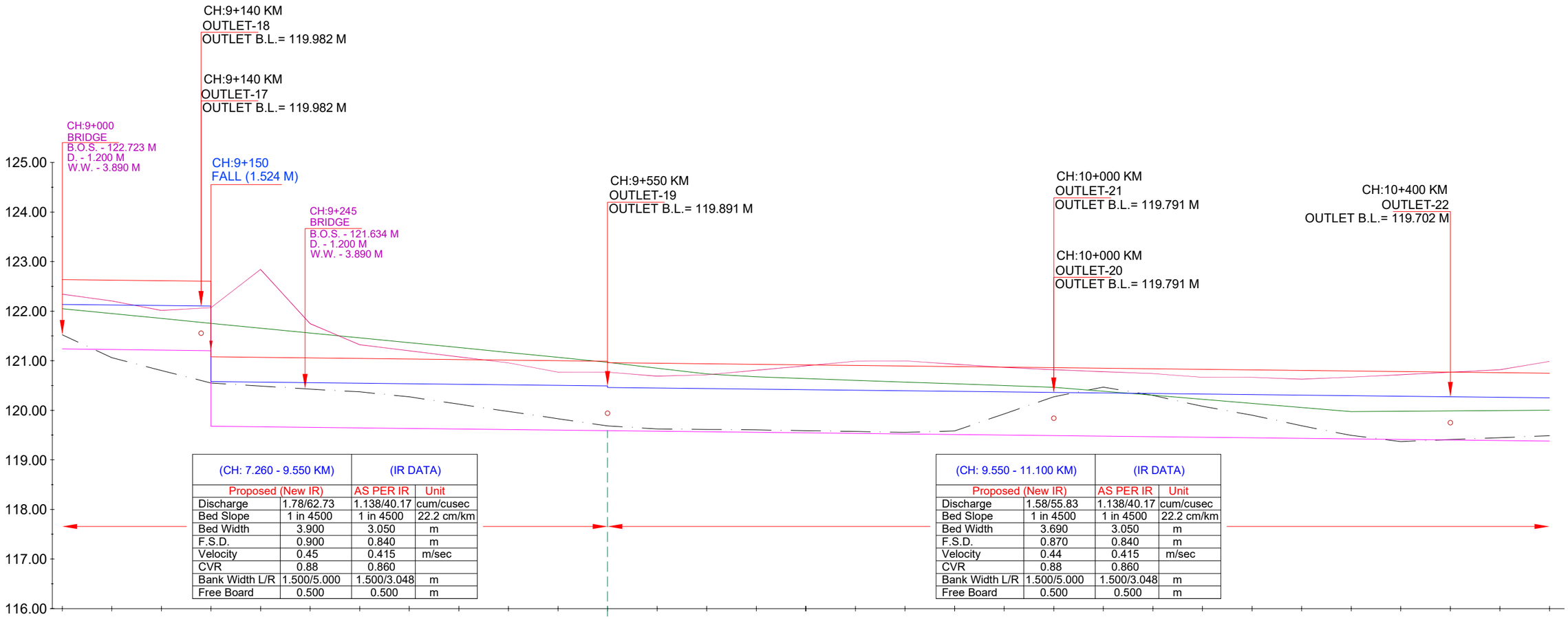
LEGEND

| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ LSEC- 06 of 14 |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 9+000 TO 10+500




| (CH: 7.260 - 9.550 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 1.78/62.73 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 3.900 | 3.050 | m |
| F.S.D. | 0.900 | 0.840 | m |
| Velocity | 0.45 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 9.550 - 11.100 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 1.58/55.83 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 3.690 | 3.050 | m |
| F.S.D. | 0.870 | 0.840 | m |
| Velocity | 0.44 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 122.637 | 122.626 | 122.615 | 122.604 | 121.080 | 121.069 | 121.057 | 121.046 | 121.035 | 121.024 | 121.013 | 121.002 | 120.991 | 120.861 | 120.950 | 120.939 | 120.927 | 120.916 | 120.905 | 120.894 | 120.883 | 120.872 | 120.861 | 120.850 | 120.839 | 120.827 | 120.816 | 120.805 | 120.794 | 120.783 | 120.772 | 120.761 | 120.750 |
| | F.S.L. | 122.137 | 122.126 | 122.115 | 122.104 | 120.580 | 120.569 | 120.557 | 120.546 | 120.535 | 120.524 | 120.513 | 120.502 | 120.491 | 120.461 | 120.450 | 120.439 | 120.427 | 120.416 | 120.405 | 120.394 | 120.383 | 120.372 | 120.361 | 120.350 | 120.339 | 120.327 | 120.316 | 120.305 | 120.294 | 120.283 | 120.272 | 120.261 | 120.250 |
| | Proposed Bed Level | 121.237 | 121.226 | 121.215 | 121.204 | 119.680 | 119.669 | 119.657 | 119.646 | 119.635 | 119.624 | 119.613 | 119.602 | 119.591 | | 119.580 | 119.569 | 119.557 | 119.546 | 119.535 | 119.524 | 119.513 | 119.502 | 119.491 | 119.480 | 119.469 | 119.457 | 119.446 | 119.435 | 119.424 | 119.413 | 119.402 | 119.391 | 119.380 |
| EXISTING DATA | Bed Level | 121.523 | 121.061 | 120.804 | 120.551 | 120.489 | 120.428 | 120.372 | 120.271 | 120.124 | 119.978 | 119.831 | 119.685 | | 119.625 | 119.615 | 119.605 | 119.589 | 119.572 | 119.556 | 119.583 | 119.928 | 120.274 | 120.467 | 120.300 | 120.080 | 119.903 | 119.688 | 119.495 | 119.370 | 119.410 | 119.448 | 119.488 | |
| | TOP OF BANK LEVEL | 122.344 | 122.206 | 122.014 | 122.071 | 122.841 | 121.749 | 121.324 | 121.201 | 121.079 | 120.957 | 120.850 | 120.770 | | 120.689 | 120.716 | 120.807 | 120.899 | 120.990 | 120.997 | 120.932 | 120.867 | 120.818 | 120.779 | 120.741 | 120.704 | 120.666 | 120.628 | 120.669 | 120.719 | 120.768 | 120.818 | 120.986 | |
| | NSL | 122.050 | 121.952 | 121.853 | 121.755 | 121.658 | 121.559 | 121.461 | 121.364 | 121.266 | 121.168 | 121.070 | 120.967 | | 120.851 | 120.735 | 120.675 | 120.640 | 120.605 | 120.570 | 120.535 | 120.500 | 120.465 | 120.386 | 120.304 | 120.221 | 120.138 | 120.056 | 119.973 | 119.980 | 119.987 | 119.994 | 120.001 | |
| | Chainage IN KM | 9+000 | 9+050 | 9+100 | 9+150 | 9+200 | 9+250 | 9+300 | 9+350 | 9+400 | 9+450 | 9+500 | 9+550 | | 9+600 | 9+650 | 9+700 | 9+750 | 9+800 | 9+850 | 9+900 | 9+950 | 10+000 | 10+050 | 10+100 | 10+150 | 10+200 | 10+250 | 10+300 | 10+350 | 10+400 | 10+450 | 10+500 | |

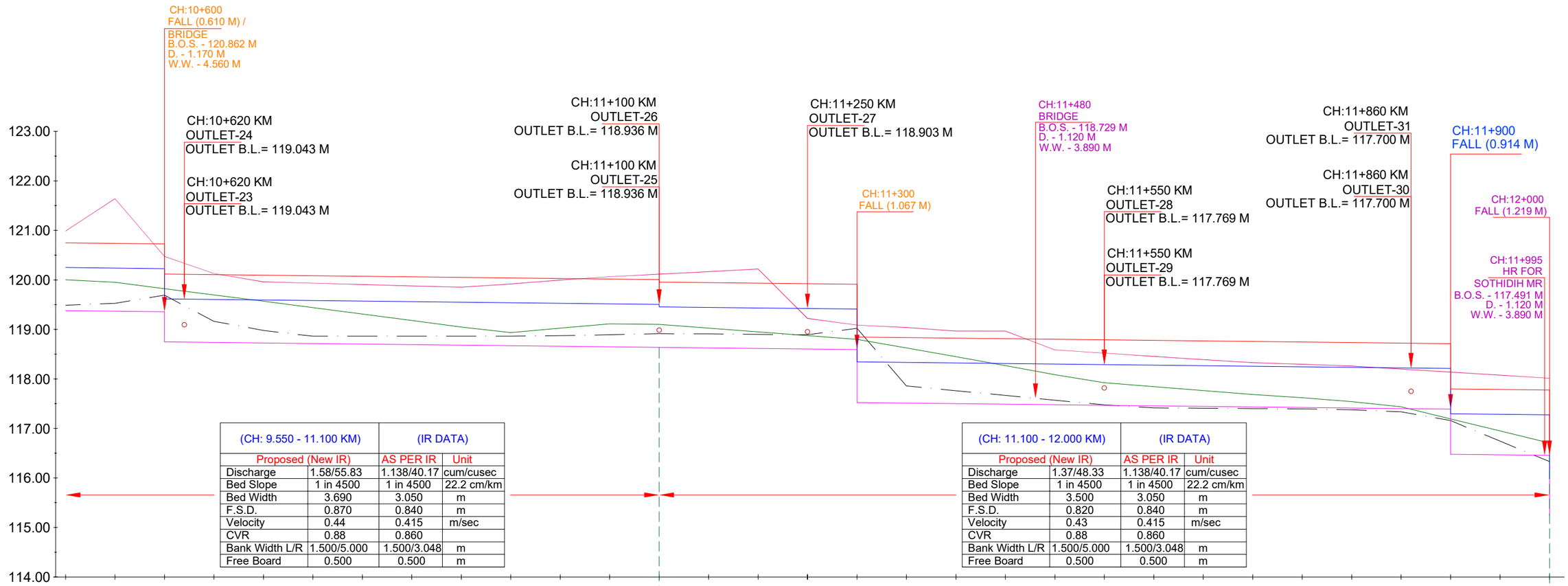
LEGEND

| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ LSEC- 07 of 14 |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 10+500 TO 12+000

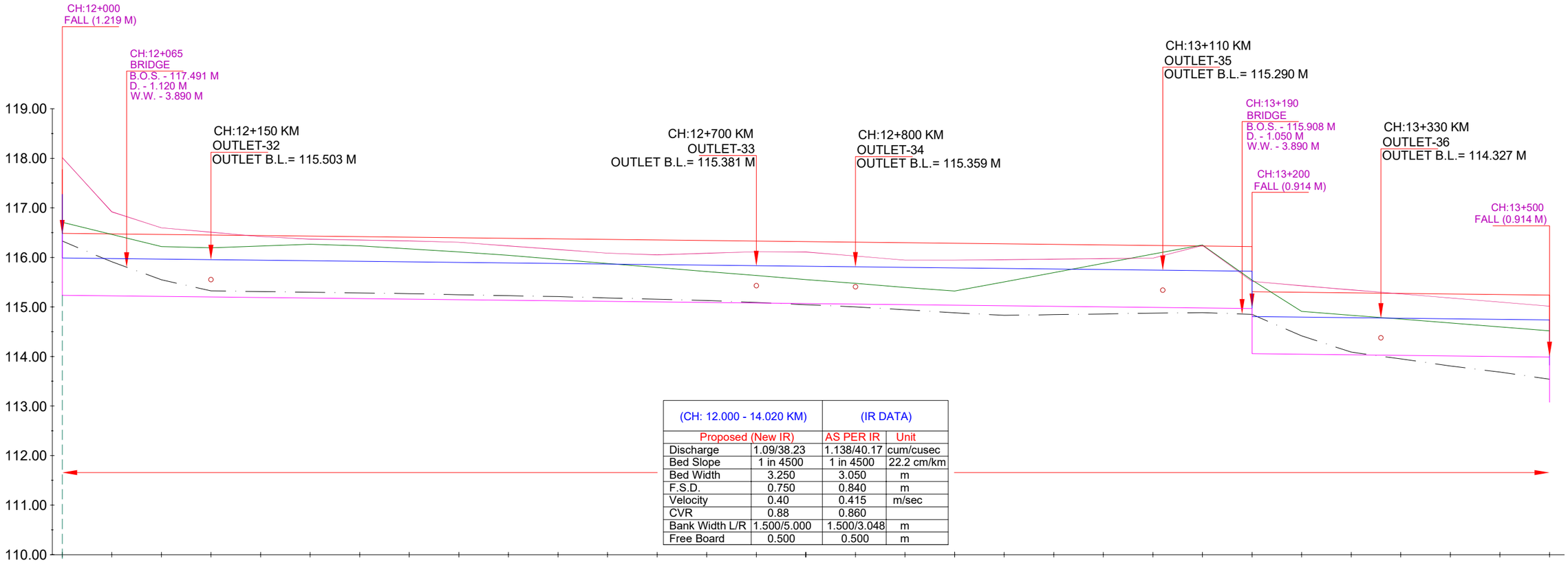



| (CH: 9.550 - 11.100 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 1.58/55.83 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 3.690 | 3.050 | m |
| F.S.D. | 0.870 | 0.840 | m |
| Velocity | 0.44 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 11.100 - 12.000 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 1.37/48.33 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 3.500 | 3.050 | m |
| F.S.D. | 0.820 | 0.840 | m |
| Velocity | 0.43 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 12+000 TO 13+500




| (CH: 12.000 - 14.020 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 1.09/38.23 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 3.250 | 3.050 | m |
| F.S.D. | 0.750 | 0.840 | m |
| Velocity | 0.40 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 12+000 | 12+050 | 12+100 | 12+150 | 12+200 | 12+250 | 12+300 | 12+350 | 12+400 | 12+450 | 12+500 | 12+550 | 12+600 | 12+650 | 12+700 | 12+750 | 12+800 | 12+850 | 12+900 | 12+950 | 13+000 | 13+050 | 13+100 | 13+150 | 13+200 | 13+250 | 13+300 | 13+350 | 13+400 | 13+450 | 13+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 117.775<br>116.486 | 116.475 | 116.464 | 116.453 | 116.442 | 116.431 | 116.420 | 116.409 | 116.397 | 116.386 | 116.375 | 116.364 | 116.353 | 116.342 | 116.331 | 116.320 | 116.309 | 116.297 | 116.286 | 116.275 | 116.264 | 116.253 | 116.242 | 116.231 | 116.220<br>115.306 | 115.295 | 115.283 | 115.272 | 115.261 | 115.250 | 115.239<br>114.325 |
| | F.S.L. | 117.275<br>115.986 | 115.975 | 115.964 | 115.953 | 115.942 | 115.931 | 115.920 | 115.909 | 115.897 | 115.886 | 115.875 | 115.864 | 115.853 | 115.842 | 115.831 | 115.820 | 115.809 | 115.797 | 115.786 | 115.775 | 115.764 | 115.753 | 115.742 | 115.731 | 115.720<br>114.806 | 114.795 | 114.783 | 114.772 | 114.761 | 114.750 | 114.739<br>113.825 |
| | Proposed Bed Level | 116.455<br>115.236 | 115.225 | 115.214 | 115.203 | 115.192 | 115.181 | 115.170 | 115.159 | 115.147 | 115.136 | 115.125 | 115.114 | 115.103 | 115.092 | 115.081 | 115.070 | 115.059 | 115.047 | 115.036 | 115.025 | 115.014 | 115.003 | 114.992 | 114.981 | 114.970<br>114.056 | 114.045 | 114.033 | 114.022 | 114.011 | 114.000 | 113.989<br>113.075 |
| EXISTING DATA | Bed Level | 116.329 | 115.911 | 115.549 | 115.324 | 115.311 | 115.296 | 115.282 | 115.269 | 115.246 | 115.227 | 115.208 | 115.182 | 115.155 | 115.130 | 115.090 | 115.045 | 115.000 | 114.943 | 114.880 | 114.830 | 114.844 | 114.858 | 114.874 | 114.885 | 114.851 | 114.418 | 114.088 | 113.952 | 113.809 | 113.686 | 113.540 |
| | TOP OF BANK LEVEL | 118.013 | 116.920 | 116.597 | 116.508 | 116.421 | 116.369 | 116.351 | 116.333 | 116.305 | 116.232 | 116.159 | 116.086 | 116.052 | 116.083 | 116.114 | 116.110 | 116.028 | 115.945 | 115.945 | 115.955 | 115.965 | 115.975 | 115.985 | 116.241 | 115.516 | 115.429 | 115.346 | 115.264 | 115.181 | 115.098 | 115.015 |
| | NSL | 116.707 | 116.463 | 116.220 | 116.194 | 116.230 | 116.266 | 116.232 | 116.171 | 116.109 | 116.041 | 115.959 | 115.877 | 115.796 | 115.715 | 115.634 | 115.553 | 115.476 | 115.395 | 115.320 | 115.506 | 115.693 | 115.879 | 116.066 | 116.252 | 115.542 | 114.911 | 114.833 | 114.754 | 114.676 | 114.597 | 114.519 |
| | Chainage IN KM | 12+000 | 12+050 | 12+100 | 12+150 | 12+200 | 12+250 | 12+300 | 12+350 | 12+400 | 12+450 | 12+500 | 12+550 | 12+600 | 12+650 | 12+700 | 12+750 | 12+800 | 12+850 | 12+900 | 12+950 | 13+000 | 13+050 | 13+100 | 13+150 | 13+200 | 13+250 | 13+300 | 13+350 | 13+400 | 13+450 | 13+500 |

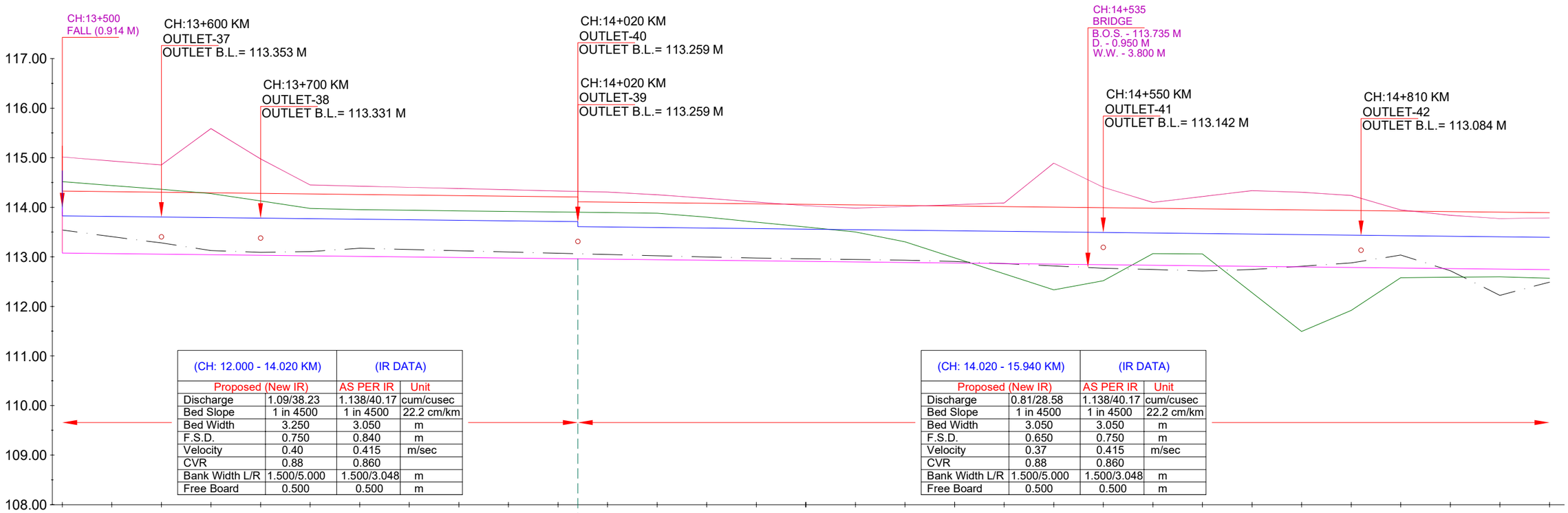
LEGEND

| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ LSEC- 09 of 14 |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 13+500 TO 15+000

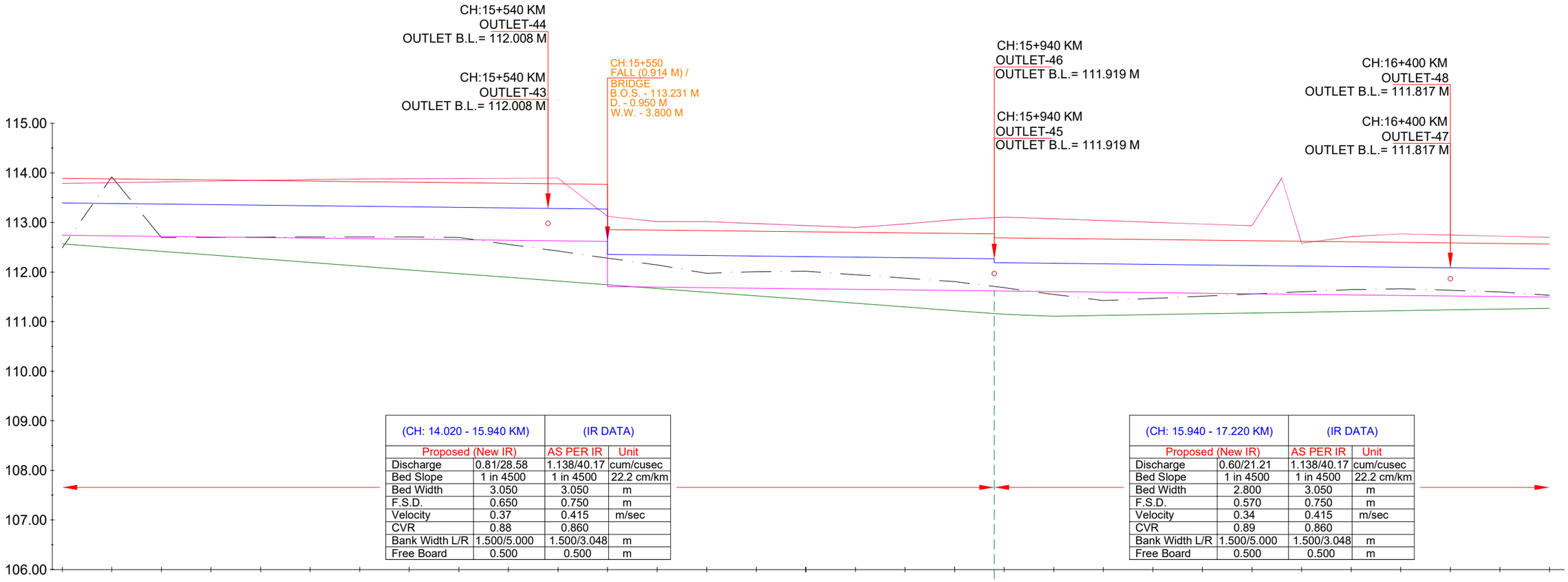



| (CH: 12.000 - 14.020 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 1.09/38.23 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 3.250 | 3.050 | m |
| F.S.D. | 0.750 | 0.840 | m |
| Velocity | 0.40 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 14.020 - 15.940 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.81/28.58 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 3.050 | 3.050 | m |
| F.S.D. | 0.650 | 0.750 | m |
| Velocity | 0.37 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 15+000 TO 16+500




| (CH: 14.020 - 15.940 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.81/28.58 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 3.050 | 3.050 | m |
| F.S.D. | 0.650 | 0.750 | m |
| Velocity | 0.37 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 15.940 - 17.220 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.60/21.21 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 2.800 | 3.050 | m |
| F.S.D. | 0.570 | 0.750 | m |
| Velocity | 0.34 | 0.415 | m/sec |
| CVR | 0.89 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 15+000 | 15+050 | 15+100 | 15+150 | 15+200 | 15+250 | 15+300 | 15+350 | 15+400 | 15+450 | 15+500 | 15+550 | 15+600 | 15+650 | 15+700 | 15+750 | 15+800 | 15+850 | 15+900 | 15+940 | 15+950 | 16+000 | 16+050 | 16+100 | 16+150 | 16+200 | 16+250 | 16+300 | 16+350 | 16+400 | 16+450 | 16+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 113.892 | 113.881 | 113.869 | 113.858 | 113.847 | 113.836 | 113.825 | 113.814 | 113.803 | 113.792 | 113.781 | 113.769 | 112.855 | 112.844 | 112.833 | 112.822 | 112.811 | 112.800 | 112.789 | 112.778 | 112.769 | 112.687 | 112.675 | 112.664 | 112.653 | 112.642 | 112.631 | 112.620 | 112.609 | 112.598 | 112.587 | 112.575 | 112.564 |
| | F.S.L. | 113.392 | 113.381 | 113.369 | 113.358 | 113.347 | 113.336 | 113.325 | 113.314 | 113.303 | 113.292 | 113.281 | 113.269 | 112.355 | 112.344 | 112.333 | 112.322 | 112.311 | 112.300 | 112.289 | 112.278 | 112.269 | 112.187 | 112.175 | 112.164 | 112.153 | 112.142 | 112.131 | 112.120 | 112.109 | 112.098 | 112.087 | 112.075 | 112.064 |
| | Proposed Bed Level | 112.742 | 112.731 | 112.719 | 112.708 | 112.697 | 112.686 | 112.675 | 112.664 | 112.653 | 112.642 | 112.631 | 112.619<br>111.705 | 111.694 | 111.683 | 111.672 | 111.661 | 111.650 | 111.639 | 111.628 | 111.619<br>111.617 | 111.605 | 111.594 | 111.583 | 111.572 | 111.561 | 111.550 | 111.539 | 111.528 | 111.517 | 111.505 | 111.494 |
| EXISTING DATA | Bed Level | 112.490 | 112.688 | 112.694 | 112.699 | 112.702 | 112.709 | 112.710 | 112.710 | 112.696 | 112.559 | 112.423 | 112.281 | 112.142 | 111.975 | 112.007 | 112.017 | 111.946 | 111.876 | 111.806 | 111.685 | 111.548 | 111.425 | 111.468 | 111.513 | 111.557 | 111.601 | 111.646 | 111.662 | 111.631 | 111.598 | 111.530 |
| | TOP OF BANK LEVEL | 113.787 | 113.802 | 113.818 | 113.833 | 113.849 | 113.864 | 113.879 | 113.883 | 113.886 | 113.891 | 113.894 | 113.123 | 113.063 | 113.016 | 112.976 | 112.937 | 112.898 | 112.970 | 113.056 | 113.108 | 113.073 | 113.038 | 113.003 | 112.968 | 112.933<br>113.894 | 112.581 | 112.715 | 112.770 | 112.747 | 112.723 | 112.700 |
| | NSL | 112.568 | 112.493 | 112.418 | 112.343 | 112.268 | 112.193 | 112.118 | 112.043 | 111.968 | 111.893 | 111.818 | 111.743 | 111.668 | 111.593 | 111.520 | 111.446 | 111.371 | 111.297 | 111.222 | 111.148 | 111.110 | 111.126 | 111.142 | 111.158 | 111.174 | 111.189 | 111.206 | 111.222 | 111.237 | 111.253 | 111.269 |
| | Chainage IN KM | 15+000 | 15+050 | 15+100 | 15+150 | 15+200 | 15+250 | 15+300 | 15+350 | 15+400 | 15+450 | 15+500 | 15+550 | 15+600 | 15+650 | 15+700 | 15+750 | 15+800 | 15+850 | 15+900 | 15+940 | 15+950 | 16+000 | 16+050 | 16+100 | 16+150 | 16+200 | 16+250 | 16+300 | 16+350 | 16+400 | 16+450 | 16+500 |

LEGEND

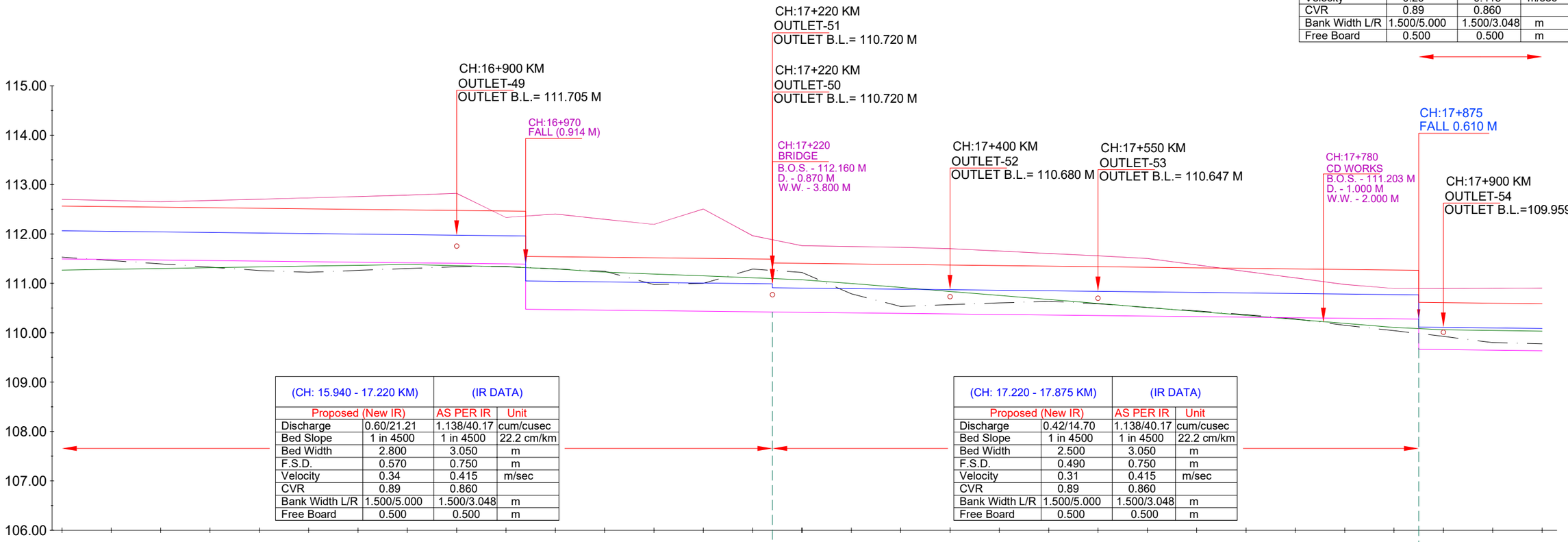
| | | | |
|---|---|---|---|
| NSL | | EXISTING BED LEVEL | |
| EXISTING TOP OF BANK | | PROPOSED BED LEVEL | |
| EXISTING STRUCTURE | | PROPOSED FSL | |
| MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL | |
| NEW STRUCTURE | | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ LSEC- |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 16+500 TO 18+000

| (CH: 17.875 - 18.140 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.32/11.25 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4400 | 1 in 4500 | 22.7 cm/km |
| Bed Width | 2.200 | 3.050 | m |
| F.S.D. | 0.450 | 0.750 | m |
| Velocity | 0.29 | 0.415 | m/sec |
| CVR | 0.89 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

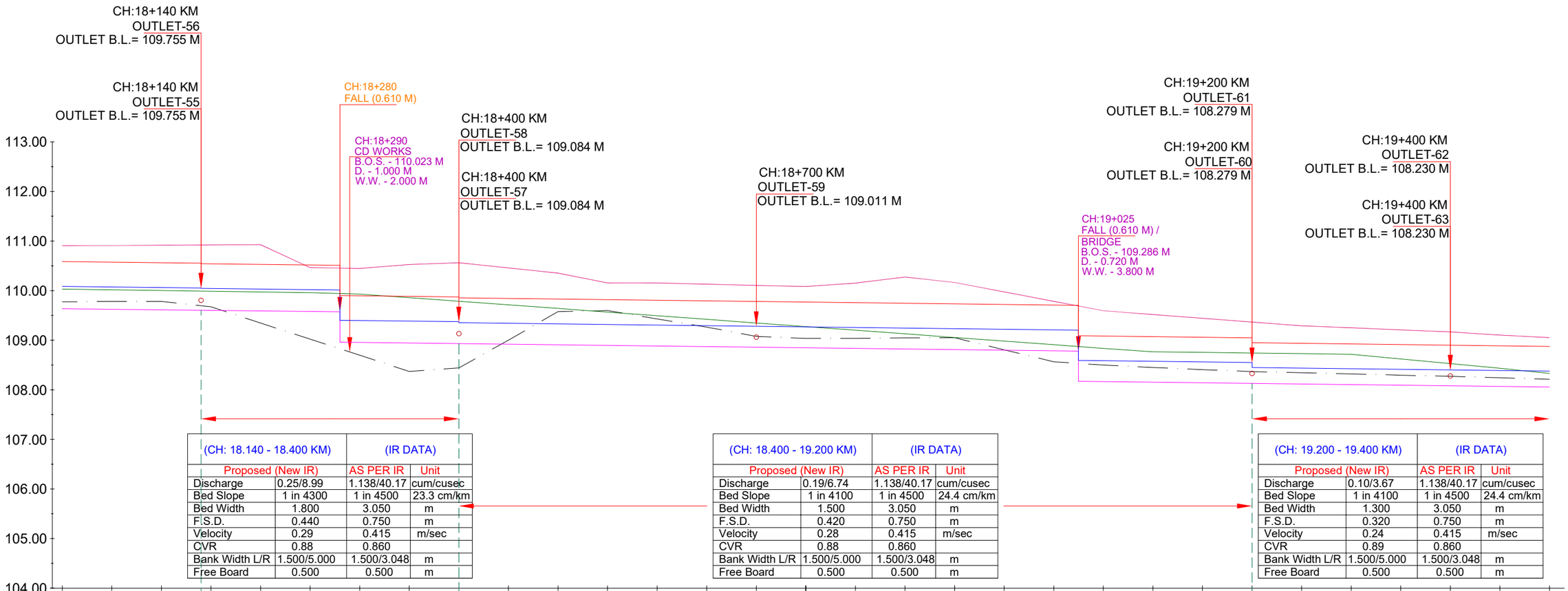



| (CH: 15.940 - 17.220 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.60/21.21 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 2.800 | 3.050 | m |
| F.S.D. | 0.570 | 0.750 | m |
| Velocity | 0.34 | 0.415 | m/sec |
| CVR | 0.89 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 17.220 - 17.875 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.42/14.70 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4500 | 1 in 4500 | 22.2 cm/km |
| Bed Width | 2.500 | 3.050 | m |
| F.S.D. | 0.490 | 0.750 | m |
| Velocity | 0.31 | 0.415 | m/sec |
| CVR | 0.89 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 18+000 TO 19+500



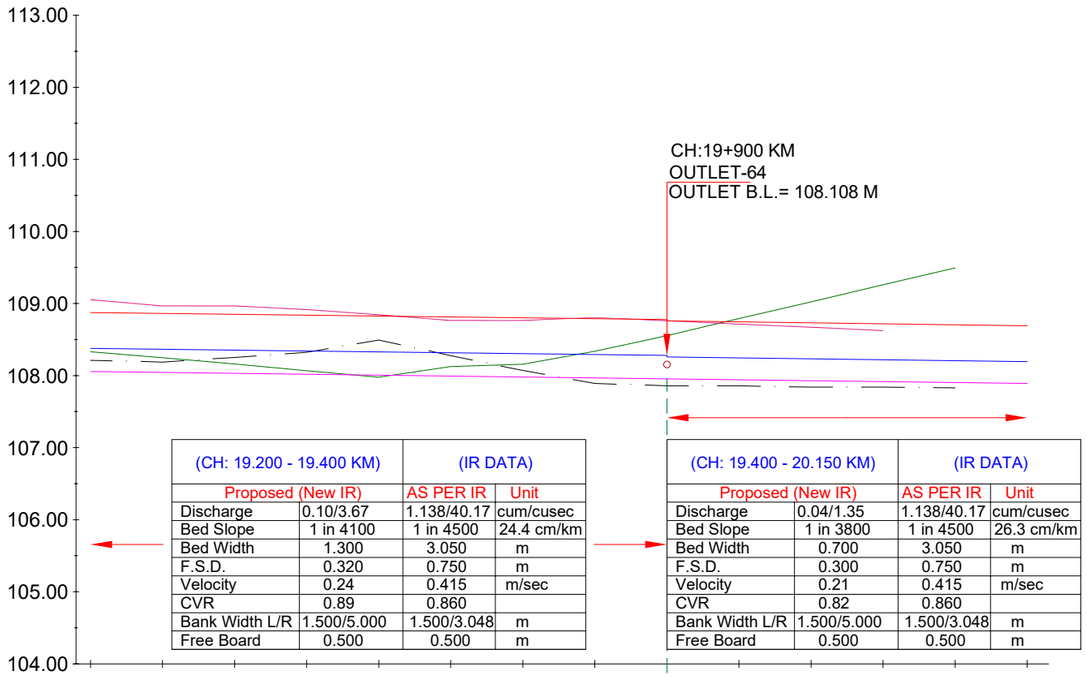

| (CH: 18.140 - 18.400 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.25/8.99 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4300 | 1 in 4500 | 23.3 cm/km |
| Bed Width | 1.800 | 3.050 | m |
| F.S.D. | 0.440 | 0.750 | m |
| Velocity | 0.29 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 18.400 - 19.200 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.19/6.74 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4100 | 1 in 4500 | 24.4 cm/km |
| Bed Width | 1.500 | 3.050 | m |
| F.S.D. | 0.420 | 0.750 | m |
| Velocity | 0.28 | 0.415 | m/sec |
| CVR | 0.88 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 19.200 - 19.400 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.10/3.67 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4100 | 1 in 4500 | 24.4 cm/km |
| Bed Width | 1.300 | 3.050 | m |
| F.S.D. | 0.320 | 0.750 | m |
| Velocity | 0.24 | 0.415 | m/sec |
| CVR | 0.89 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | |

# L- SECTION OF MAHUARY SUB-DISTRIBUTARY
## (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
## FROM CH 19+500 TO 20+150




| (CH: 19.200 - 19.400 KM) | (IR DATA) | | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.10/3.67 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 4100 | 1 in 4500 | 24.4 cm/km |
| Bed Width | 1.300 | 3.050 | m |
| F.S.D. | 0.320 | 0.750 | m |
| Velocity | 0.24 | 0.415 | m/sec |
| CVR | 0.89 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 19.400 - 20.150 KM) | (IR DATA) | | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.04/1.35 | 1.138/40.17 | cum/cusec |
| Bed Slope | 1 in 3800 | 1 in 4500 | 26.3 cm/km |
| Bed Width | 0.700 | 3.050 | m |
| F.S.D. | 0.300 | 0.750 | m |
| Velocity | 0.21 | 0.415 | m/sec |
| CVR | 0.82 | 0.860 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 108.876 | 108.864 | 108.851 | 108.839 | 108.827 | 108.815 | 108.803 | 108.790 | 108.778 | 108.758 | 108.745 | 108.732 | 108.719 | 108.706 | 108.692 |
| | F.S.L. | 108.376 | 108.364 | 108.351 | 108.339 | 108.327 | 108.315 | 108.303 | 108.290 | 108.278 | 108.258 | 108.245 | 108.232 | 108.219 | 108.206 | 108.192 |
| | Proposed Bed Level | 108.056 | 108.044 | 108.031 | 108.019 | 108.007 | 107.995 | 107.983 | 107.970 | 107.958 | 107.945 | 107.932 | 107.919 | 107.906 | 107.892 | |
| EXISTING DATA | Bed Level | 108.213 | 108.188 | 108.251 | 108.324 | 108.492 | 108.278 | 108.071 | 107.890 | 107.860 | 107.858 | 107.840 | 107.839 | 107.829 | | |
| | TOP OF BANK LEVEL | 109.053 | 109.026 | 108.967 | 108.917 | 108.845 | 108.826 | 108.765 | 108.806 | 108.761 | 108.716 | 108.671 | 108.625 | | | |
| | NSL | 108.332 | 108.249 | 108.160 | 108.069 | 107.978 | 108.124 | 108.159 | 108.338 | 108.555 | 108.790 | 109.024 | 109.260 | 109.494 | | |
| | Chainage IN KM | 19+500 | 19+550 | 19+600 | 19+650 | 19+700 | 19+750 | 19+800 | 19+850 | 19+900 | 19+950 | 20+000 | 20+050 | 20+100 | 20+150 | |

LEGEND

| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

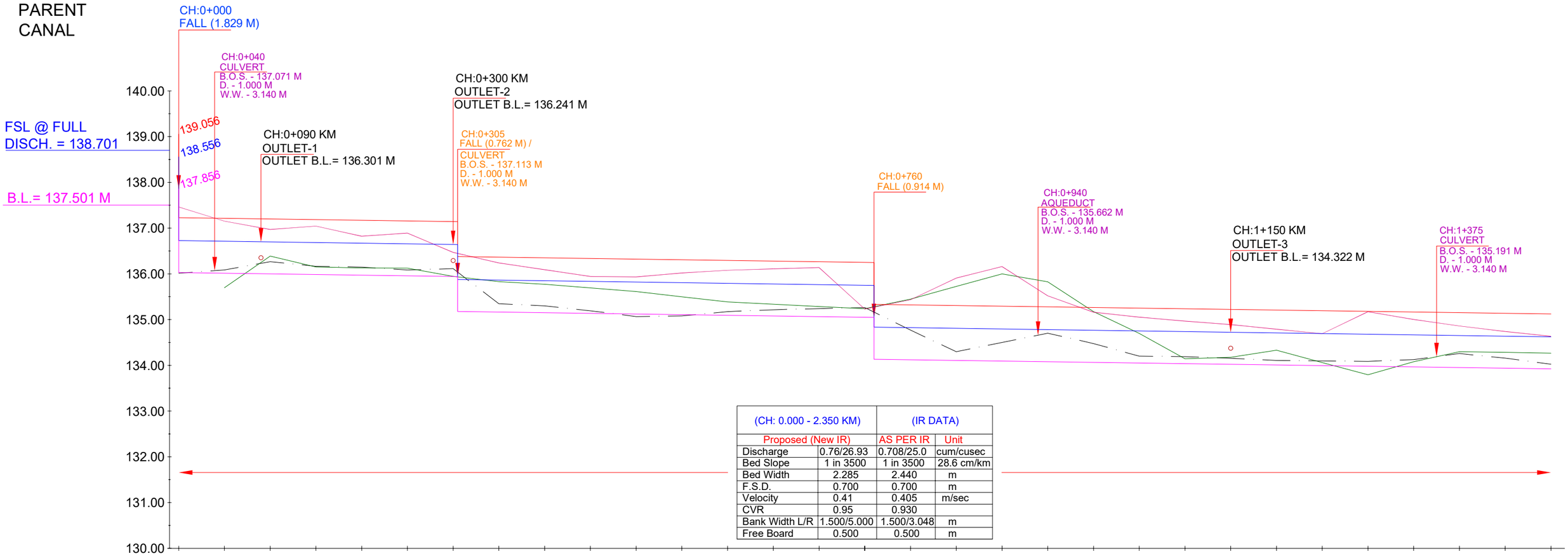
IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ LSEC- 14 of 14 |

# *BARIAWA MINOR*

# L- SECTION OF BARIAWA MINOR
## (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 0+000 TO 1+500

DATA OF PARENT CANAL




| (CH: 0.000 - 2.350 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.76/26.93 | 0.708/25.0 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3500 | 28.6 cm/km |
| Bed Width | 2.285 | 2.440 | m |
| F.S.D. | 0.700 | 0.700 | m |
| Velocity | 0.41 | 0.405 | m/sec |
| CVR | 0.95 | 0.930 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 0+000 | 0+050 | 0+100 | 0+150 | 0+200 | 0+250 | 0+300 | 0+350 | 0+400 | 0+450 | 0+500 | 0+550 | 0+600 | 0+650 | 0+700 | 0+750 | 0+800 | 0+850 | 0+900 | 0+950 | 1+000 | 1+050 | 1+100 | 1+150 | 1+200 | 1+250 | 1+300 | 1+350 | 1+400 | 1+450 | 1+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 139.056<br>137.227 | 137.213 | 137.198 | 137.184 | 137.170 | 137.156 | 137.141<br>137.140<br>136.378 | 136.365 | 136.351 | 136.336 | 136.322 | 136.308 | 136.294 | 136.279 | 136.265 | 136.251<br>136.248<br>135.334 | 135.322 | 135.308 | 135.294 | 135.280 | 135.265 | 135.251 | 135.237 | 135.222 | 135.208 | 135.194 | 135.180 | 135.165 | 135.151 | 135.137 | 135.122 |
| | F.S.L. | 138.556<br>136.727 | 136.713 | 136.698 | 136.684 | 136.670 | 136.656 | 136.641<br>136.640<br>135.878 | 135.865 | 135.851 | 135.836 | 135.822 | 135.808 | 135.794 | 135.779 | 135.765 | 135.751<br>135.748<br>134.834 | 134.822 | 134.808 | 134.794 | 134.780 | 134.765 | 134.751 | 134.737 | 134.722 | 134.708 | 134.694 | 134.680 | 134.665 | 134.651 | 134.637 | 134.622 |
| | Proposed Bed Level | 137.856<br>136.027 | 136.013 | 135.998 | 135.984 | 135.970 | 135.956 | 135.941<br>135.940<br>135.178 | 135.165 | 135.151 | 135.136 | 135.122 | 135.108 | 135.094 | 135.079 | 135.065 | 135.051<br>135.048<br>134.134 | 134.122 | 134.108 | 134.094 | 134.080 | 134.065 | 134.051 | 134.037 | 134.022 | 134.008 | 133.994 | 133.980 | 133.965 | 133.951 | 133.937 | 133.922 |
| EXISTING DATA | Bed Level | 136.013 | 136.086 | 136.267 | 136.166 | 136.148 | 136.086 | 136.113 | 135.348 | 135.301 | 135.192 | 135.067 | 135.079 | 135.174 | 135.215 | 135.240 | 135.265 | 134.769 | 134.298 | 134.498 | 134.703 | 134.476 | 134.200 | 134.191 | 134.153 | 134.106 | 134.097 | 134.087 | 134.125 | 134.257 | 134.157 | 134.023 |
| | TOP OF BANK LEVEL | 137.462 | 137.152 | 136.970 | 137.044 | 136.824 | 136.891 | 136.470 | 136.238 | 136.091 | 135.944 | 135.932 | 136.019 | 136.078 | 136.108 | 136.139 | 135.229 | 135.434 | 135.906 | 136.159 | 135.520 | 135.162 | 135.052 | 134.967 | 134.891 | 134.791 | 134.691 | 135.171 | 135.003 | 134.861 | 134.738 | 134.634 |
| | NSL | | 135.696 | 136.388 | 136.149 | 136.129 | 136.125 | 135.943 | 135.830 | 135.773 | 135.693 | 135.613 | 135.498 | 135.386 | 135.336 | 135.287 | 135.238 | 135.449 | 135.724 | 135.998 | 135.827 | 135.175 | 134.698 | 134.142 | 134.175 | 134.329 | 134.061 | 133.792 | 134.078 | 134.299 | 134.282 | 134.265 |
| | Chainage IN KM | 0+000 | 0+050 | 0+100 | 0+150 | 0+200 | 0+250 | 0+300 | 0+350 | 0+400 | 0+450 | 0+500 | 0+550 | 0+600 | 0+650 | 0+700 | 0+750 | 0+800 | 0+850 | 0+900 | 0+950 | 1+000 | 1+050 | 1+100 | 1+150 | 1+200 | 1+250 | 1+300 | 1+350 | 1+400 | 1+450 | 1+500 |

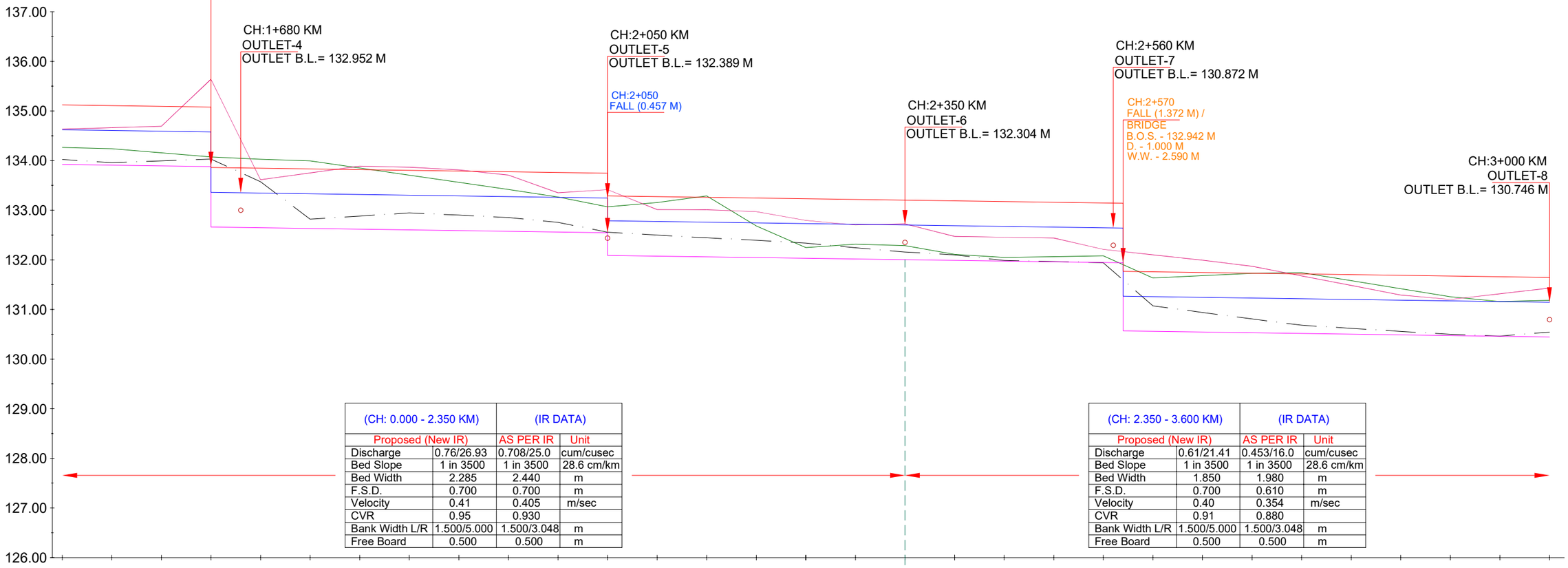
LEGEND

| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ LSEC- 01 of 05 |

# L- SECTION OF BARIAWA MINOR
## (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 1+500 TO 3+000

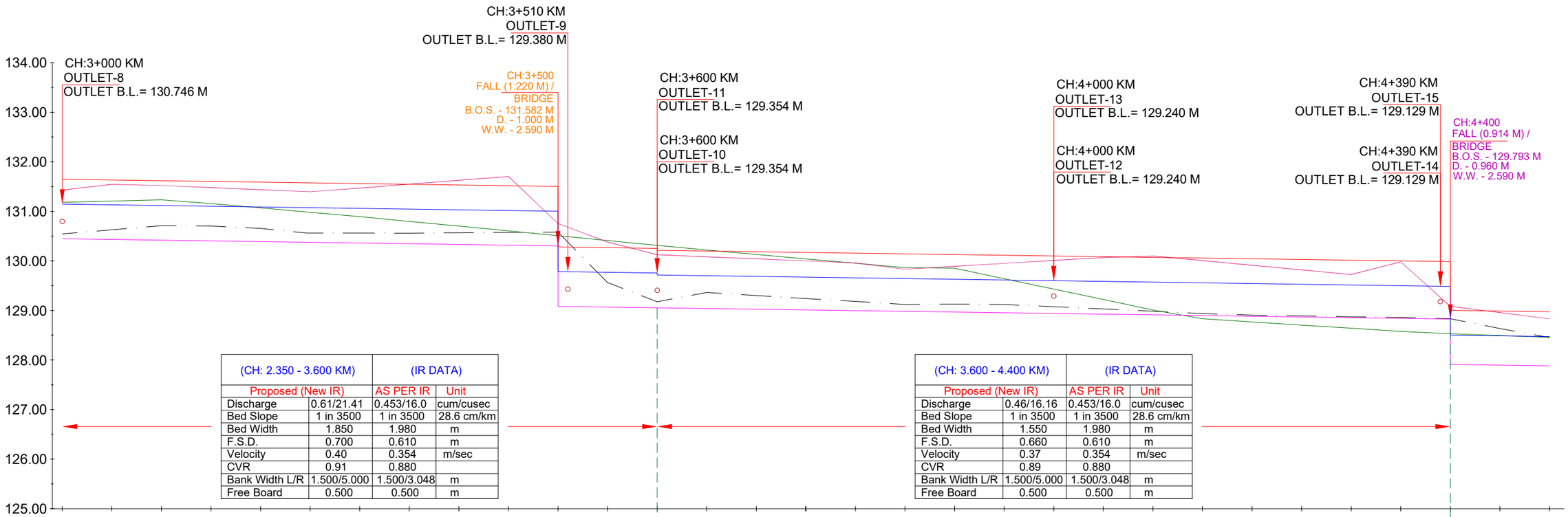



| (CH: 0.000 - 2.350 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.76/26.93 | 0.708/25.0 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3500 | 28.6 cm/km |
| Bed Width | 2.285 | 2.440 | m |
| F.S.D. | 0.700 | 0.700 | m |
| Velocity | 0.41 | 0.405 | m/sec |
| CVR | 0.95 | 0.930 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 2.350 - 3.600 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.61/21.41 | 0.453/16.0 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3500 | 28.6 cm/km |
| Bed Width | 1.850 | 1.980 | m |
| F.S.D. | 0.700 | 0.610 | m |
| Velocity | 0.40 | 0.354 | m/sec |
| CVR | 0.91 | 0.880 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | |

# L- SECTION OF BARIAWA MINOR
## (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 3+000 TO 4+500




| (CH: 2.350 - 3.600 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.61/21.41 | 0.453/16.0 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3500 | 28.6 cm/km |
| Bed Width | 1.850 | 1.980 | m |
| F.S.D. | 0.700 | 0.610 | m |
| Velocity | 0.40 | 0.354 | m/sec |
| CVR | 0.91 | 0.880 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 3.600 - 4.400 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.46/16.16 | 0.453/16.0 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3500 | 28.6 cm/km |
| Bed Width | 1.550 | 1.980 | m |
| F.S.D. | 0.660 | 0.610 | m |
| Velocity | 0.37 | 0.354 | m/sec |
| CVR | 0.89 | 0.880 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 3+000 | 3+050 | 3+100 | 3+150 | 3+200 | 3+250 | 3+300 | 3+350 | 3+400 | 3+450 | 3+500 | 3+550 | 3+600 | 3+650 | 3+700 | 3+750 | 3+800 | 3+850 | 3+900 | 3+950 | 4+000 | 4+050 | 4+100 | 4+150 | 4+200 | 4+250 | 4+300 | 4+350 | 4+400 | 4+450 | 4+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 131.946 | 131.632 | 131.617 | 131.603 | 131.589 | 131.574 | 131.560 | 131.546 | 131.532 | 131.517 | 131.503 | 130.283 | 130.269 | 130.254 | 130.214 | 130.200 | 130.186 | 130.172 | 130.157 | 130.143 | 130.129 | 130.114 | 130.100 | 130.086 | 130.072 | 130.057 | 130.043 | 130.029 | 129.986 | 129.002 | 128.988 | 128.973 |
| | F.S.L. | 131.346 | 131.132 | 131.117 | 131.103 | 131.089 | 131.074 | 131.060 | 131.046 | 131.032 | 131.017 | 131.003<br>129.783 | 129.769 | 129.754<br>129.714 | 129.700 | 129.686 | 129.672 | 129.657 | 129.643 | 129.629 | 129.614 | 129.600 | 129.586 | 129.572 | 129.557 | 129.543 | 129.529 | 129.514 | 129.500 | 129.486<br>128.502 | 128.488 | 128.473 |
| | Proposed Bed Level | 130.746 | 130.432 | 130.417 | 130.403 | 130.389 | 130.374 | 130.360 | 130.346 | 130.332 | 130.317 | 130.303<br>129.083 | 129.069 | 129.054 | 129.040 | 129.026 | 129.012 | 128.997 | 128.983 | 128.969 | 128.954 | 128.940 | 128.926 | 128.912 | 128.897 | 128.883 | 128.869 | 128.854 | 128.840 | 128.826<br>127.912 | 127.898 | 127.883 |
| EXISTING DATA | Bed Level | 130.544 | 130.627 | 130.711 | 130.704 | 130.655 | 130.612 | 130.563 | 130.559 | 130.567 | 130.575 | 130.582 | 129.564 | 129.174 | 129.364 | 129.302 | 129.241 | 129.182 | 129.121 | 129.130 | 129.122 | 129.076 | 129.030 | 128.984 | 128.937 | 128.906 | 128.891 | 128.874 | 128.858 | 128.833 | 128.636 | 128.454 |
| | TOP OF BANK LEVEL | 131.430 | 131.544 | 131.521 | 131.479 | 131.437 | 131.396 | 131.470 | 131.548 | 131.627 | 131.704 | 130.755 | 130.381 | 130.124 | 130.083 | 130.042 | 130.001 | 129.960 | 129.832 | 129.891 | 129.950 | 130.010 | 130.069 | 130.101 | 130.007 | 129.913 | 129.819 | 129.725 | 129.982 | 129.084 | 128.957 | 128.830 |
| | NSL | 131.184 | 131.208 | 131.233 | 131.157 | 131.070 | 130.982 | 130.895 | 130.798 | 130.702 | 130.605 | 130.508 | 130.411 | 130.314 | 130.220 | 130.131 | 130.042 | 129.953 | 129.864 | 129.853 | 129.642 | 129.432 | 129.221 | 129.010 | 128.832 | 128.768 | 128.704 | 128.641 | 128.577 | 128.530 | 128.496 | 128.459 |
| | Chainage IN KM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| LEGEND | | | |
|---|---|---|---|
| NSL | | EXISTING BED LEVEL | |
| EXISTING TOP OF BANK | | PROPOSED BED LEVEL | |
| EXISTING STRUCTURE | | PROPOSED FSL | |
| MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL | |
| NEW STRUCTURE | | | |

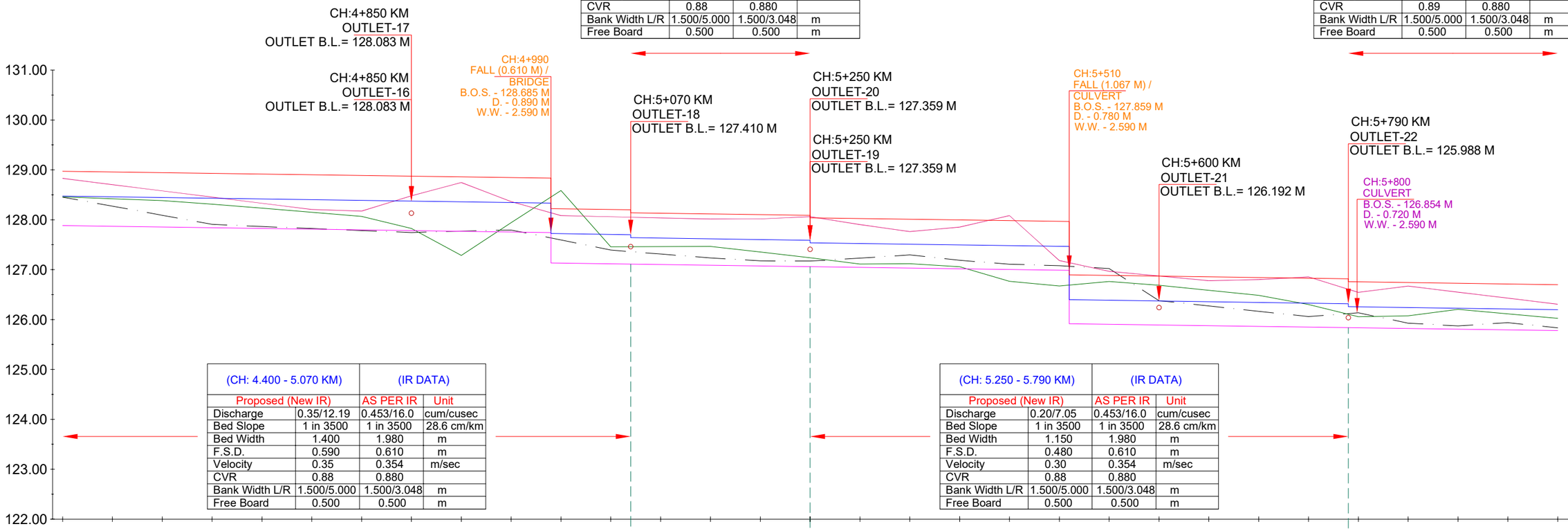
IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ LSEC- 03 of 05 |

# L- SECTION OF BARIAWA MINOR
## (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 4+500 TO 6+000

| (CH: 5.070 - 5.250 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.26/9.14 | 0.453/16.0 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3500 | 28.6 cm/km |
| Bed Width | 1.250 | 1.980 | m |
| F.S.D. | 0.530 | 0.610 | m |
| Velocity | 0.32 | 0.354 | m/sec |
| CVR | 0.88 | 0.880 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 5.790 - 6.100 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.14/5.01 | 0.453/16.0 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3500 | 28.6 cm/km |
| Bed Width | 1.100 | 1.980 | m |
| F.S.D. | 0.420 | 0.610 | m |
| Velocity | 0.28 | 0.354 | m/sec |
| CVR | 0.89 | 0.880 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |




| (CH: 4.400 - 5.070 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.35/12.19 | 0.453/16.0 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3500 | 28.6 cm/km |
| Bed Width | 1.400 | 1.980 | m |
| F.S.D. | 0.590 | 0.610 | m |
| Velocity | 0.35 | 0.354 | m/sec |
| CVR | 0.88 | 0.880 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 5.250 - 5.790 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.20/7.05 | 0.453/16.0 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3500 | 28.6 cm/km |
| Bed Width | 1.150 | 1.980 | m |
| F.S.D. | 0.480 | 0.610 | m |
| Velocity | 0.30 | 0.354 | m/sec |
| CVR | 0.88 | 0.880 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

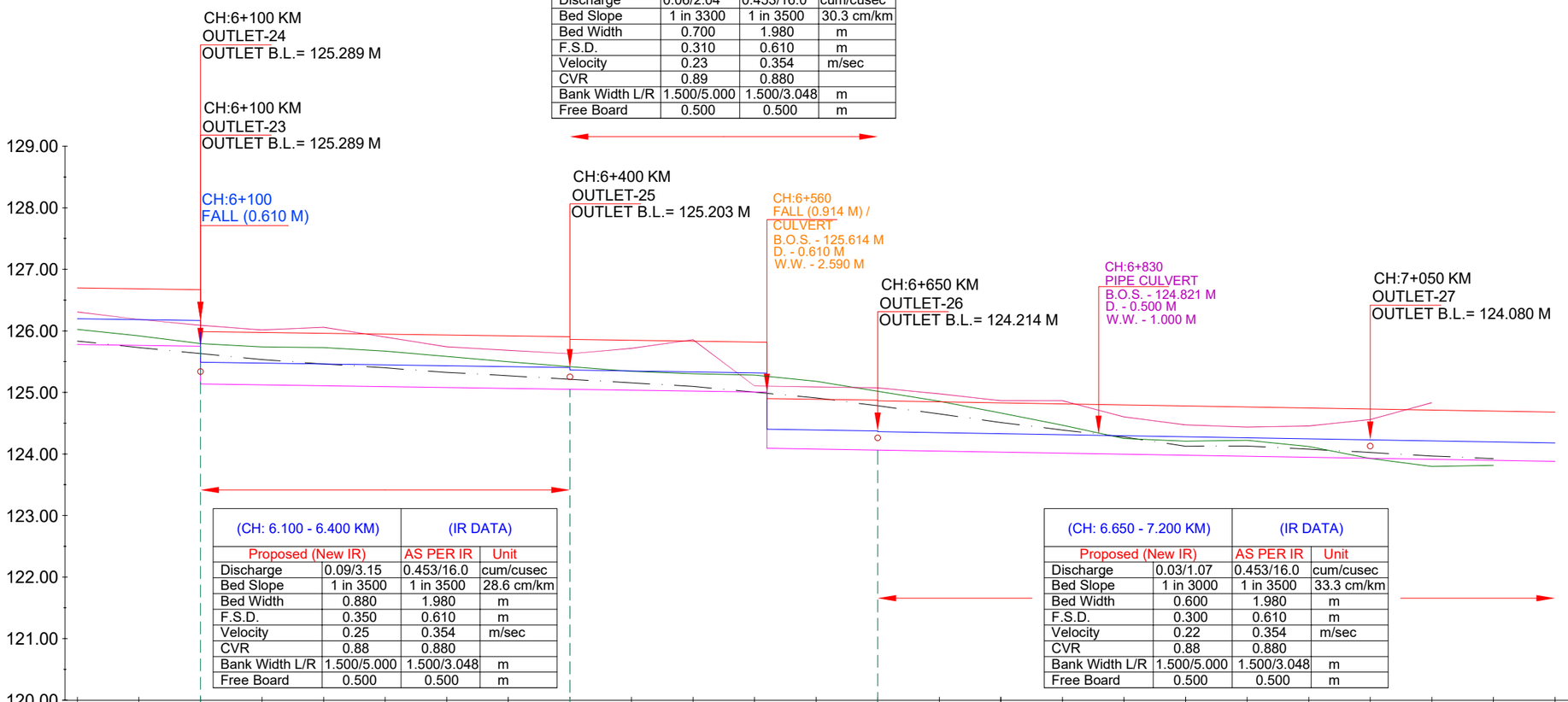
| | | |

# L- SECTION OF BARIAWA MINOR
## (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 6+000 TO 7+200

| (CH: 6.400 - 6.650 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.06/2.04 | 0.453/16.0 | cum/cusec |
| Bed Slope | 1 in 3300 | 1 in 3500 | 30.3 cm/km |
| Bed Width | 0.700 | 1.980 | m |
| F.S.D. | 0.310 | 0.610 | m |
| Velocity | 0.23 | 0.354 | m/sec |
| CVR | 0.89 | 0.880 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 6.100 - 6.400 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.09/3.15 | 0.453/16.0 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3500 | 28.6 cm/km |
| Bed Width | 0.880 | 1.980 | m |
| F.S.D. | 0.350 | 0.610 | m |
| Velocity | 0.25 | 0.354 | m/sec |
| CVR | 0.88 | 0.880 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 6.650 - 7.200 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.03/1.07 | 0.453/16.0 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.600 | 1.980 | m |
| F.S.D. | 0.300 | 0.610 | m |
| Velocity | 0.22 | 0.354 | m/sec |
| CVR | 0.88 | 0.880 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |




| | | 6+000 | 6+050 | 6+100 | 6+150 | 6+175 | 6+200 | 6+250 | 6+300 | 6+350 | 6+400 | 6+450 | 6+500 | 6+550 | 6+560 | 6+600 | 6+650 | 6+700 | 6+750 | 6+800 | 6+850 | 6+900 | 6+950 | 7+000 | 7+050 | 7+100 | 7+150 | 7+200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 126.698 | 126.683 | 126.669 | 125.989 | 125.975 | 125.961 | 125.946 | 125.932 | 125.918 | 125.903 | 125.848 | 125.833 | 125.818 | 125.815 | 124.901 | 124.889 | 124.864 | 124.847 | 124.830 | 124.814 | 124.797 | 124.780 | 124.764 | 124.747 | 124.730 | 124.714 | 124.697 | 124.680 |
| | F.S.L. | 126.198 | 126.183 | 126.169 | 125.489 | 125.475 | 125.461 | 125.446 | 125.432 | 125.418 | 125.403 | 125.348 | 125.333 | 125.318 | 125.315 | 124.401 | 124.389 | 124.364 | 124.347 | 124.330 | 124.314 | 124.297 | 124.280 | 124.264 | 124.247 | 124.230 | 124.214 | 124.197 | 124.180 |
| | Proposed Bed Level | 125.778 | 125.763 | 125.749 | 125.139 | 125.125 | 125.111 | 125.096 | 125.082 | 125.068 | 125.053 | 125.038 | 125.023 | 125.008 | 125.005 | 124.091 | 124.079 | 124.064 | 124.047 | 124.030 | 124.014 | 123.997 | 123.980 | 123.964 | 123.947 | 123.930 | 123.914 | 123.897 | 123.880 |
| EXISTING DATA | Bed Level | 125.834 | 125.729 | 125.630 | | 125.535 | 125.462 | 125.399 | 125.326 | 125.272 | 125.214 | 125.156 | 125.098 | 125.004 | | 124.912 | 124.783 | 124.650 | 124.512 | 124.389 | 124.276 | 124.126 | 124.129 | 124.077 | 124.025 | 123.967 | 123.925 | |
| | TOP OF BANK LEVEL | 126.307 | 126.187 | 126.090 | | 126.014 | 126.058 | 125.900 | 125.740 | 125.684 | 125.628 | 125.716 | 125.856 | 125.105 | | 125.090 | 125.076 | 124.978 | 124.866 | 124.865 | 124.602 | 124.473 | 124.438 | 124.454 | 124.559 | 124.833 | | |
| | NSL | 126.023 | 125.920 | 125.795 | | 125.739 | 125.730 | 125.671 | 125.585 | 125.499 | 125.420 | 125.342 | 125.304 | 125.283 | | 125.180 | 125.019 | 124.858 | 124.666 | 124.468 | 124.250 | 124.209 | 124.223 | 124.120 | 123.927 | 123.798 | 123.814 | |
| | Chainage IN KM | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LEGEND

| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

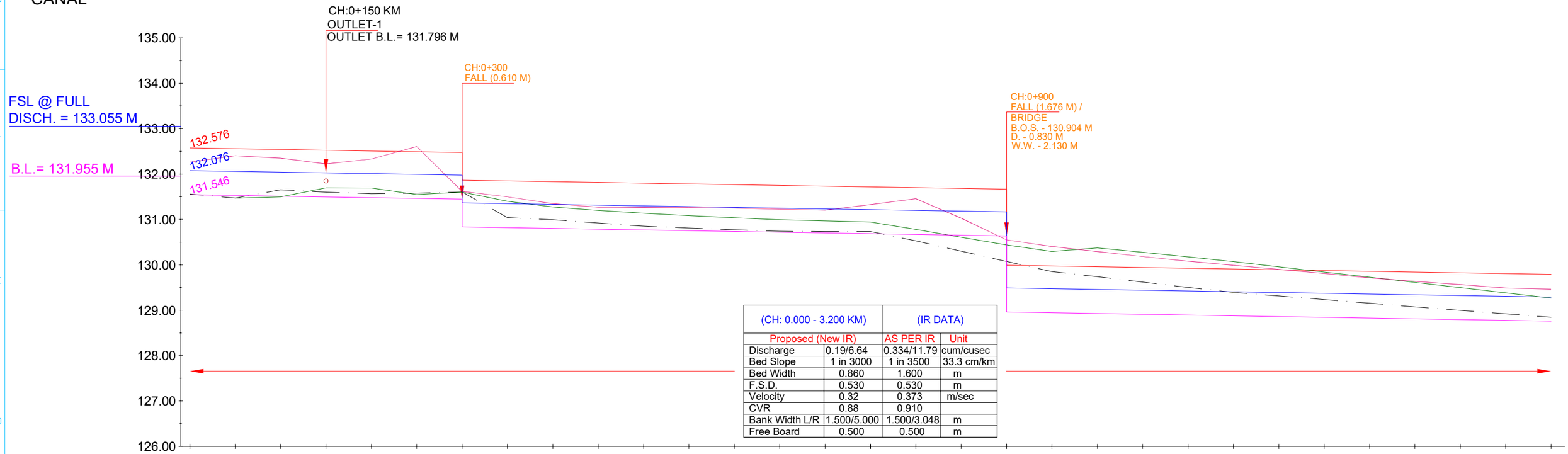
IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ LSEC- 05 of 05 |

# *ITMA MINOR*

# L- SECTION OF ITMA MINOR
## (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 0+000 TO 1+500

DATA OF PARENT CANAL




| (CH: 0.000 - 3.200 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.19/6.64 | 0.334/11.79 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.860 | 1.600 | m |
| F.S.D. | 0.530 | 0.530 | m |
| Velocity | 0.32 | 0.373 | m/sec |
| CVR | 0.88 | 0.910 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 0+000 | 0+050 | 0+100 | 0+150 | 0+200 | 0+250 | 0+300 | 0+350 | 0+400 | 0+450 | 0+500 | 0+550 | 0+600 | 0+650 | 0+700 | 0+750 | 0+800 | 0+850 | 0+900 | 0+950 | 1+000 | 1+050 | 1+100 | 1+150 | 1+200 | 1+250 | 1+300 | 1+350 | 1+400 | 1+450 | 1+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 134.405<br>132.576 | 132.559 | 132.543 | 132.526 | 132.509 | 132.493 | 132.476<br>131.866 | 131.849 | 131.833 | 131.816 | 131.799 | 131.783 | 131.766 | 131.749 | 131.733 | 131.716 | 131.699 | 131.683 | 131.666<br>129.990 | 129.973 | 129.957 | 129.940 | 129.923 | 129.907 | 129.890 | 129.873 | 129.857 | 129.840 | 129.823 | 129.807 | 129.790 |
| | F.S.L. | 133.905<br>132.076 | 132.059 | 132.043 | 132.026 | 132.009 | 131.993 | 131.976<br>131.366 | 131.349 | 131.333 | 131.316 | 131.299 | 131.283 | 131.266 | 131.249 | 131.233 | 131.216 | 131.199 | 131.183 | 131.166<br>129.490 | 129.473 | 129.457 | 129.440 | 129.423 | 129.407 | 129.390 | 129.373 | 129.357 | 129.340 | 129.323 | 129.307 | 129.290 |
| | Proposed Bed Level | 133.375<br>131.546 | 131.529 | 131.513 | 131.496 | 131.479 | 131.463 | 131.446<br>130.836 | 130.819 | 130.803 | 130.786 | 130.769 | 130.753 | 130.736 | 130.719 | 130.703 | 130.686 | 130.669 | 130.653 | 130.636<br>128.960 | 128.943 | 128.927 | 128.910 | 128.893 | 128.877 | 128.860 | 128.843 | 128.827 | 128.810 | 128.793 | 128.777 | 128.760 |
| EXISTING DATA | Bed Level | 131.559 | 131.472 | 131.654 | 131.601 | 131.566 | 131.579 | 131.607 | 131.039 | 130.992 | 130.920 | 130.852 | 130.810 | 130.773 | 130.740 | 130.735 | 130.733 | 130.529 | 130.301 | 130.074 | 129.851 | 129.738 | 129.619 | 129.500 | 129.394 | 129.313 | 129.235 | 129.154 | 129.074 | 128.997 | 128.921 | 128.845 |
| | TOP OF BANK LEVEL | 132.262 | 132.406 | 132.350 | 132.225 | 132.330 | 132.608 | 131.620 | 131.498 | 131.349 | 131.269 | 131.265 | 131.261 | 131.249 | 131.227 | 131.205 | 131.328 | 131.457 | 131.029 | 130.550 | 130.404 | 130.294 | 130.183 | 130.081 | 129.991 | 129.901 | 129.811 | 129.713 | 129.638 | 129.564 | 129.489 | 129.463 |
| | NSL | | 131.470 | 131.498 | 131.695 | 131.693 | 131.547 | 131.602 | 131.399 | 131.276 | 131.200 | 131.136 | 131.085 | 131.035 | 130.993 | 130.968 | 130.943 | 130.780 | 130.609 | 130.439 | 130.294 | 130.375 | 130.276 | 130.177 | 130.071 | 129.957 | 129.842 | 129.727 | 129.612 | 129.497 | 129.382 | 129.267 |
| | Chainage IN KM | 0+000 | 0+050 | 0+100 | 0+150 | 0+200 | 0+250 | 0+300 | 0+350 | 0+400 | 0+450 | 0+500 | 0+550 | 0+600 | 0+650 | 0+700 | 0+750 | 0+800 | 0+850 | 0+900 | 0+950 | 1+000 | 1+050 | 1+100 | 1+150 | 1+200 | 1+250 | 1+300 | 1+350 | 1+400 | 1+450 | 1+500 |

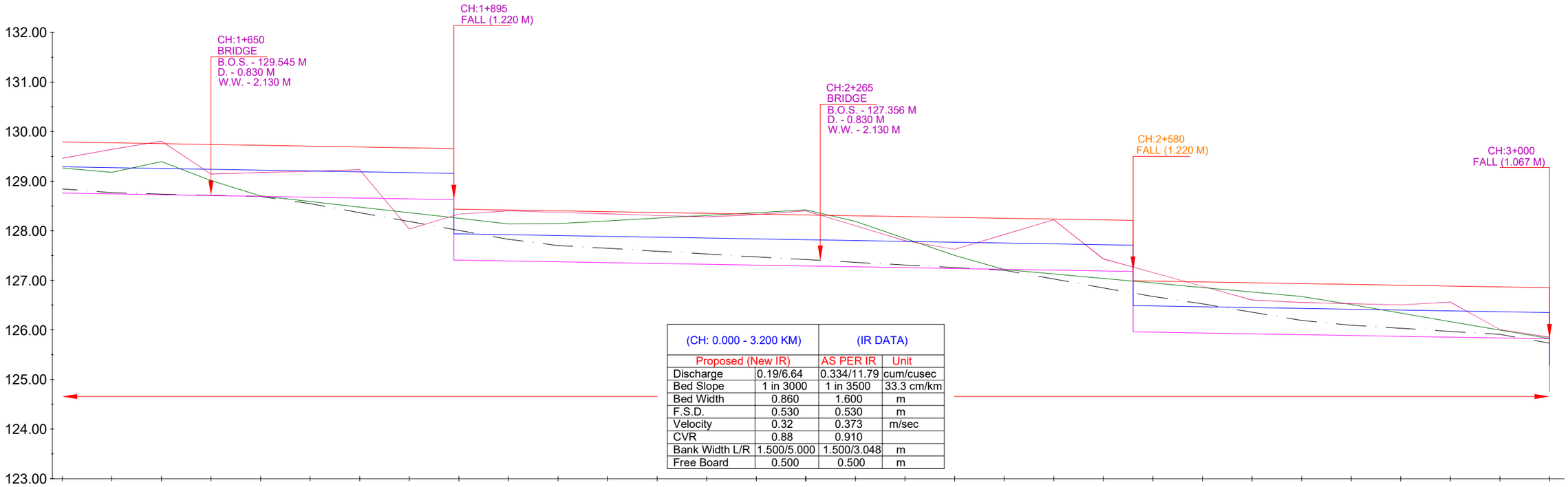
LEGEND

| | | | |
|---|---|---|---|
| NSL | | EXISTING BED LEVEL | |
| EXISTING TOP OF BANK | | PROPOSED BED LEVEL | |
| EXISTING STRUCTURE | | PROPOSED FSL | |
| MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL | |
| NEW STRUCTURE | | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ LSEC- 01 of 04 |

# L- SECTION OF ITMA MINOR
## (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 1+500 TO 3+000




| (CH: 0.000 - 3.200 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.19/6.64 | 0.334/11.79 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.860 | 1.600 | m |
| F.S.D. | 0.530 | 0.530 | m |
| Velocity | 0.32 | 0.373 | m/sec |
| CVR | 0.88 | 0.910 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 1+500 | 1+550 | 1+600 | 1+650 | 1+700 | 1+750 | 1+800 | 1+850 | 1+900 | 1+950 | 2+000 | 2+050 | 2+100 | 2+150 | 2+200 | 2+250 | 2+300 | 2+350 | 2+400 | 2+450 | 2+500 | 2+550 | 2+600 | 2+650 | 2+700 | 2+750 | 2+800 | 2+850 | 2+900 | 2+950 | 3+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 129.790 | 129.773 | 129.757 | 129.740 | 129.723 | 129.707 | 129.690 | 129.673 | 129.658<br>128.438<br>128.437 | 128.420 | 128.403 | 128.387 | 128.370 | 128.353 | 128.337 | 128.320 | 128.303 | 128.287 | 128.270 | 128.253 | 128.237 | 128.220 | 128.210<br>126.990<br>126.983 | 126.967 | 126.950 | 126.933 | 126.917 | 126.900 | 126.883 | 126.867 | 126.850<br>125.783 |
| | F.S.L. | 129.290 | 129.273 | 129.257 | 129.240 | 129.223 | 129.207 | 129.190 | 129.173 | 129.158<br>127.938<br>127.937 | 127.920 | 127.903 | 127.887 | 127.870 | 127.853 | 127.837 | 127.820 | 127.803 | 127.787 | 127.770 | 127.753 | 127.737 | 127.720 | 127.710<br>126.490<br>126.483 | 126.467 | 126.450 | 126.433 | 126.417 | 126.400 | 126.383 | 126.367 | 126.350<br>125.283 |
| | Proposed Bed Level | 128.760 | 128.743 | 128.727 | 128.710 | 128.693 | 128.677 | 128.660 | 128.643 | 128.628<br>127.408<br>127.407 | 127.390 | 127.373 | 127.357 | 127.340 | 127.323 | 127.307 | 127.290 | 127.273 | 127.257 | 127.240 | 127.223 | 127.207 | 127.190 | 127.180<br>125.960<br>125.953 | 125.937 | 125.920 | 125.903 | 125.887 | 125.870 | 125.853 | 125.837 | 125.820<br>124.753 |
| EXISTING DATA | Bed Level | 128.845 | 128.769 | 128.741 | 128.715 | 128.691 | 128.547 | 128.366 | 128.187 | 128.007 | 127.829 | 127.703 | 127.646 | 127.588 | 127.532 | 127.473 | 127.419 | 127.362 | 127.310 | 127.258 | 127.203 | 127.027 | 126.846 | 126.676 | 126.526 | 126.358 | 126.193 | 126.094 | 126.032 | 125.970 | 125.909 | 125.735 |
| | TOP OF BANK LEVEL | 129.463 | 129.643 | 129.808 | 129.146 | 129.174 | 129.203 | 129.231 | 128.035 | 128.336 | 128.402 | 128.372 | 128.342 | 128.311 | 128.281 | 128.327 | 128.402 | 128.102 | 127.802 | 127.626 | 127.924 | 128.222 | 127.433 | 127.157 | 126.881 | 126.604 | 126.553 | 126.529 | 126.505 | 126.562 | 126.008 | 125.854 |
| | NSL | 129.267 | 129.179 | 129.395 | 129.012 | 128.703 | 128.590 | 128.477 | 128.364 | 128.252 | 128.139 | 128.145 | 128.200 | 128.255 | 128.310 | 128.365 | 128.421 | 128.189 | 127.845 | 127.502 | 127.220 | 127.129 | 127.037 | 126.947 | 126.856 | 126.765 | 126.674 | 126.511 | 126.340 | 126.168 | 125.998 | 125.826 |
| | Chainage IN KM | 1+500 | 1+550 | 1+600 | 1+650 | 1+700 | 1+750 | 1+800 | 1+850 | 1+900 | 1+950 | 2+000 | 2+050 | 2+100 | 2+150 | 2+200 | 2+250 | 2+300 | 2+350 | 2+400 | 2+450 | 2+500 | 2+550 | 2+600 | 2+650 | 2+700 | 2+750 | 2+800 | 2+850 | 2+900 | 2+950 | 3+000 |

LEGEND

| | | | |
|---|---|---|---|
| NSL | | EXISTING BED LEVEL | |
| EXISTING TOP OF BANK | | PROPOSED BED LEVEL | |
| EXISTING STRUCTURE | | PROPOSED FSL | |
| MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL | |
| NEW STRUCTURE | | | |

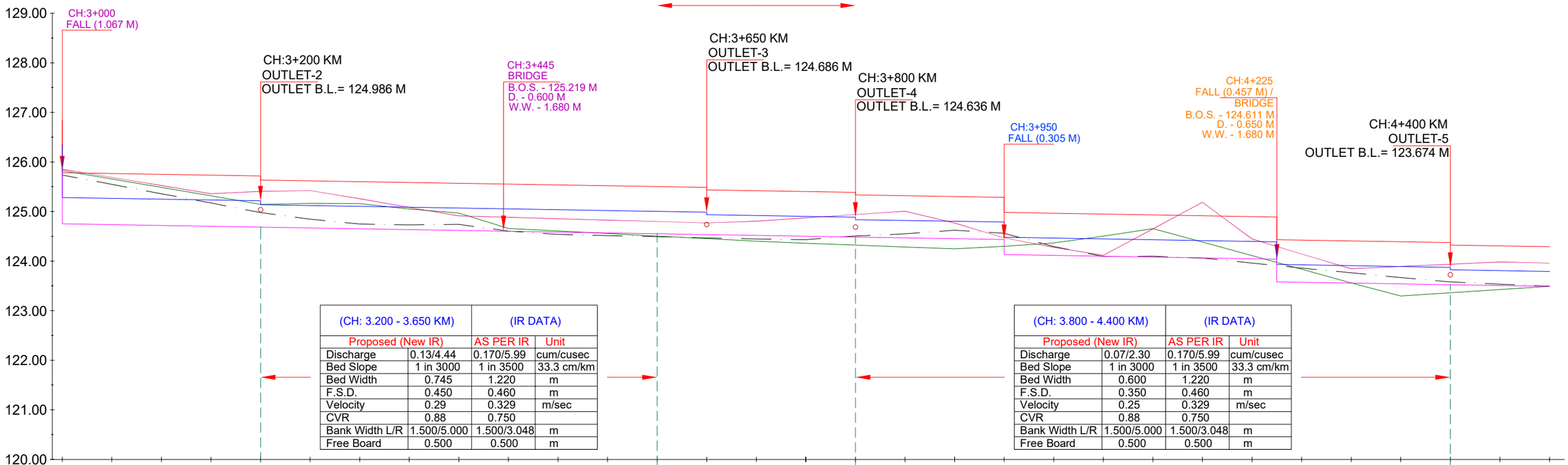
IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ LSEC- 02 of 04 |

# L- SECTION OF ITMA MINOR
## (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 3+000 TO 4+500

| (CH: 0.000 - 3.200 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.19/6.64 | 0.334/11.79 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.860 | 1.600 | m |
| F.S.D. | 0.530 | 0.530 | m |
| Velocity | 0.32 | 0.373 | m/sec |
| CVR | 0.88 | 0.910 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 3.650 - 3.800 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.10/3.37 | 0.170/5.99 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.700 | 1.220 | m |
| F.S.D. | 0.400 | 0.460 | m |
| Velocity | 0.27 | 0.329 | m/sec |
| CVR | 0.89 | 0.750 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |




| (CH: 3.200 - 3.650 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.13/4.44 | 0.170/5.99 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.745 | 1.220 | m |
| F.S.D. | 0.450 | 0.460 | m |
| Velocity | 0.29 | 0.329 | m/sec |
| CVR | 0.88 | 0.750 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 3.800 - 4.400 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.07/2.30 | 0.170/5.99 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.600 | 1.220 | m |
| F.S.D. | 0.350 | 0.460 | m |
| Velocity | 0.25 | 0.329 | m/sec |
| CVR | 0.88 | 0.750 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 3+000 | 3+050 | 3+100 | 3+150 | 3+200 | 3+250 | 3+300 | 3+350 | 3+400 | 3+450 | 3+500 | 3+550 | 3+600 | 3+650 | 3+700 | 3+750 | 3+800 | 3+850 | 3+900 | 3+950 | 4+000 | 4+050 | 4+100 | 4+150 | 4+200 | 4+250 | 4+300 | 4+350 | 4+400 | 4+450 | 4+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 126.850 125.783 | 125.766 | 125.750 | 125.733 | 125.736 | 125.620 | 125.603 | 125.586 | 125.570 | 125.553 | 125.536 | 125.520 | 125.503 | 125.486 | 125.420 | 125.403 | 125.386 | 125.320 | 125.303 | 125.286 | 124.965 | 124.948 | 124.931 | 124.915 | 124.898 | 124.890 | 124.424 | 124.408 | 124.391 | 124.324 | 124.308 | 124.291 |
| | F.S.L. | 126.350 125.283 | 125.266 | 125.250 | 125.233 | 125.236 | 125.120 | 125.103 | 125.086 | 125.070 | 125.053 | 125.036 | 125.020 | 125.003 | 124.986 | 124.920 | 124.903 | 124.886 | 124.820 | 124.803 | 124.786 | 124.465 | 124.448 | 124.431 | 124.415 | 124.398 | 124.390 | 123.924 | 123.908 | 123.891 | 123.824 | 123.808 | 123.791 |
| | Proposed Bed Level | 125.820 124.753 | 124.736 | 124.720 | 124.703 | 124.686 | 124.670 | 124.653 | 124.636 | 124.620 | 124.603 | 124.586 | 124.570 | 124.553 | 124.536 | 124.520 | 124.503 | 124.486 | 124.470 | 124.453 | 124.436 | 124.115 | 124.098 | 124.081 | 124.065 | 124.048 | 124.040 | 123.574 | 123.558 | 123.541 | 123.524 | 123.508 | 123.491 |
| EXISTING DATA | Bed Level | 125.735 | 125.548 | 125.359 | 125.172 | 124.980 | 124.844 | 124.748 | 124.730 | 124.740 | 124.606 | 124.538 | 124.515 | 124.493 | 124.469 | 124.445 | 124.433 | 124.506 | 124.551 | 124.624 | 124.560 | 124.294 | 124.094 | 124.098 | 124.061 | 123.961 | 123.859 | 123.764 | 123.666 | 123.582 | 123.535 | 123.494 |
| | TOP OF BANK LEVEL | 125.854 | 125.689 | 125.525 | 125.361 | 125.407 | 125.423 | 125.259 | 125.082 | 124.912 | 124.884 | 124.855 | 124.827 | 124.799 | 124.770 | 124.805 | 124.873 | 124.940 | 125.007 | 124.767 | 124.468 | 124.278 | 124.115 | 124.650 | 125.186 | 124.447 | 124.144 | 123.847 | 123.892 | 123.937 | 123.982 | 123.959 |
| | NSL | 125.826 | 125.657 | 125.487 | 125.316 | 125.146 | 125.162 | 125.158 | 125.050 | 124.967 | 124.660 | 124.608 | 124.557 | 124.505 | 124.454 | 124.402 | 124.360 | 124.322 | 124.284 | 124.246 | 124.297 | 124.367 | 124.505 | 124.654 | 124.384 | 124.109 | 123.835 | 123.560 | 123.297 | 123.361 | 123.425 | 123.489 |
| | Chainage IN KM | 3+000 | 3+050 | 3+100 | 3+150 | 3+200 | 3+250 | 3+300 | 3+350 | 3+400 | 3+450 | 3+500 | 3+550 | 3+600 | 3+650 | 3+700 | 3+750 | 3+800 | 3+850 | 3+900 | 3+950 | 4+000 | 4+050 | 4+100 | 4+150 | 4+200 | 4+250 | 4+300 | 4+350 | 4+400 | 4+450 | 4+500 |

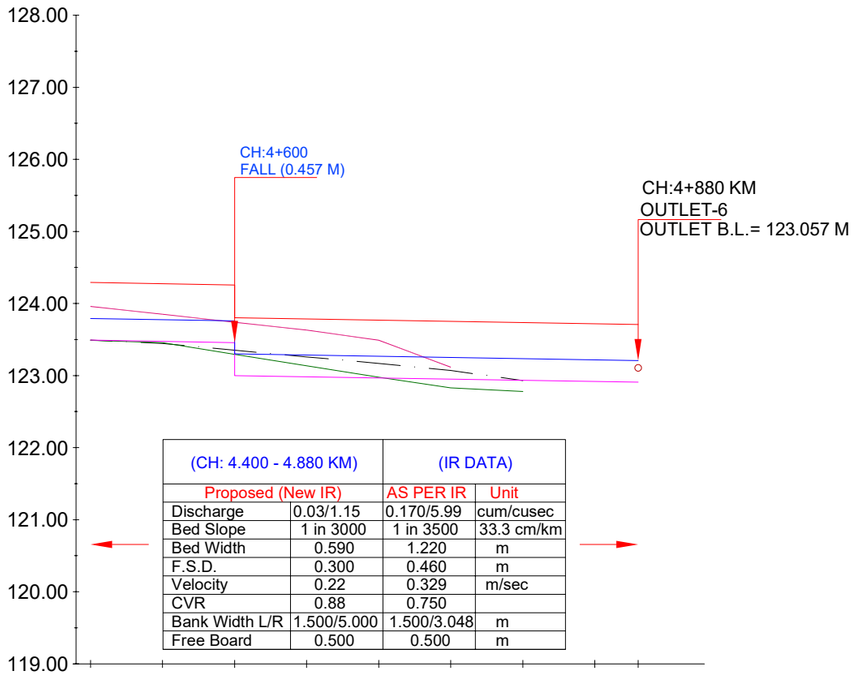
LEGEND

| | | | |
|---|---|---|---|
| NSL | | EXISTING BED LEVEL | |
| EXISTING TOP OF BANK | | PROPOSED BED LEVEL | |
| EXISTING STRUCTURE | | PROPOSED FSL | |
| MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL | |
| NEW STRUCTURE | | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ LSEC- 03 of 04 |

# L- SECTION OF ITMA MINOR
## (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 4+500 TO 4+880




| (CH: 4.400 - 4.880 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.03/1.15 | 0.170/5.99 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.590 | 1.220 | m |
| F.S.D. | 0.300 | 0.460 | m |
| Velocity | 0.22 | 0.329 | m/sec |
| CVR | 0.88 | 0.750 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 4+500 | 4+550 | 4+600 | 4+650 | 4+700 | 4+750 | 4+800 | 4+850 | 4+880 |
|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 124.291 | 124.274 | 124.258<br>123.801 | 123.784 | 123.767 | 123.751 | 123.734 | 123.717 | 123.707 |
| | F.S.L. | 123.791 | 123.774 | 123.758<br>123.301 | 123.284 | 123.267 | 123.251 | 123.234 | 123.217 | 123.207 |
| | Proposed Bed Level | 123.491 | 123.474 | 123.458<br>123.001 | 122.984 | 122.967 | 122.951 | 122.934 | 122.917 | 122.907 |
| EXISTING DATA | Bed Level | 123.494 | 123.445 | 123.351 | 123.259 | 123.168 | 123.071 | 122.932 | | |
| | TOP OF BANK LEVEL | 123.959 | 123.850 | 123.741 | 123.632 | 123.492 | 123.115 | | | |
| | NSL | 123.489 | 123.456 | 123.296 | 123.137 | 122.977 | 122.830 | 122.778 | | |
| | Chainage IN KM | | | | | | | | | |

LEGEND

| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ LSEC- 04 of 04 |

# *MALI MINOR*

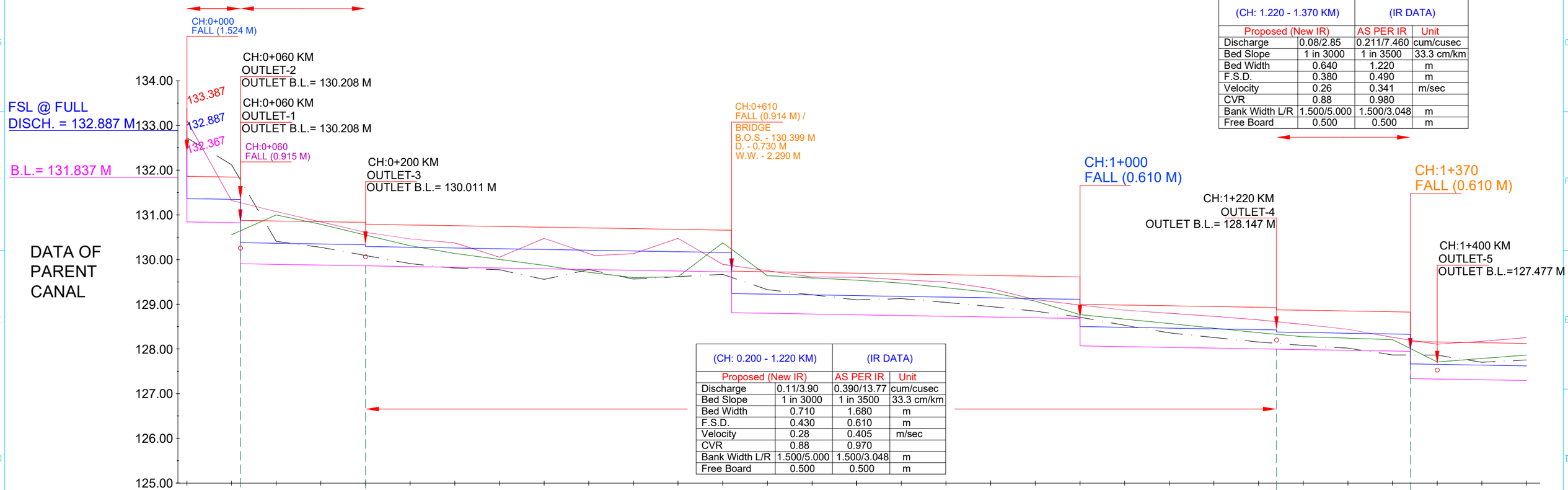
# L- SECTION OF MALI MINOR
## (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 0+000 TO 1+500

| (CH: 0.000 - 0.060 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.19/6.65 | 0.390/13.77 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.880 | 1.680 | m |
| F.S.D. | 0.520 | 0.610 | m |
| Velocity | 0.32 | 0.405 | m/sec |
| CVR | 0.88 | 0.970 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 0.060 - 0.200 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.14/4.92 | 0.390/13.77 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.770 | 1.680 | m |
| F.S.D. | 0.470 | 0.610 | m |
| Velocity | 0.30 | 0.405 | m/sec |
| CVR | 0.88 | 0.970 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 1.220 - 1.370 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.08/2.85 | 0.211/7.460 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.640 | 1.220 | m |
| F.S.D. | 0.380 | 0.490 | m |
| Velocity | 0.26 | 0.341 | m/sec |
| CVR | 0.88 | 0.980 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 0.200 - 1.220 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.11/3.90 | 0.390/13.77 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.710 | 1.680 | m |
| F.S.D. | 0.430 | 0.610 | m |
| Velocity | 0.28 | 0.405 | m/sec |
| CVR | 0.88 | 0.970 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |




| | | 0+000 | 0+050 | 0+060 | 0+100 | 0+150 | 0+200 | 0+250 | 0+300 | 0+350 | 0+400 | 0+450 | 0+500 | 0+550 | 0+600 | 0+650 | 0+700 | 0+750 | 0+800 | 0+850 | 0+900 | 0+950 | 1+000 | 1+050 | 1+100 | 1+150 | 1+200 | 1+220 | 1+250 | 1+300 | 1+350 | 1+370 | 1+400 | 1+450 | 1+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 133.387 | 131.846 | 131.863 | 130.865 | 130.848 | 130.831 | 130.775 | 130.758 | 130.741 | 130.725 | 130.708 | 130.691 | 130.675 | 130.658 | 129.741 | 129.727 | 129.711 | 129.694 | 129.677 | 129.661 | 129.644 | 129.627 | 129.611 | 128.984 | 128.967 | 128.951 | 128.934 | 128.877 | 128.867 | 128.851 | 128.834 | 128.827 | 128.157 | 128.141 | 128.124 |
| | F.S.L. | 132.887 | 131.346 | 131.363 | 130.365 | 130.348 | 130.331 | 130.275 | 130.258 | 130.241 | 130.225 | 130.208 | 130.191 | 130.175 | 130.158 | 129.241 | 129.227 | 129.211 | 129.194 | 129.177 | 129.161 | 129.144 | 129.127 | 129.111 | 128.484 | 128.467 | 128.451 | 128.434 | 128.377 | 128.367 | 128.351 | 128.334 | 127.667 | 127.657 | 127.641 | 127.624 |
| | Proposed Bed Level | 132.367 | 130.826 | 130.843 | 129.895 | 129.878 | 129.861 | 129.845 | 129.828 | 129.811 | 129.795 | 129.778 | 129.761 | 129.745 | 129.728 | 128.811 | 128.797 | 128.781 | 128.764 | 128.747 | 128.731 | 128.714 | 128.697 | 128.681 | 128.054 | 128.037 | 128.021 | 128.004 | 127.997 | 127.987 | 127.971 | 127.954 | 127.337 | 127.327 | 127.311 | 127.294 |
| EXISTING DATA | Bed Level | 132.724 | 132.124 | | 130.407 | 130.275 | 130.091 | 129.909 | 129.809 | 129.772 | 129.556 | 129.778 | 129.563 | 129.619 | 129.669 | 129.327 | 129.213 | 129.099 | 129.127 | 129.041 | 128.949 | 128.847 | 128.711 | 128.529 | 128.360 | 128.258 | 128.157 | 128.079 | 128.018 | 127.868 | 127.702 | 127.755 | | | | | |
| | TOP OF BANK LEVEL | 133.115 | 131.323 | | 131.074 | 130.842 | 130.610 | 130.462 | 130.373 | 130.053 | 130.476 | 130.078 | 130.133 | 130.473 | 129.894 | 129.752 | 129.609 | 129.606 | 129.550 | 129.497 | 129.350 | 129.106 | 128.984 | 128.870 | 128.800 | 128.731 | 128.652 | 128.550 | 128.440 | 128.262 | 128.172 | 128.254 | | | | | |
| | NSL | | 130.557 | | 130.997 | 130.788 | 130.550 | 130.311 | 130.139 | 130.004 | 129.872 | 129.716 | 129.598 | 129.614 | 130.376 | 129.639 | 129.589 | 129.538 | 129.474 | 129.371 | 129.264 | 129.071 | 128.770 | 128.668 | 128.570 | 128.466 | 128.363 | 128.276 | 128.243 | 128.210 | 127.787 | 127.864 | | | | | |
| | Chainage IN KM | 0+000 | 0+050 | 0+060 | 0+100 | 0+150 | 0+200 | 0+250 | 0+300 | 0+350 | 0+400 | 0+450 | 0+500 | 0+550 | 0+600 | 0+650 | 0+700 | 0+750 | 0+800 | 0+850 | 0+900 | 0+950 | 1+000 | 1+050 | 1+100 | 1+150 | 1+200 | 1+220 | 1+250 | 1+300 | 1+350 | 1+370 | 1+400 | 1+450 | 1+500 |

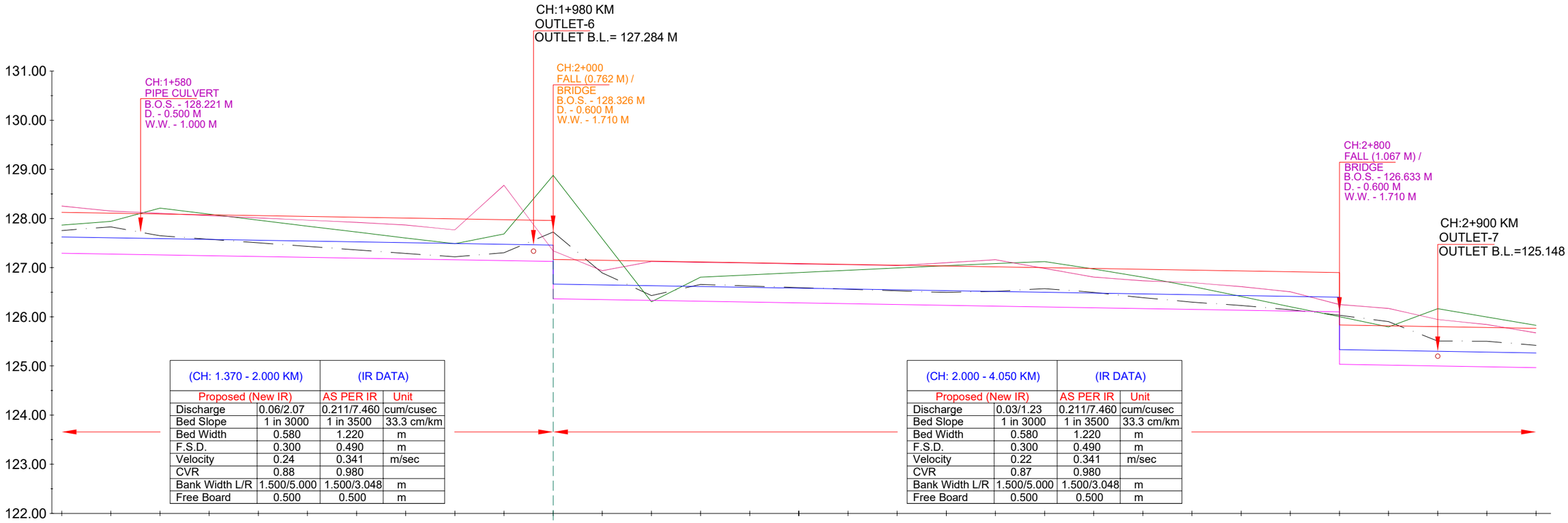
LEGEND

| | | | |
|---|---|---|---|
| NSL | | EXISTING BED LEVEL | |
| EXISTING TOP OF BANK | | PROPOSED BED LEVEL | |
| EXISTING STRUCTURE | | PROPOSED FSL | |
| MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL | |
| NEW STRUCTURE | | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ LSEC- 01 of 03 |

# L- SECTION OF MALI MINOR
## (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 1+500 TO 3+000




| (CH: 1.370 - 2.000 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.06/2.07 | 0.211/7.460 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.580 | 1.220 | m |
| F.S.D. | 0.300 | 0.490 | m |
| Velocity | 0.24 | 0.341 | m/sec |
| CVR | 0.88 | 0.980 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 2.000 - 4.050 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.03/1.23 | 0.211/7.460 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.580 | 1.220 | m |
| F.S.D. | 0.300 | 0.490 | m |
| Velocity | 0.22 | 0.341 | m/sec |
| CVR | 0.87 | 0.980 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 128.124 | 128.107 | 128.091 | 128.074 | 128.057 | 128.041 | 128.024 | 128.007 | 127.991 | 127.974 | 127.957 | 127.165 | 127.149 | 127.132 | 127.115 | 127.099 | 127.082 | 127.065 | 127.049 | 127.032 | 127.015 | 126.999 | 126.982 | 126.965 | 126.949 | 126.932 | 126.915 | 126.899 | 125.832 | 125.815 | 125.798 | 125.782 | 125.765 |
| | F.S.L. | 127.624 | 127.607 | 127.591 | 127.574 | 127.557 | 127.541 | 127.524 | 127.507 | 127.491 | 127.474 | 127.457 | 126.665 | 126.649 | 126.632 | 126.615 | 126.599 | 126.582 | 126.565 | 126.549 | 126.532 | 126.515 | 126.499 | 126.482 | 126.465 | 126.449 | 126.432 | 126.415 | 126.399 | 125.332 | 125.315 | 125.298 | 125.282 | 125.265 |
| | Proposed Bed Level | 127.294 | 127.277 | 127.261 | 127.244 | 127.227 | 127.211 | 127.194 | 127.177 | 127.161 | 127.144 | 127.127 | 126.365 | 126.349 | 126.332 | 126.315 | 126.299 | 126.282 | 126.265 | 126.249 | 126.232 | 126.215 | 126.199 | 126.182 | 126.165 | 126.149 | 126.132 | 126.115 | 126.099 | 125.032 | 125.015 | 124.998 | 124.982 | 124.965 |
| EXISTING DATA | Bed Level | 127.755 | 127.829 | 127.649 | 127.576 | 127.504 | 127.432 | 127.360 | 127.288 | 127.220 | 127.302 | 127.726 | 126.894 | 126.432 | 126.659 | 126.626 | 126.594 | 126.561 | 126.528 | 126.495 | 126.517 | 126.573 | 126.497 | 126.388 | 126.299 | 126.229 | 126.142 | 126.033 | 125.901 | 125.506 | 125.420 | | | |
| | TOP OF BANK LEVEL | 128.254 | 128.153 | 128.106 | 128.059 | 128.013 | 127.966 | 127.920 | 127.868 | 127.768 | 128.676 | 127.343 | 126.939 | 127.125 | 127.108 | 127.091 | 127.075 | 127.058 | 127.042 | 127.099 | 127.162 | 126.985 | 126.809 | 126.732 | 126.694 | 126.612 | 126.508 | 126.250 | 126.171 | 125.945 | 125.842 | | | |
| | NSL | 127.864 | 127.941 | 128.211 | 128.089 | 127.967 | 127.845 | 127.724 | 127.602 | 127.488 | 127.685 | 128.878 | 127.590 | 126.306 | 126.806 | 126.852 | 126.899 | 126.946 | 126.993 | 127.039 | 127.082 | 127.123 | 126.970 | 126.807 | 126.617 | 126.412 | 126.206 | 126.001 | 125.795 | 126.166 | 125.994 | 125.826 | | |
| | Chainage IN KM | 1+500 | 1+550 | 1+600 | 1+650 | 1+700 | 1+750 | 1+800 | 1+850 | 1+900 | 1+950 | 2+000 | 2+050 | 2+100 | 2+150 | 2+200 | 2+250 | 2+300 | 2+350 | 2+400 | 2+450 | 2+500 | 2+550 | 2+600 | 2+650 | 2+700 | 2+750 | 2+800 | 2+850 | 2+900 | 2+950 | 3+000 | | |

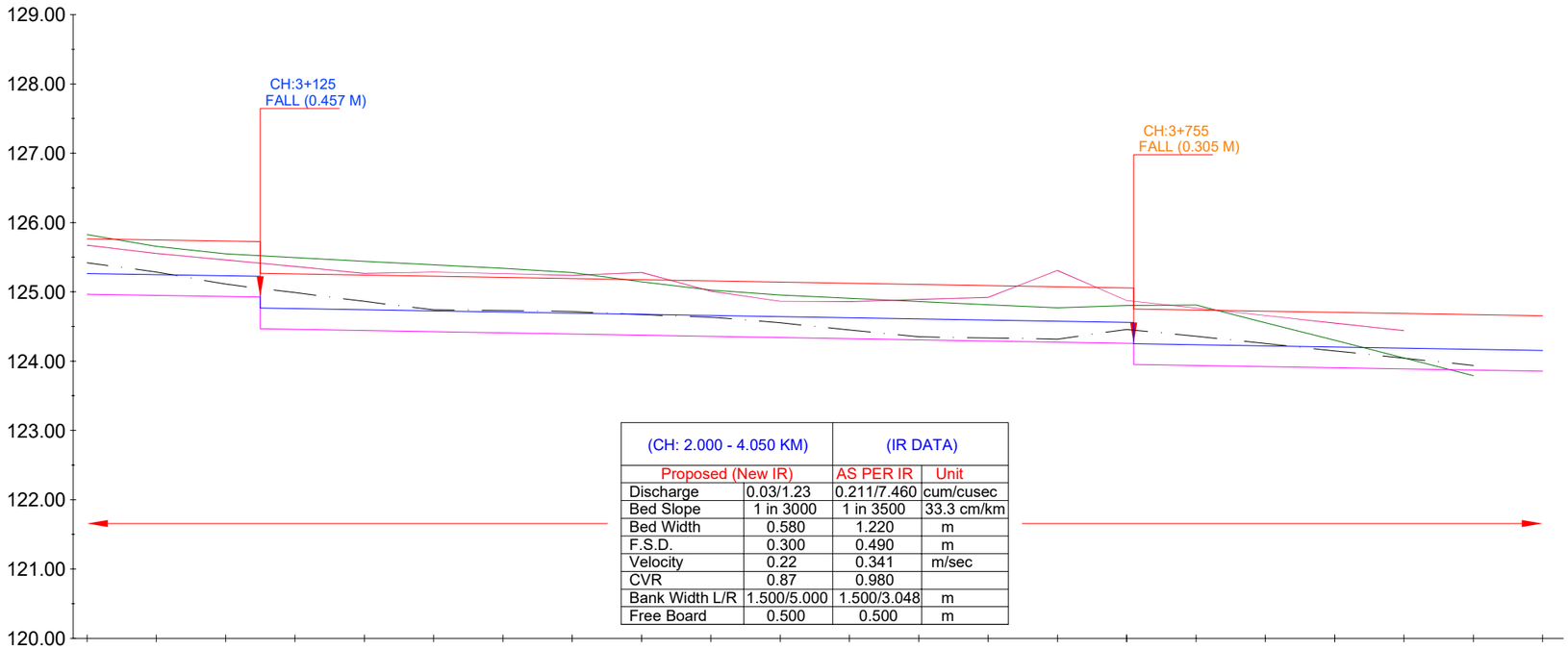
LEGEND

| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ LSEC- 02 of 03 |

# L- SECTION OF MALI MINOR
## (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 3+000 TO 4+050




| (CH: 2.000 - 4.050 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.03/1.23 | 0.211/7.460 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3500 | 33.3 cm/km |
| Bed Width | 0.580 | 1.220 | m |
| F.S.D. | 0.300 | 0.490 | m |
| Velocity | 0.22 | 0.341 | m/sec |
| CVR | 0.87 | 0.980 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 3+000 | 3+050 | 3+100 | 3+150 | 3+200 | 3+250 | 3+300 | 3+350 | 3+400 | 3+450 | 3+500 | 3+550 | 3+600 | 3+650 | 3+700 | 3+750 | 3+800 | 3+850 | 3+900 | 3+950 | 4+000 | 4+050 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 125.765 | 125.748 | 125.732 | 125.723<br>125.266<br>125.258 | 125.241 | 125.225 | 125.208 | 125.191 | 125.175 | 125.158 | 125.141 | 125.125 | 125.108 | 125.091 | 125.075 | 125.058<br>125.056<br>124.751 | 124.736 | 124.720 | 124.703 | 124.686 | 124.670 | 124.653 |
| | F.S.L. | 125.265 | 125.248 | 125.232 | 125.223<br>124.766<br>124.758 | 124.741 | 124.725 | 124.708 | 124.691 | 124.675 | 124.658 | 124.641 | 124.625 | 124.608 | 124.591 | 124.575 | 124.558<br>124.556<br>124.251 | 124.236 | 124.220 | 124.203 | 124.186 | 124.170 | 124.153 |
| | Proposed Bed Level | 124.965 | 124.948 | 124.932 | 124.923<br>124.466<br>124.458 | 124.441 | 124.425 | 124.408 | 124.391 | 124.375 | 124.358 | 124.341 | 124.325 | 124.308 | 124.291 | 124.275 | 124.258<br>124.256<br>123.951 | 123.936 | 123.920 | 123.903 | 123.886 | 123.870 | 123.853 |
| EXISTING DATA | Bed Level | 125.420 | 125.287 | 125.111 | 124.988 | 124.862 | 124.741 | 124.732 | 124.717 | 124.671 | 124.634 | 124.553 | 124.450 | 124.351 | 124.334 | 124.316 | 124.458 | 124.360 | 124.254 | 124.148 | 124.043 | 123.937 | |
| | TOP OF BANK LEVEL | 125.672 | 125.553 | 125.459 | 125.365 | 125.266 | 125.286 | 125.264 | 125.238 | 125.281 | 125.009 | 124.864 | 124.859 | 124.890 | 124.920 | 125.310 | 124.875 | 124.767 | 124.658 | 124.549 | 124.441 | | |
| | NSL | 125.826 | 125.656 | 125.550 | 125.496 | 125.442 | 125.389 | 125.338 | 125.279 | 125.145 | 125.025 | 124.952 | 124.906 | 124.860 | 124.815 | 124.769 | 124.804 | 124.810 | 124.555 | 124.300 | 124.045 | 123.791 | |
| | Chainage IN KM | | | | | | | | | | | | | | | | | | | | | | |

LEGEND

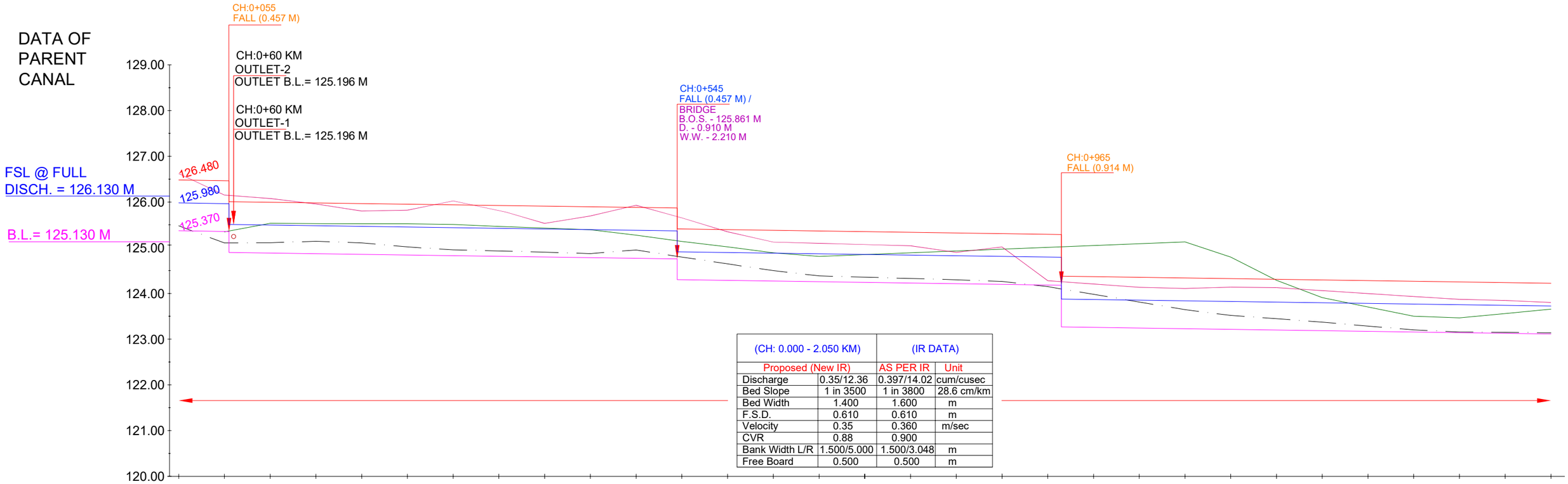
| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ LSEC- 03 of 03 |

# *THUMBHI MINOR*

# L- SECTION OF THUMBHI MINOR
## (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 0+000 TO 1+500




| (CH: 0.000 - 2.050 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.35/12.36 | 0.397/14.02 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3800 | 28.6 cm/km |
| Bed Width | 1.400 | 1.600 | m |
| F.S.D. | 0.610 | 0.610 | m |
| Velocity | 0.35 | 0.360 | m/sec |
| CVR | 0.88 | 0.900 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 0+000 | 0+050 | 0+100 | 0+150 | 0+200 | 0+250 | 0+300 | 0+350 | 0+400 | 0+450 | 0+500 | 0+550 | 0+600 | 0+650 | 0+700 | 0+750 | 0+800 | 0+850 | 0+900 | 0+950 | 1+000 | 1+050 | 1+100 | 1+150 | 1+200 | 1+250 | 1+300 | 1+350 | 1+400 | 1+450 | 1+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 126.480 | 126.466 | 126.464 | 126.007 | 125.994 | 125.980 | 125.966 | 125.952 | 125.937 | 125.923 | 125.909 | 125.894 | 125.880 | 125.867 | 125.410 | 125.409 | 125.395 | 125.380 | 125.366 | 125.352 | 125.337 | 125.323 | 125.309 | 125.295 | 125.290 | 124.376 | 124.366 | 124.352 | 124.338 | 124.323 | 124.309 | 124.295 | 124.281 | 124.266 | 124.252 | 124.238 | 124.223 |
| | F.S.L. | 125.980 | 125.966 | 125.964 | 125.507 | 125.494 | 125.480 | 125.466 | 125.452 | 125.437 | 125.423 | 125.409 | 125.394 | 125.380 | 125.367 | 124.910 | 124.909 | 124.895 | 124.880 | 124.866 | 124.852 | 124.837 | 124.823 | 124.809 | 124.795 | 124.790 | 123.876 | 123.866 | 123.852 | 123.838 | 123.823 | 123.809 | 123.795 | 123.781 | 123.766 | 123.752 | 123.738 | 123.723 |
| | Proposed Bed Level | 125.370 | 125.356 | 125.354 | 124.897 | 124.884 | 124.870 | 124.856 | 124.842 | 124.827 | 124.813 | 124.799 | 124.784 | 124.770 | 124.757 | 124.300 | 124.299 | 124.285 | 124.270 | 124.256 | 124.242 | 124.227 | 124.213 | 124.199 | 124.185 | 124.180 | 123.266 | 123.256 | 123.242 | 123.228 | 123.213 | 123.199 | 123.185 | 123.171 | 123.156 | 123.142 | 123.128 | 123.113 |
| EXISTING DATA | Bed Level | 125.479 | 125.104 | 125.109 | 125.141 | 125.105 | 125.017 | 124.953 | 124.930 | 124.902 | 124.872 | 124.951 | 124.796 | 124.647 | 124.498 | 124.384 | 124.355 | 124.327 | 124.299 | 124.262 | 124.149 | 123.980 | 123.813 | 123.646 | 123.519 | 123.447 | 123.371 | 123.286 | 123.204 | 123.156 | 123.149 | 123.139 |
| | TOP OF BANK LEVEL | 126.622 | 126.153 | 126.076 | 125.957 | 125.802 | 125.821 | 126.024 | 125.779 | 125.533 | 125.694 | 125.929 | 125.653 | 125.349 | 125.124 | 125.096 | 125.069 | 125.042 | 124.899 | 125.017 | 124.278 | 124.207 | 124.134 | 124.108 | 124.137 | 124.128 | 124.062 | 123.997 | 123.933 | 123.872 | 123.847 | 123.802 |
| | NSL | | 125.345 | 125.533 | 125.527 | 125.523 | 125.522 | 125.507 | 125.465 | 125.429 | 125.394 | 125.276 | 125.137 | 125.018 | 124.889 | 124.808 | 124.848 | 124.889 | 124.929 | 124.969 | 125.008 | 125.049 | 125.088 | 125.128 | 124.795 | 124.286 | 123.909 | 123.705 | 123.500 | 123.465 | 123.561 | 123.657 |
| | Chainage IN KM | 0+000 | 0+050 | 0+100 | 0+150 | 0+200 | 0+250 | 0+300 | 0+350 | 0+400 | 0+450 | 0+500 | 0+550 | 0+600 | 0+650 | 0+700 | 0+750 | 0+800 | 0+850 | 0+900 | 0+950 | 1+000 | 1+050 | 1+100 | 1+150 | 1+200 | 1+250 | 1+300 | 1+350 | 1+400 | 1+450 | 1+500 |

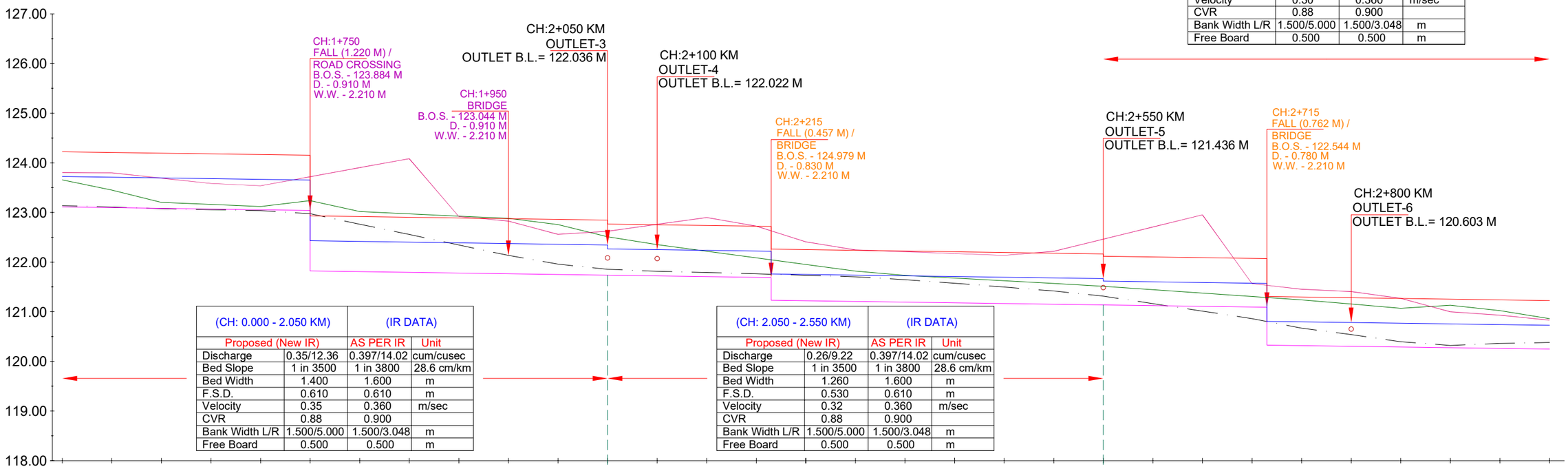
LEGEND

| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ LSEC- 01 of 04 |

# L- SECTION OF THUMBHI MINOR
## (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 1+500 TO 3+000




| (CH: 0.000 - 2.050 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.35/12.36 | 0.397/14.02 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3800 | 28.6 cm/km |
| Bed Width | 1.400 | 1.600 | m |
| F.S.D. | 0.610 | 0.610 | m |
| Velocity | 0.35 | 0.360 | m/sec |
| CVR | 0.88 | 0.900 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 2.050 - 2.550 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.26/9.22 | 0.397/14.02 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3800 | 28.6 cm/km |
| Bed Width | 1.260 | 1.600 | m |
| F.S.D. | 0.530 | 0.610 | m |
| Velocity | 0.32 | 0.360 | m/sec |
| CVR | 0.88 | 0.900 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 2.550 - 3.300 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.20/6.97 | 0.397/14.02 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3800 | 28.6 cm/km |
| Bed Width | 1.150 | 1.600 | m |
| F.S.D. | 0.480 | 0.610 | m |
| Velocity | 0.30 | 0.360 | m/sec |
| CVR | 0.88 | 0.900 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

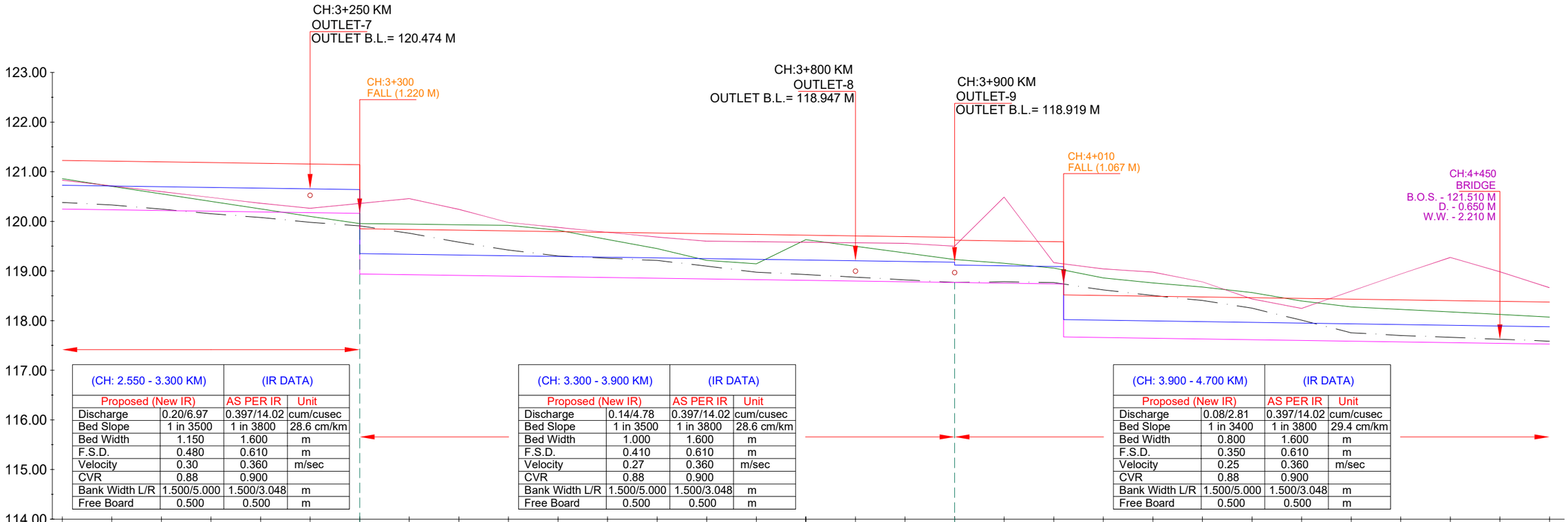
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 124.223 | 124.209 | 124.195 | 124.181 | 124.166 | 124.152<br>122.932 | 122.918 | 122.903 | 122.889 | 122.875 | 122.861 | 122.846<br>122.766 | 122.752 | 122.738 | 122.723<br>122.719<br>122.262 | 122.252 | 122.238 | 122.224 | 122.209 | 122.195 | 122.181 | 122.166<br>122.116 | 122.102 | 122.088 | 122.074<br>122.069<br>121.307 | 121.297 | 121.283 | 121.269 | 121.254 | 121.240 | 121.226 |
| | F.S.L. | 123.723 | 123.709 | 123.695 | 123.681 | 123.666 | 123.652<br>122.432 | 122.418 | 122.403 | 122.389 | 122.375 | 122.361 | 122.346<br>122.266 | 122.252 | 122.238 | 122.223<br>122.219<br>121.762 | 121.752 | 121.738 | 121.724 | 121.709 | 121.695 | 121.681 | 121.666<br>121.616 | 121.602 | 121.588 | 121.574<br>121.569<br>120.807 | 120.797 | 120.783 | 120.769 | 120.754 | 120.740 | 120.726 |
| | Proposed Bed Level | 123.113 | 123.099 | 123.085 | 123.071 | 123.056 | 123.042<br>121.822 | 121.808 | 121.793 | 121.779 | 121.765 | 121.751 | 121.736 | 121.722 | 121.708 | 121.693<br>121.689<br>121.232 | 121.222 | 121.208 | 121.194 | 121.179 | 121.165 | 121.151 | 121.136 | 121.122 | 121.108 | 121.094<br>121.089<br>120.327 | 120.317 | 120.303 | 120.289 | 120.274 | 120.260 | 120.246 |
| EXISTING DATA | Bed Level | 123.139 | 123.108 | 123.076 | 123.055 | 123.036 | 122.974 | 122.764 | 122.556 | 122.345 | 122.134 | 121.960 | 121.855 | 121.814 | 121.790 | 121.764 | 121.733 | 121.705 | 121.647 | 121.575 | 121.497 | 121.418 | 121.344 | 121.163 | 121.013 | 120.860 | 120.671 | 120.539 | 120.396 | 120.321 | 120.362 | 120.381 |
| | TOP OF BANK LEVEL | 123.802 | 123.799 | 123.692 | 123.584 | 123.538 | 123.720 | 123.902 | 124.085 | 122.918 | 122.827 | 122.561 | 122.621 | 122.760 | 122.899 | 122.726 | 122.409 | 122.245 | 122.209 | 122.172 | 122.136 | 122.216 | 122.462 | 122.708 | 122.954 | 121.566 | 121.454 | 121.408 | 121.270 | 120.999 | 120.930 | 120.829 |
| | NSL | 123.657 | 123.452 | 123.202 | 123.161 | 123.119 | 123.238 | 123.018 | 122.972 | 122.926 | 122.881 | 122.756 | 122.509 | 122.351 | 122.217 | 122.084 | 121.953 | 121.819 | 121.731 | 121.677 | 121.624 | 121.570 | 121.511 | 121.443 | 121.375 | 121.306 | 121.239 | 121.156 | 121.071 | 121.132 | 121.021 | 120.861 |
| | Chainage IN KM | 1+500 | 1+550 | 1+600 | 1+650 | 1+700 | 1+750 | 1+800 | 1+850 | 1+900 | 1+950 | 2+000 | 2+050 | 2+100 | 2+150 | 2+200 | 2+250 | 2+300 | 2+350 | 2+400 | 2+450 | 2+500 | 2+550 | 2+600 | 2+650 | 2+700 | 2+750 | 2+800 | 2+850 | 2+900 | 2+950 | 3+000 |

| LEGEND | | | |
|---|---|---|---|
| NSL | | EXISTING BED LEVEL | |
| EXISTING TOP OF BANK | | PROPOSED BED LEVEL | |
| EXISTING STRUCTURE | | PROPOSED FSL | |
| MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL | |
| NEW STRUCTURE | | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ LSEC- 02 of 04 |

# L- SECTION OF THUMBHI MINOR
## (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 3+000 TO 4+500




| (CH: 2.550 - 3.300 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.20/6.97 | 0.397/14.02 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3800 | 28.6 cm/km |
| Bed Width | 1.150 | 1.600 | m |
| F.S.D. | 0.480 | 0.610 | m |
| Velocity | 0.30 | 0.360 | m/sec |
| CVR | 0.88 | 0.900 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 3.300 - 3.900 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.14/4.78 | 0.397/14.02 | cum/cusec |
| Bed Slope | 1 in 3500 | 1 in 3800 | 28.6 cm/km |
| Bed Width | 1.000 | 1.600 | m |
| F.S.D. | 0.410 | 0.610 | m |
| Velocity | 0.27 | 0.360 | m/sec |
| CVR | 0.88 | 0.900 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 3.900 - 4.700 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.08/2.81 | 0.397/14.02 | cum/cusec |
| Bed Slope | 1 in 3400 | 1 in 3800 | 29.4 cm/km |
| Bed Width | 0.800 | 1.600 | m |
| F.S.D. | 0.350 | 0.610 | m |
| Velocity | 0.25 | 0.360 | m/sec |
| CVR | 0.88 | 0.900 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 3+000 | 3+050 | 3+100 | 3+150 | 3+200 | 3+250 | 3+300 | 3+350 | 3+400 | 3+450 | 3+500 | 3+550 | 3+600 | 3+650 | 3+700 | 3+750 | 3+800 | 3+850 | 3+900 | 3+950 | 4+000 | 4+050 | 4+100 | 4+150 | 4+200 | 4+250 | 4+300 | 4+350 | 4+400 | 4+450 | 4+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 121.226 | 121.212 | 121.197 | 121.183 | 121.169 | 121.154 | 121.140 | 121.836 | 121.822 | 119.807 | 119.793 | 119.779 | 119.764 | 119.750 | 119.736 | 119.722 | 119.707 | 119.693 | 119.679 | 119.619 | 119.604 | 119.589 | 119.566 | 118.519 | 118.508 | 118.493 | 118.478 | 118.463 | 118.449 | 118.434 | 118.419 | 118.405 | 118.390 | 118.375 |
| | F.S.L. | 120.726 | 120.712 | 120.697 | 120.683 | 120.669 | 120.654 | 120.640 | 119.350 | 119.336 | 119.322 | 119.307 | 119.293 | 119.279 | 119.264 | 119.250 | 119.236 | 119.222 | 119.207 | 119.193 | 119.179 | 119.119 | 119.104 | 119.089 | 119.066 | 118.019 | 118.008 | 117.993 | 117.978 | 117.963 | 117.949 | 117.934 | 117.919 | 117.905 | 117.890 | 117.875 |
| | Proposed Bed Level | 120.246 | 120.232 | 120.217 | 120.203 | 120.189 | 120.174 | 120.160 | 118.940 | 118.926 | 118.912 | 118.897 | 118.883 | 118.869 | 118.854 | 118.840 | 118.826 | 118.812 | 118.797 | 118.783 | 118.769 | 118.754 | 118.739 | 118.736 | 117.669 | 117.658 | 117.643 | 117.628 | 117.613 | 117.599 | 117.584 | 117.569 | 117.555 | 117.540 | 117.525 |
| EXISTING DATA | Bed Level | 120.381 | 120.330 | 120.246 | 120.155 | 120.078 | 119.981 | 119.910 | 119.760 | 119.580 | 119.422 | 119.304 | 119.258 | 119.212 | 119.098 | 118.976 | 118.928 | 118.875 | 118.822 | 118.769 | 118.783 | 118.766 | 118.619 | 118.506 | 118.405 | 118.251 | 118.008 | 117.754 | 117.701 | 117.663 | 117.624 | 117.586 |
| | TOP OF BANK LEVEL | 120.829 | 120.714 | 120.598 | 120.482 | 120.366 | 120.263 | 120.361 | 120.459 | 120.243 | 119.977 | 119.879 | 119.779 | 119.683 | 119.601 | 119.591 | 119.579 | 119.569 | 119.557 | 119.499 | 120.490 | 119.168 | 119.042 | 118.977 | 118.781 | 118.438 | 118.246 | 118.593 | 118.940 | 119.273 | 118.985 | 118.663 |
| | NSL | 120.861 | 120.706 | 120.554 | 120.402 | 120.251 | 120.099 | 119.957 | 119.945 | 119.932 | 119.920 | 119.822 | 119.636 | 119.450 | 119.213 | 119.144 | 119.632 | 119.499 | 119.366 | 119.233 | 119.157 | 119.057 | 118.860 | 118.758 | 118.677 | 118.565 | 118.395 | 118.275 | 118.225 | 118.175 | 118.125 | 118.071 |
| | Chainage IN KM | 3+000 | 3+050 | 3+100 | 3+150 | 3+200 | 3+250 | 3+300 | 3+350 | 3+400 | 3+450 | 3+500 | 3+550 | 3+600 | 3+650 | 3+700 | 3+750 | 3+800 | 3+850 | 3+900 | 3+950 | 4+000 | 4+050 | 4+100 | 4+150 | 4+200 | 4+250 | 4+300 | 4+350 | 4+400 | 4+450 | 4+500 |

LEGEND

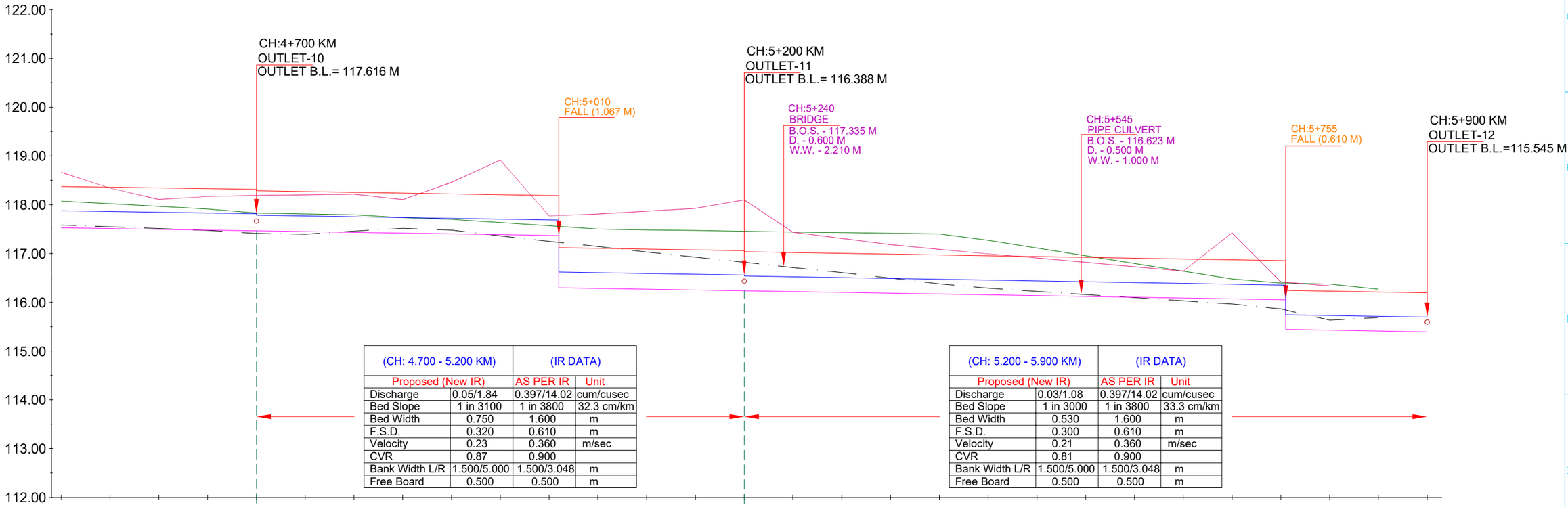
| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

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|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ LSEC- 03 of 04 |

# L- SECTION OF THUMBHI MINOR
## (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 4+500 TO 5+900

| (CH: 3.900 - 4.700 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.08/2.81 | 0.397/14.02 | cum/cusec |
| Bed Slope | 1 in 3400 | 1 in 3800 | 29.4 cm/km |
| Bed Width | 0.800 | 1.600 | m |
| F.S.D. | 0.350 | 0.610 | m |
| Velocity | 0.25 | 0.360 | m/sec |
| CVR | 0.88 | 0.900 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |




| (CH: 4.700 - 5.200 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.05/1.84 | 0.397/14.02 | cum/cusec |
| Bed Slope | 1 in 3100 | 1 in 3800 | 32.3 cm/km |
| Bed Width | 0.750 | 1.600 | m |
| F.S.D. | 0.320 | 0.610 | m |
| Velocity | 0.23 | 0.360 | m/sec |
| CVR | 0.87 | 0.900 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 5.200 - 5.900 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.03/1.08 | 0.397/14.02 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3800 | 33.3 cm/km |
| Bed Width | 0.530 | 1.600 | m |
| F.S.D. | 0.300 | 0.610 | m |
| Velocity | 0.21 | 0.360 | m/sec |
| CVR | 0.81 | 0.900 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 4+500 | 4+550 | 4+600 | 4+650 | 4+700 | 4+750 | 4+800 | 4+850 | 4+900 | 4+950 | 5+000 | 5+050 | 5+100 | 5+150 | 5+200 | 5+250 | 5+300 | 5+350 | 5+400 | 5+450 | 5+500 | 5+550 | 5+600 | 5+650 | 5+700 | 5+750 | 5+800 | 5+850 | 5+900 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 118.375 | 118.361 | 118.346 | 118.331 | 118.316<br>118.286 | 118.270 | 118.254 | 118.238 | 118.222 | 118.206 | 118.190<br>118.186<br>118.119 | 117.107 | 117.090 | 117.074 | 117.058<br>117.038 | 117.021 | 117.005 | 116.988 | 116.971 | 116.955 | 116.938 | 116.921 | 116.905 | 116.888 | 116.871 | 116.855<br>116.853<br>116.243 | 116.228 | 116.211 | 116.195 |
| | F.S.L. | 117.875 | 117.861 | 117.846 | 117.831 | 117.816<br>117.786 | 117.770 | 117.754 | 117.738 | 117.722 | 117.706 | 117.690<br>117.686<br>116.619 | 116.607 | 116.590 | 116.574 | 116.558<br>116.538 | 116.521 | 116.505 | 116.488 | 116.471 | 116.455 | 116.438 | 116.421 | 116.405 | 116.388 | 116.371 | 116.355<br>116.353<br>115.743 | 115.728 | 115.711 | 115.695 |
| | Proposed Bed Level | 117.525 | 117.511 | 117.496 | 117.481 | 117.466 | 117.450 | 117.434 | 117.418 | 117.402 | 117.386 | 117.370<br>117.366<br>116.299 | 116.287 | 116.270 | 116.254 | 116.238 | 116.221 | 116.205 | 116.188 | 116.171 | 116.155 | 116.138 | 116.121 | 116.105 | 116.088 | 116.071 | 116.055<br>116.053<br>115.443 | 115.428 | 115.411 | 115.395 |
| EXISTING DATA | Bed Level | 117.586 | 117.550 | 117.511 | 117.474 | 117.411 | 117.394 | 117.458 | 117.515 | 117.479 | 117.360 | 117.249 | 117.144 | 117.031 | 116.926 | 116.819 | 116.713 | 116.609 | 116.495 | 116.378 | 116.289 | 116.223 | 116.158 | 116.096 | 116.030 | 115.967 | 115.865 | 115.635 | 115.685 | |
| | TOP OF BANK LEVEL | 118.663 | 118.341 | 118.108 | 118.169 | 118.192 | 118.202 | 118.216 | 118.106 | 118.459 | 118.916 | 117.772 | 117.811 | 117.868 | 117.926 | 118.099 | 117.435 | 117.309 | 117.182 | 117.085 | 116.993 | 116.908 | 116.819 | 116.729 | 116.640 | 117.421 | 116.419 | 116.337 | | |
| | NSL | 118.071 | 118.020 | 117.968 | 117.911 | 117.830 | 117.810 | 117.793 | 117.734 | 117.700 | 117.635 | 117.571 | 117.503 | 117.485 | 117.471 | 117.456 | 117.442 | 117.428 | 117.414 | 117.401 | 117.272 | 117.114 | 116.954 | 116.795 | 116.637 | 116.478 | 116.395 | 116.375 | 116.268 | |
| | Chainage IN KM | 4+500 | 4+550 | 4+600 | 4+650 | 4+700 | 4+750 | 4+800 | 4+850 | 4+900 | 4+950 | 5+000 | 5+050 | 5+100 | 5+150 | 5+200 | 5+250 | 5+300 | 5+350 | 5+400 | 5+450 | 5+500 | 5+550 | 5+600 | 5+650 | 5+700 | 5+750 | 5+800 | 5+850 | 5+900 |

LEGEND

| | | | |
|---|---|---|---|
| NSL | | EXISTING BED LEVEL | |
| EXISTING TOP OF BANK | | PROPOSED BED LEVEL | |
| EXISTING STRUCTURE | | PROPOSED FSL | |
| MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL | |
| NEW STRUCTURE | | | |

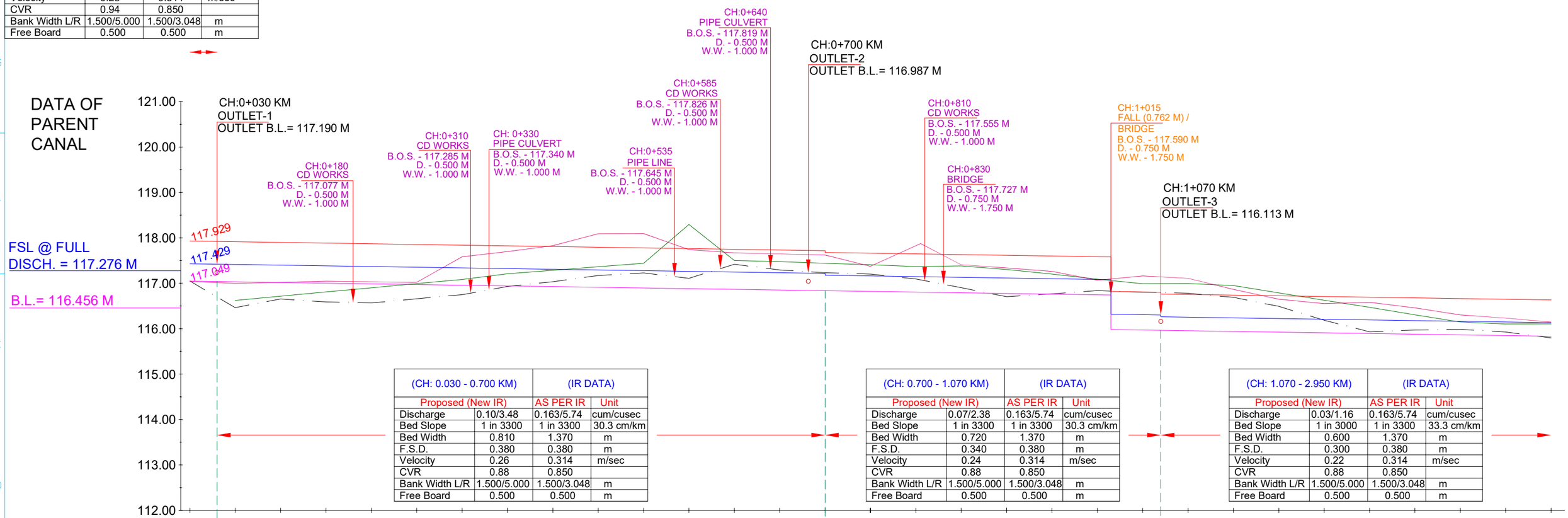
IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ LSEC- 04 of 04 |

# *SOTIDIH MINOR*

# L- SECTION OF SOTHIDIH MINOR
## (OFFTAKE FROM RD - 11+995 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 0+000 TO 1+500

| (CH: 0.000 - 0.030 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.13/4.55 | 0.163/5.74 | cum/cusec |
| Bed Slope | 1 in 3300 | 1 in 3300 | 30.3 cm/km |
| Bed Width | 1.100 | 1.370 | m |
| F.S.D. | 0.380 | 0.380 | m |
| Velocity | 0.28 | 0.314 | m/sec |
| CVR | 0.94 | 0.850 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |




| (CH: 0.030 - 0.700 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.10/3.48 | 0.163/5.74 | cum/cusec |
| Bed Slope | 1 in 3300 | 1 in 3300 | 30.3 cm/km |
| Bed Width | 0.810 | 1.370 | m |
| F.S.D. | 0.380 | 0.380 | m |
| Velocity | 0.26 | 0.314 | m/sec |
| CVR | 0.88 | 0.850 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 0.700 - 1.070 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.07/2.38 | 0.163/5.74 | cum/cusec |
| Bed Slope | 1 in 3300 | 1 in 3300 | 30.3 cm/km |
| Bed Width | 0.720 | 1.370 | m |
| F.S.D. | 0.340 | 0.380 | m |
| Velocity | 0.24 | 0.314 | m/sec |
| CVR | 0.88 | 0.850 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| (CH: 1.070 - 2.950 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.03/1.16 | 0.163/5.74 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3300 | 33.3 cm/km |
| Bed Width | 0.600 | 1.370 | m |
| F.S.D. | 0.300 | 0.380 | m |
| Velocity | 0.22 | 0.314 | m/sec |
| CVR | 0.88 | 0.850 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 0+000 | 0+030 | 0+050 | 0+100 | 0+150 | 0+200 | 0+250 | 0+300 | 0+350 | 0+400 | 0+450 | 0+500 | 0+550 | 0+600 | 0+650 | 0+700 | 0+750 | 0+800 | 0+850 | 0+900 | 0+950 | 1+000 | 1+050 | 1+070 | 1+100 | 1+150 | 1+200 | 1+250 | 1+300 | 1+350 | 1+400 | 1+450 | 1+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 117.929 | ~~117.920~~ | 117.914 | 117.899 | 117.884 | 117.868 | 117.853 | 117.838 | 117.823 | 117.808 | 117.793 | 117.777 | 117.762 | 117.747 | 117.732 | ~~117.717~~ ~~117.677~~ | 117.662 | 117.647 | 117.631 | 117.616 | 117.601 | 117.586 | 116.809 | ~~116.803~~ ~~116.763~~ | 116.754 | 116.739 | 116.723 | 116.708 | 116.693 | 116.678 | 116.663 | 116.648 | 116.632 |
| | F.S.L. | 117.429 | ~~117.420~~ | 117.414 | 117.399 | 117.384 | 117.368 | 117.353 | 117.338 | 117.323 | 117.308 | 117.293 | 117.277 | 117.262 | 117.247 | 117.232 | ~~117.217~~ ~~117.177~~ | 117.162 | 117.147 | 117.131 | 117.116 | 117.101 | 117.086 117.081 116.319 | 116.309 | ~~116.303~~ ~~116.263~~ | 116.254 | 116.239 | 116.223 | 116.208 | 116.193 | 116.178 | 116.163 | 116.148 | 116.132 |
| | Proposed Bed Level | 117.049 | ~~117.040~~ | 117.034 | 117.019 | 117.004 | 116.988 | 116.973 | 116.958 | 116.943 | 116.928 | 116.913 | 116.897 | 116.882 | 116.867 | 116.852 | ~~116.837~~ | 116.822 | 116.807 | 116.791 | 116.776 | 116.761 | 116.746 116.741 115.979 | 115.969 | ~~115.963~~ | 115.954 | 115.939 | 115.923 | 115.908 | 115.893 | 115.878 | 115.863 | 115.848 | 115.832 |
| EXISTING DATA | Bed Level | 117.050 | | 116.464 | 116.653 | 116.591 | 116.568 | 116.658 | 116.749 | 116.930 | 117.034 | 117.171 | 117.228 | 117.110 | 117.418 | 117.294 | 117.231 | 117.204 | 117.093 | 116.902 | 116.704 | 116.768 | 116.840 | 116.804 | | 116.781 | 116.689 | 116.491 | 116.186 | 115.931 | 115.969 | 115.985 | 115.927 | 115.798 |
| | TOP OF BANK LEVEL | 117.039 | | 116.998 | 117.021 | 117.045 | 117.032 | 117.020 | 117.582 | 117.697 | 117.828 | 118.091 | 118.095 | 117.742 | 117.668 | 117.646 | 117.621 | 117.374 | 117.875 | 117.408 | 117.337 | 117.261 | 117.068 | 117.161 | | 117.109 | 116.867 | 116.648 | 116.552 | 116.582 | 116.457 | 116.304 | 116.234 | 116.145 |
| | NSL | | | 116.621 | 116.716 | 116.809 | 116.901 | 116.992 | 117.083 | 117.210 | 117.286 | 117.363 | 117.439 | 118.294 | 117.502 | 117.477 | 117.442 | 117.406 | 117.369 | 117.381 | 117.303 | 117.202 | 117.092 | 116.991 | | 116.992 | 116.951 | 116.788 | 116.625 | 116.471 | 116.306 | 116.148 | 116.104 | 116.108 |
| | Chainage IN KM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

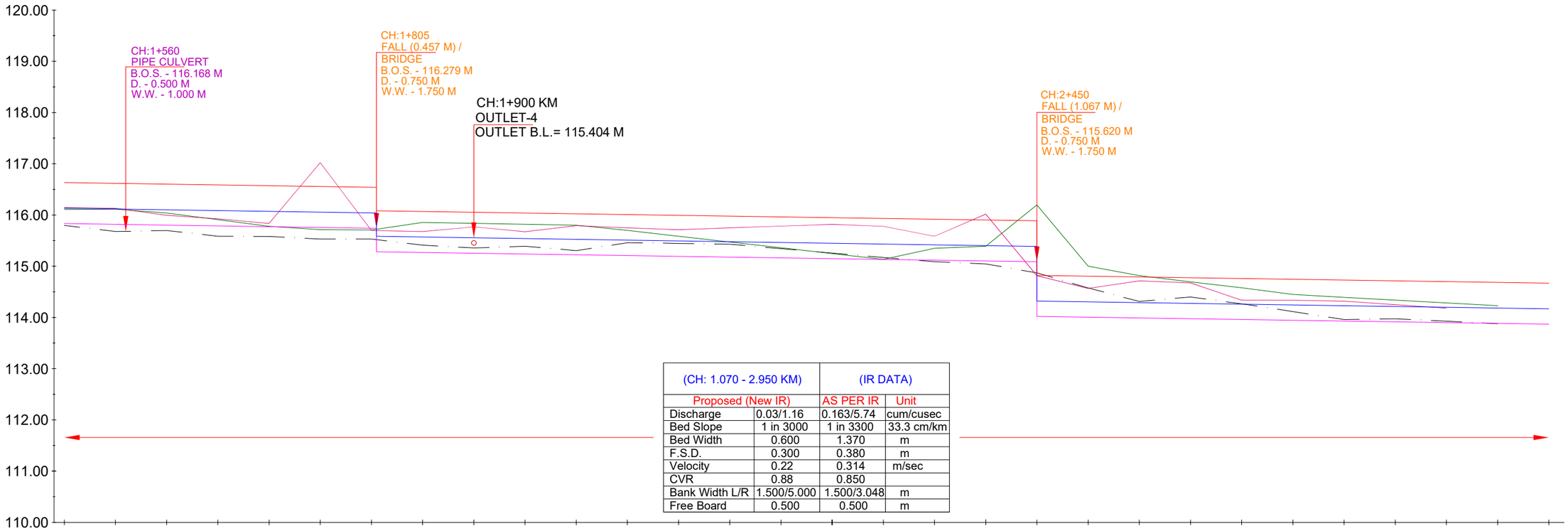
LEGEND

| | | | |
|---|---|---|---|
| NSL | | EXISTING BED LEVEL | |
| EXISTING TOP OF BANK | | PROPOSED BED LEVEL | |
| EXISTING STRUCTURE | | PROPOSED FSL | |
| MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL | |
| NEW STRUCTURE | | | |

IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 11+995 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ LSEC- 01 of 02 |

# L- SECTION OF SOTHIDIH MINOR
## (OFFTAKE FROM RD - 11+995 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)
## FROM CH 1+500 TO 2+950




| (CH: 1.070 - 2.950 KM) | | (IR DATA) | |
|---|---|---|---|
| Proposed (New IR) | | AS PER IR | Unit |
| Discharge | 0.03/1.16 | 0.163/5.74 | cum/cusec |
| Bed Slope | 1 in 3000 | 1 in 3300 | 33.3 cm/km |
| Bed Width | 0.600 | 1.370 | m |
| F.S.D. | 0.300 | 0.380 | m |
| Velocity | 0.22 | 0.314 | m/sec |
| CVR | 0.88 | 0.850 | |
| Bank Width L/R | 1.500/5.000 | 1.500/3.048 | m |
| Free Board | 0.500 | 0.500 | m |

| | | 1+500 | 1+550 | 1+600 | 1+650 | 1+700 | 1+750 | 1+800 | 1+850 | 1+900 | 1+950 | 2+000 | 2+050 | 2+100 | 2+150 | 2+200 | 2+250 | 2+300 | 2+350 | 2+400 | 2+450 | 2+500 | 2+550 | 2+600 | 2+650 | 2+700 | 2+750 | 2+800 | 2+850 | 2+900 | 2+950 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DATA | TOP OF BANK LEVEL | 116.632 | 116.617 | 116.602 | 116.587 | 116.572 | 116.557 | 116.542 | 116.540 | 116.083 | 116.069 | 116.054 | 116.039 | 116.024 | 116.009 | 115.994 | 115.978 | 115.963 | 115.948 | 115.933 | 115.918 | 115.903 | 115.888 / 115.821 | 114.805 | 114.790 | 114.775 | 114.760 | 114.745 | 114.730 | 114.715 | 114.699 | 114.684 | 114.669 |
| | F.S.L. | 116.132 | 116.117 | 116.102 | 116.087 | 116.072 | 116.057 | 116.042 | 116.040 | 115.583 | 115.569 | 115.554 | 115.539 | 115.524 | 115.509 | 115.494 | 115.478 | 115.463 | 115.448 | 115.433 | 115.418 | 115.403 | 115.388 / 114.321 | 114.305 | 114.290 | 114.275 | 114.260 | 114.245 | 114.230 | 114.215 | 114.199 | 114.184 | 114.169 |
| | Proposed Bed Level | 115.832 | 115.817 | 115.802 | 115.787 | 115.772 | 115.757 | 115.742 | 115.740 | 115.283 | 115.269 | 115.254 | 115.239 | 115.224 | 115.209 | 115.194 | 115.178 | 115.163 | 115.148 | 115.133 | 115.118 | 115.103 | 115.088 / 114.021 | 114.005 | 113.990 | 113.975 | 113.960 | 113.945 | 113.930 | 113.915 | 113.899 | 113.884 | 113.869 |
| EXISTING DATA | Bed Level | 115.798 | 115.677 | 115.697 | 115.585 | 115.579 | 115.531 | 115.529 | 115.410 | 115.356 | 115.390 | 115.305 | 115.460 | 115.445 | 115.429 | 115.344 | 115.256 | 115.169 | 115.088 | 115.045 | 114.870 | 114.577 | 114.312 | 114.399 | 114.267 | 114.114 | 113.960 | 113.975 | 113.927 | 113.878 | | | |
| | TOP OF BANK LEVEL | 116.145 | 116.132 | 115.995 | 115.924 | 115.834 | 117.023 | 115.699 | 115.675 | 115.769 | 115.674 | 115.791 | 115.749 | 115.714 | 115.748 | 115.783 | 115.817 | 115.779 | 115.585 | 116.017 | 114.815 | 114.566 | 114.715 | 114.675 | 114.357 | 114.337 | 114.317 | 114.248 | 114.180 | | | | |
| | NSL | 116.108 | 116.113 | 116.038 | 115.908 | 115.778 | 115.713 | 115.708 | 115.854 | 115.835 | 115.819 | 115.800 | 115.699 | 115.586 | 115.473 | 115.360 | 115.247 | 115.135 | 115.351 | 115.391 | 116.197 | 115.002 | 114.817 | 114.695 | 114.580 | 114.448 | 114.392 | 114.338 | 114.283 | 114.228 | | | |
| | Chainage IN KM | 1+500 | 1+550 | 1+600 | 1+650 | 1+700 | 1+750 | 1+800 | 1+850 | 1+900 | 1+950 | 2+000 | 2+050 | 2+100 | 2+150 | 2+200 | 2+250 | 2+300 | 2+350 | 2+400 | 2+450 | 2+500 | 2+550 | 2+600 | 2+650 | 2+700 | 2+750 | 2+800 | 2+850 | 2+900 | 2+950 |

LEGEND

| | | | |
|---|---|---|---|
| | NSL | | EXISTING BED LEVEL |
| | EXISTING TOP OF BANK | | PROPOSED BED LEVEL |
| | EXISTING STRUCTURE | | PROPOSED FSL |
| | MODIFIED STRUCTURE | | PROPOSED TOP OF BANK LEVEL |
| | NEW STRUCTURE | | |

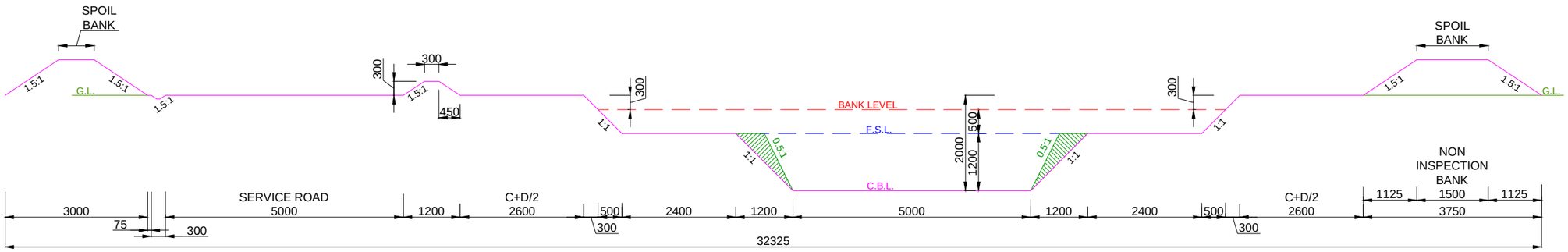
IMPLEMENTING AGENCY :-
WAPCOS LTD.

| | |
|---|---|
| PROJECT TITLE :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| DRAWING TITLE :- | L- SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 11+995 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| DRAWING NO. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ LSEC- 02 of 02 |

# *TYPICAL X-SECTION*

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 0.955 KM

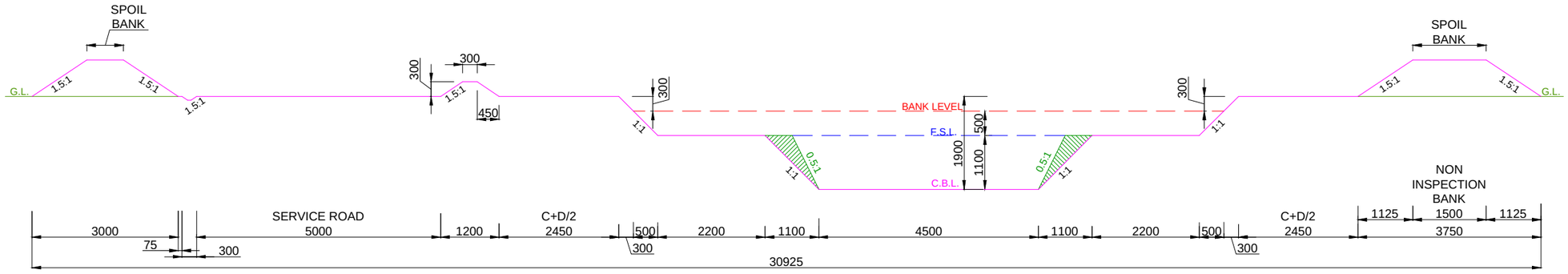
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 1 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.955 KM TO CH: 3.985 KM

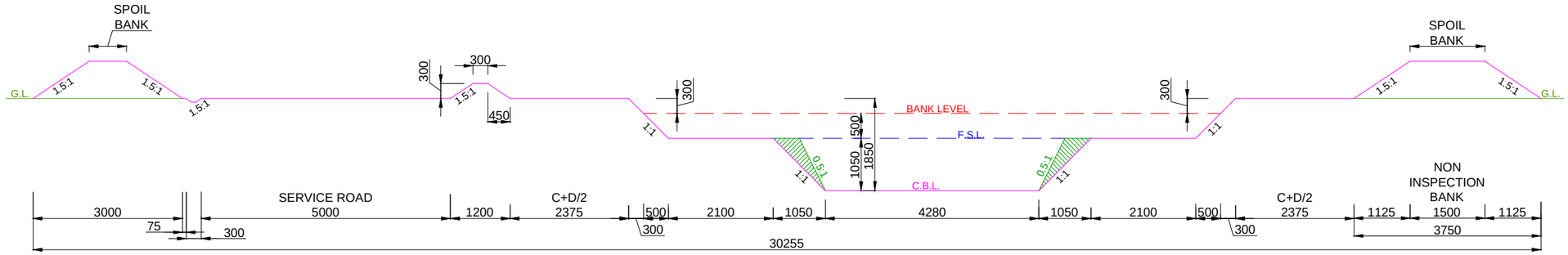
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 2 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 3.985 KM TO CH: 5.790 KM

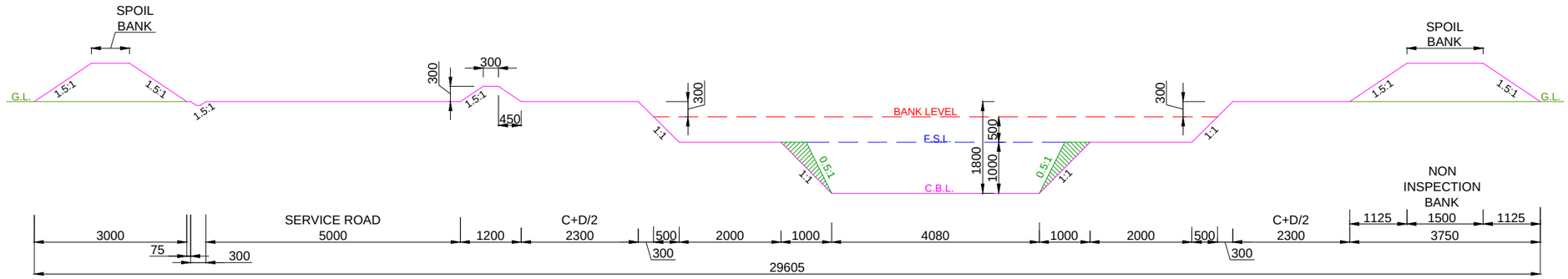
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 3 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 5.790 KM TO CH: 7.260 KM

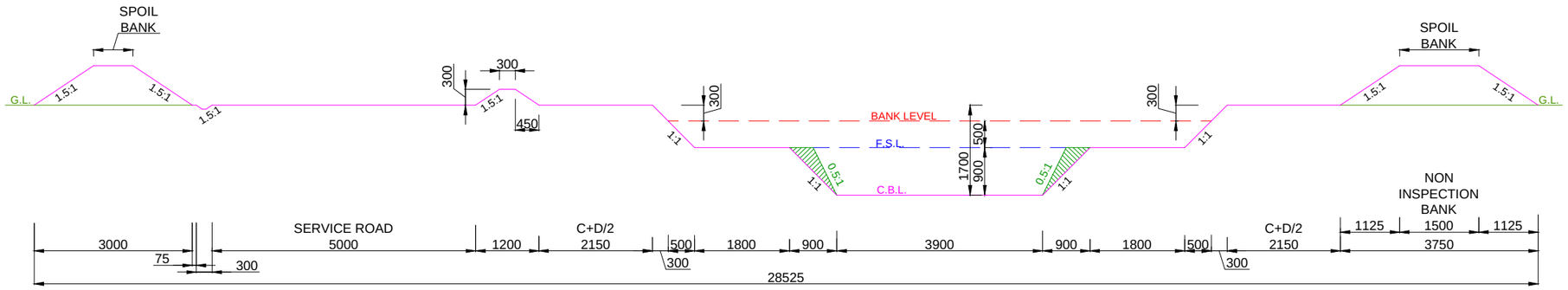
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| CUT AREA | | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| FILL AREA | | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 4 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 7.260 KM TO CH: 9.550 KM

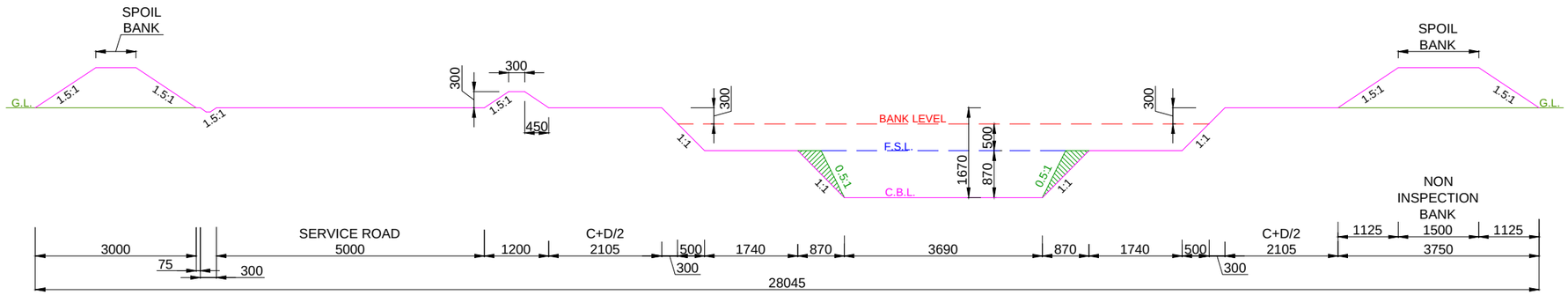
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 5 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 9.550 KM TO CH: 11.100 KM

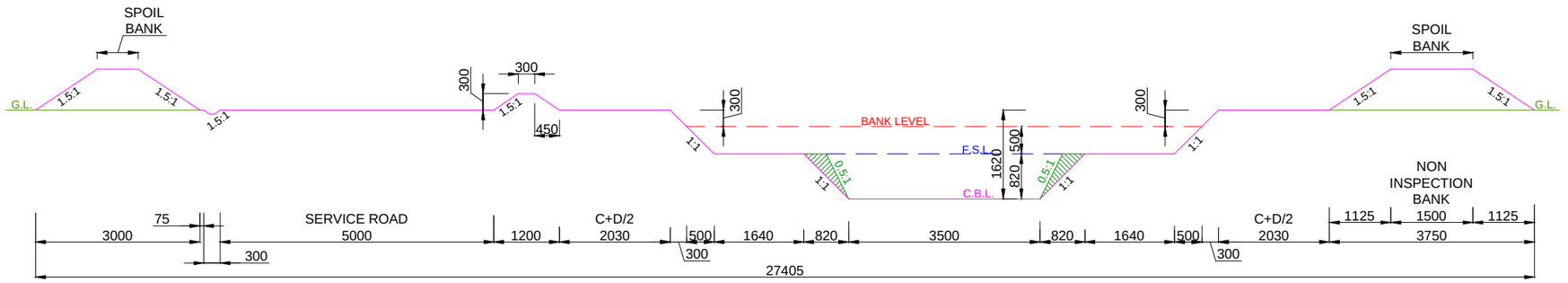
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- 45 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 6 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 11.100 KM TO CH: 12.000 KM

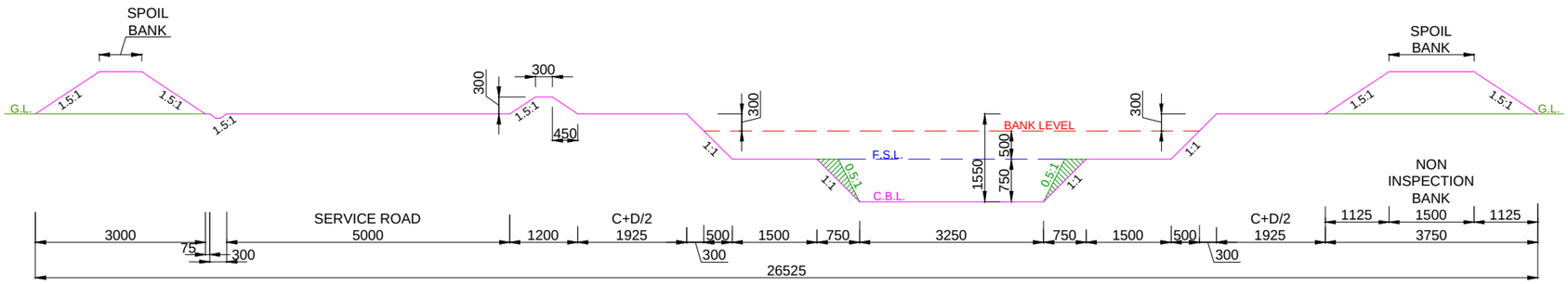
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 7 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 12.000 KM TO CH: 14.020 KM

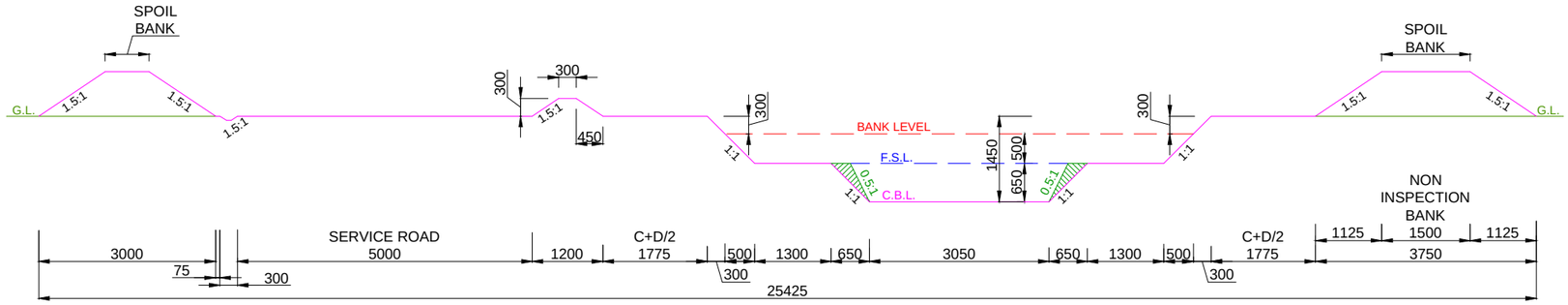
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- 47 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 8 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 14.020 KM TO CH: 15.940 KM

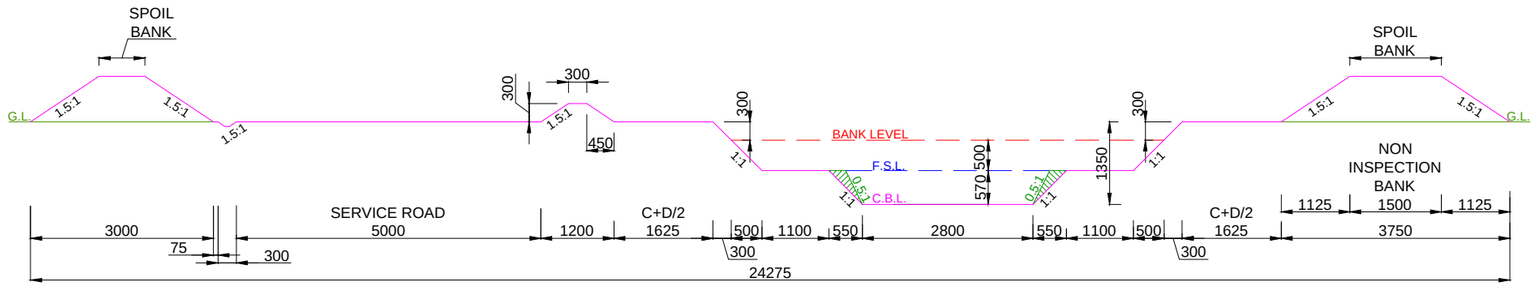
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 15.940 KM TO CH: 17.220 KM

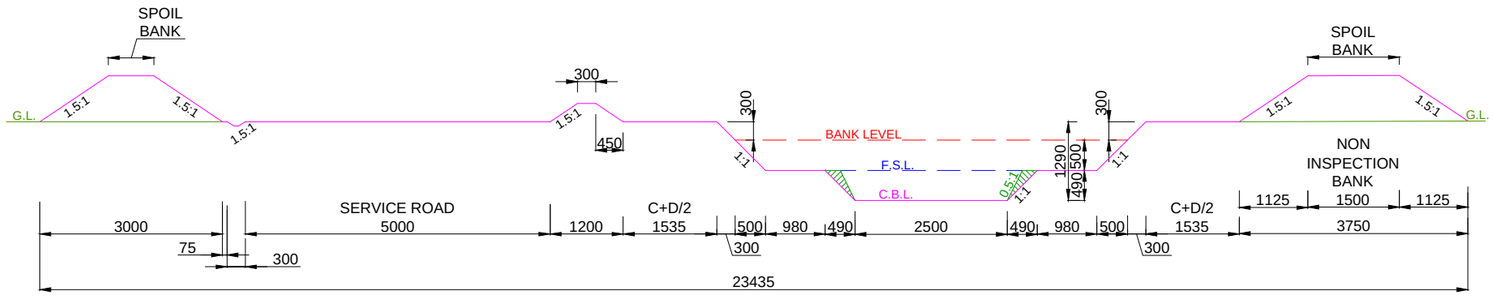
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 10 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 17.220 KM TO CH: 17.875 KM

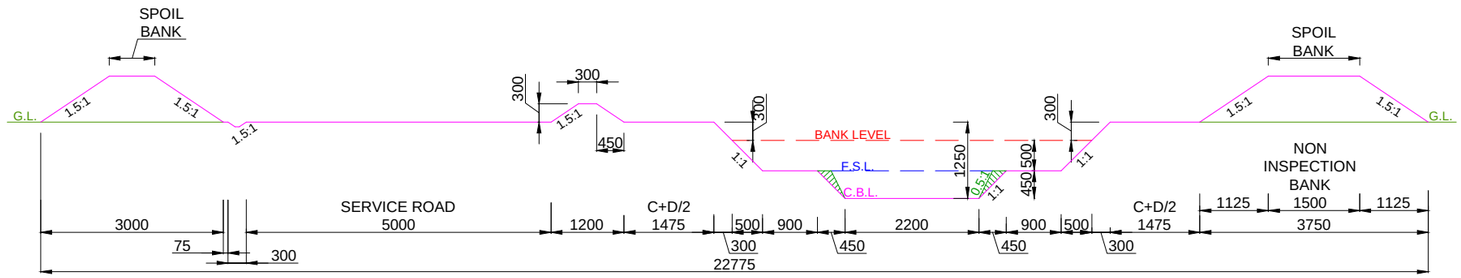
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 11 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 17.875 KM TO CH: 18.140 KM

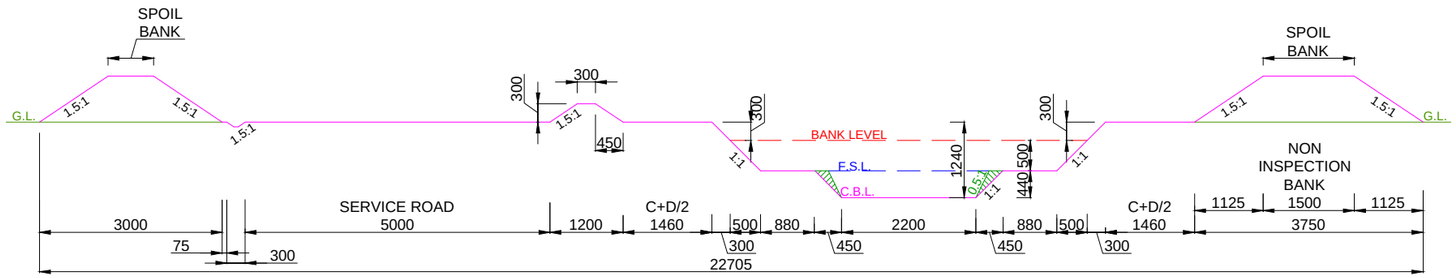
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 12 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 18.140 KM TO CH: 18.400 KM

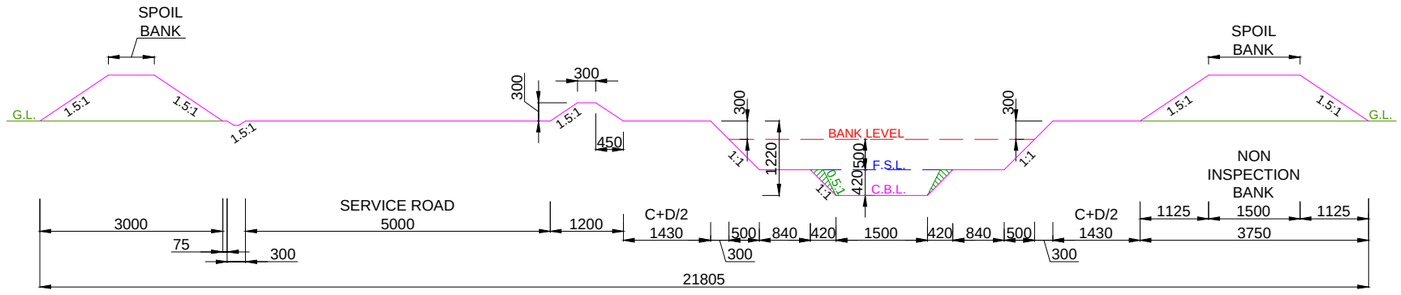
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 13 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 18.400 KM TO CH: 19.200 KM

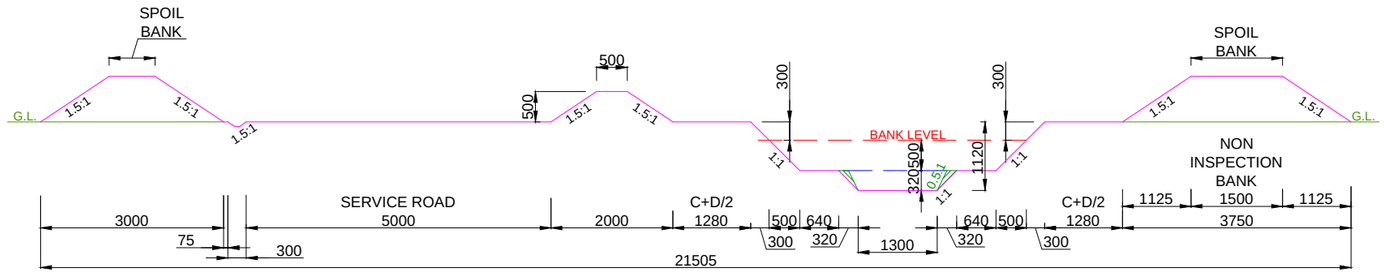
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 14 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 19.200 KM TO CH: 19.400 KM

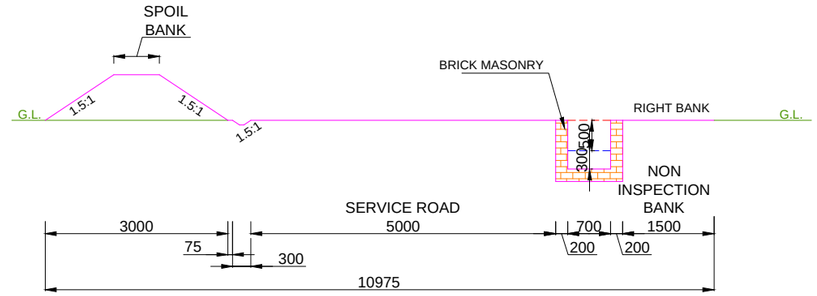
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 15 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 19.400 KM TO CH: 20.150 KM

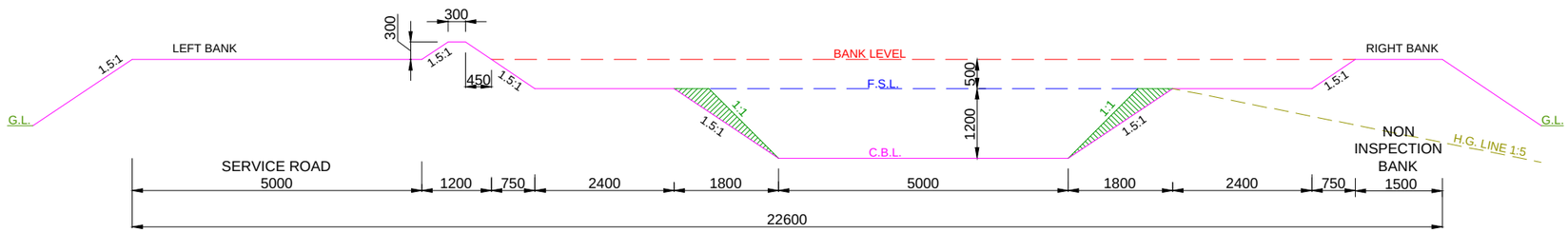
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 16 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 0.955 KM

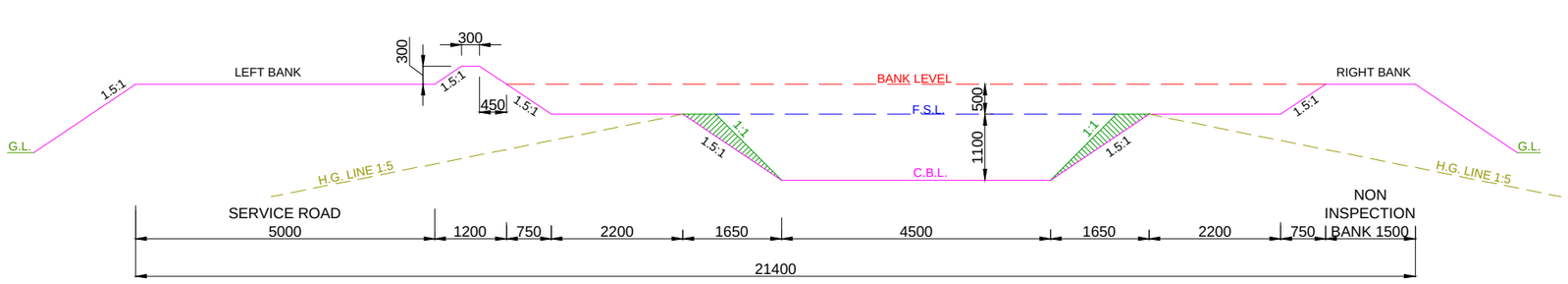
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 1 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.955 KM TO CH: 3.985 KM

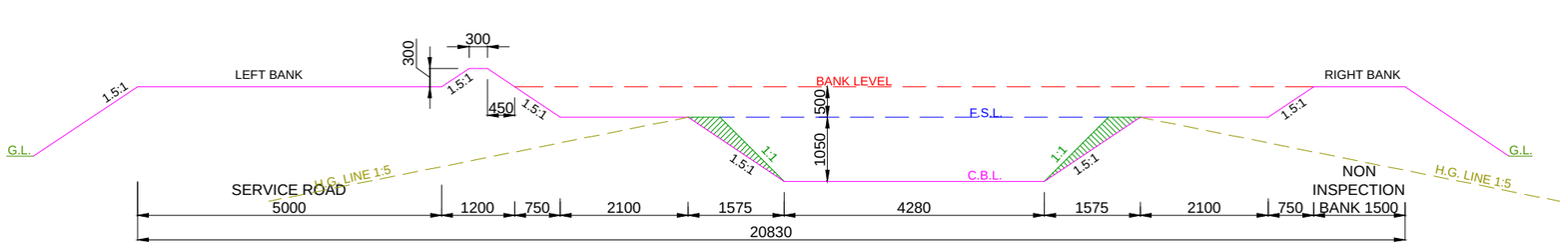
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 2 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 3.985 KM TO CH: 5.790 KM

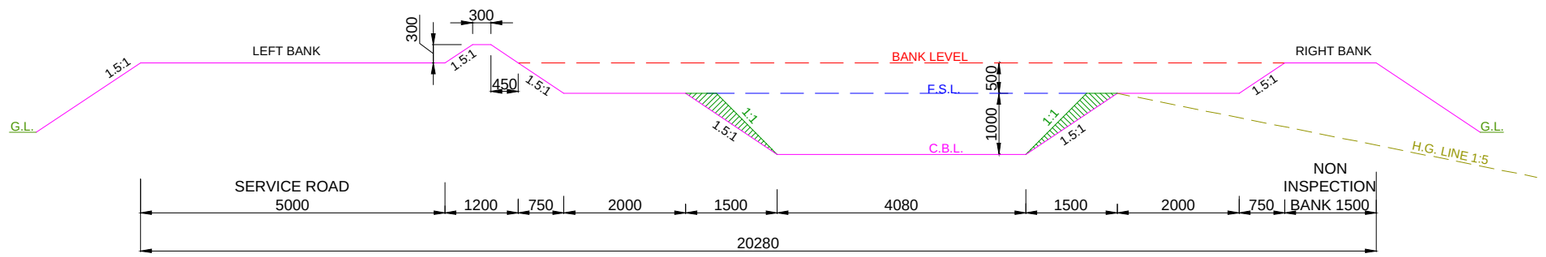
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 5.790 KM TO CH: 7.260 KM

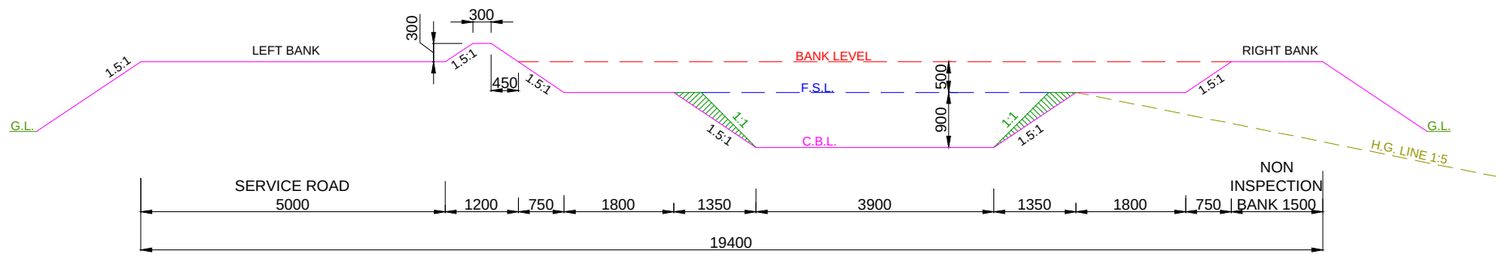
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 4 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 7.260 KM TO CH: 9.550 KM

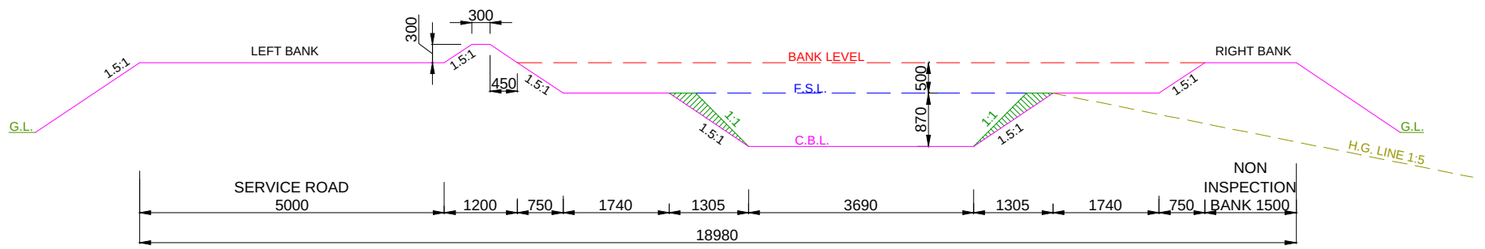
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 5 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 9.550 KM TO CH: 11.100 KM

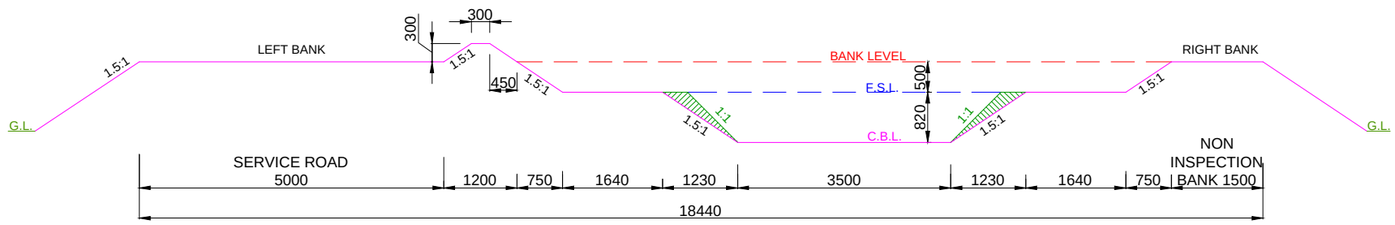
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 6 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 11.100 KM TO CH: 12.000 KM

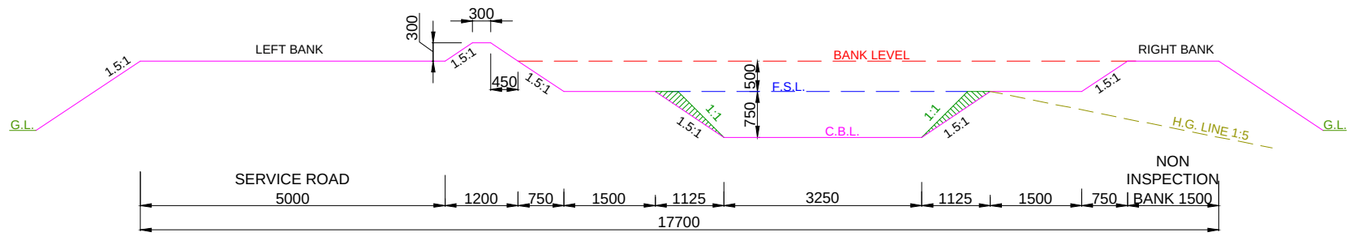
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- 62 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 7 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 12.000 KM TO CH: 14.020 KM

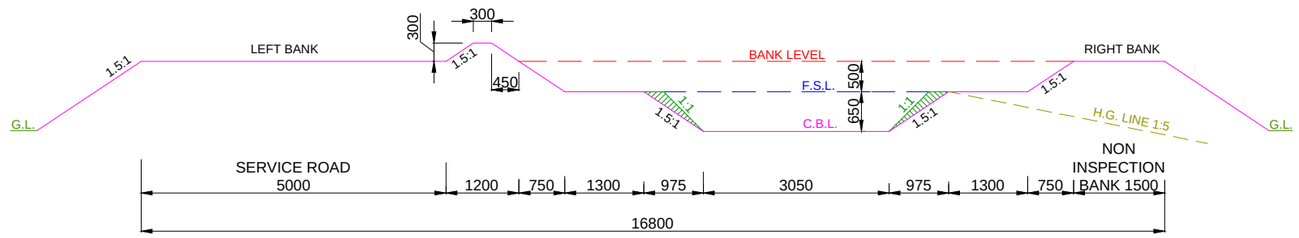
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 8 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 14.020 KM TO CH: 15.940 KM

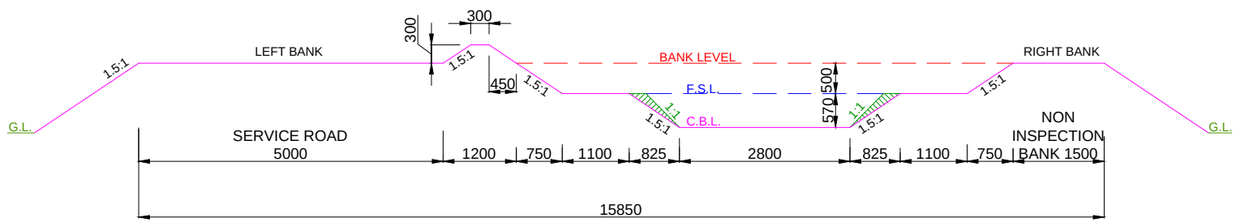
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- 64 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 9 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 15.940 KM TO CH: 17.220 KM

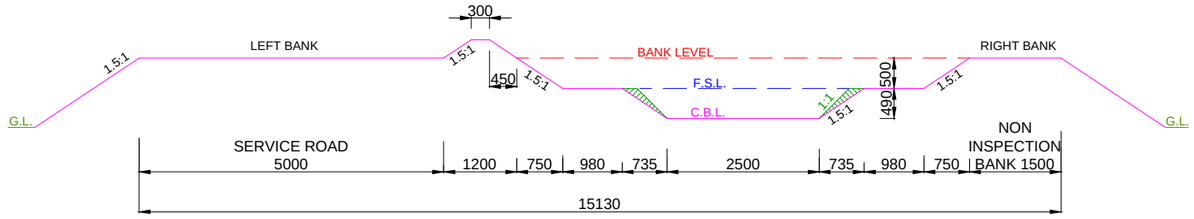
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- 65 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 10 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 17.220 KM TO CH: 17.875 KM

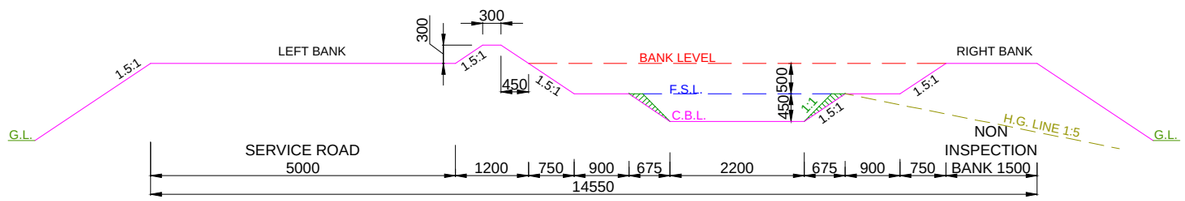
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 11 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 17.875 KM TO CH: 18.140 KM

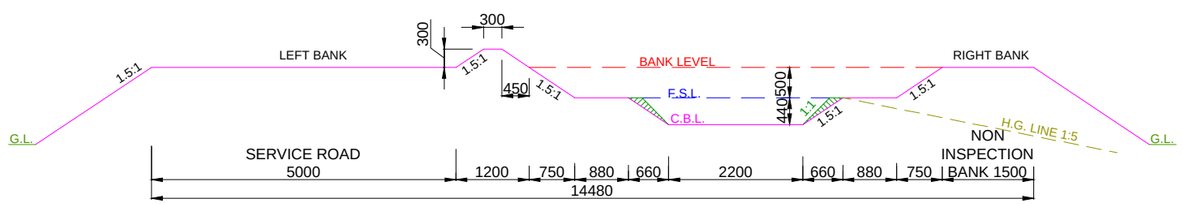
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 12 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 18.140 KM TO CH: 18.400 KM

NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 13 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 18.400 KM TO CH: 19.200 KM

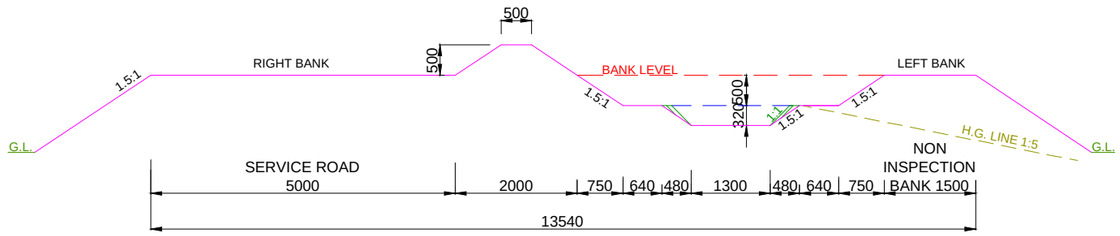
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 14 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 19.200 KM TO CH: 19.400 KM

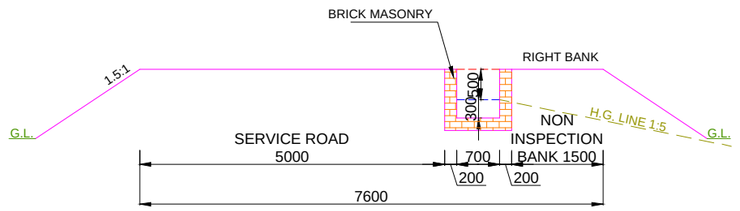
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 15 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 19.400 KM TO CH: 20.150 KM

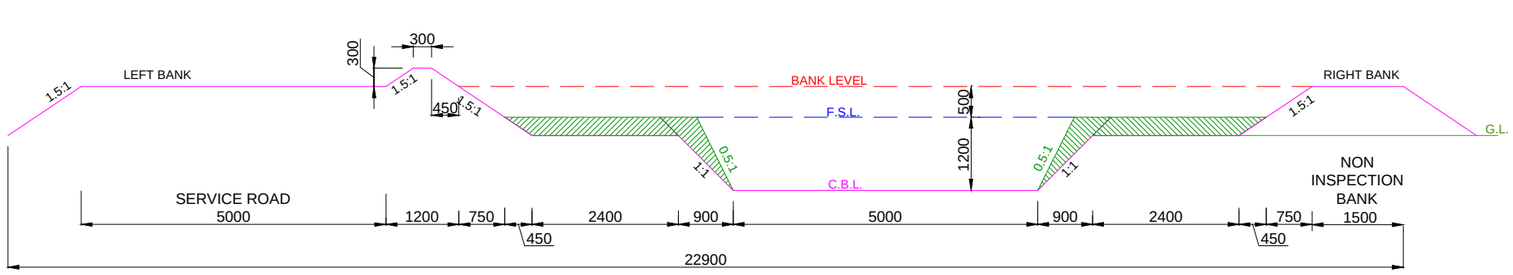
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 16 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 0.955 KM

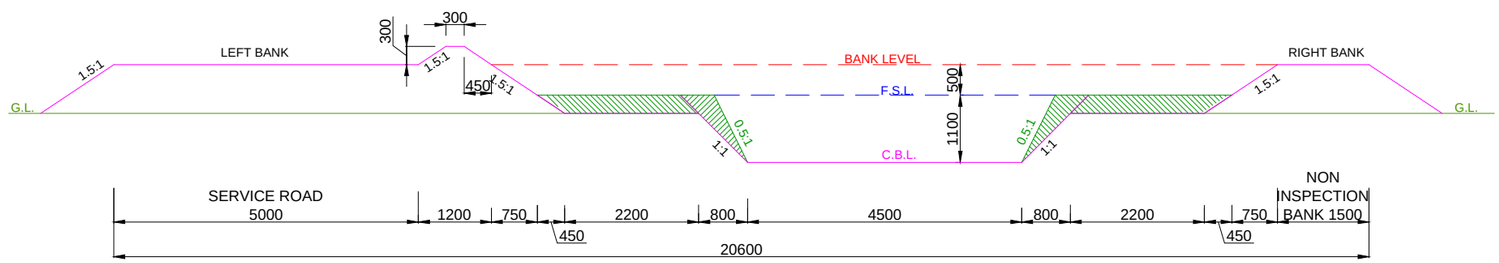
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 1 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.955 KM TO CH: 3.985 KM

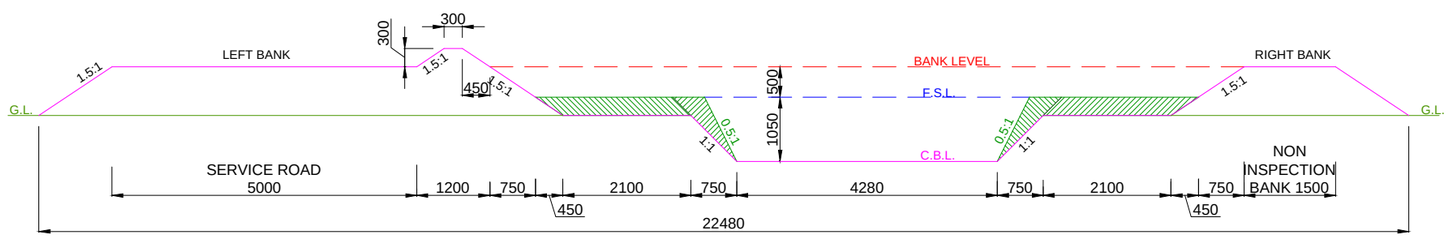
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 2 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 3.985 KM TO CH: 5.790 KM

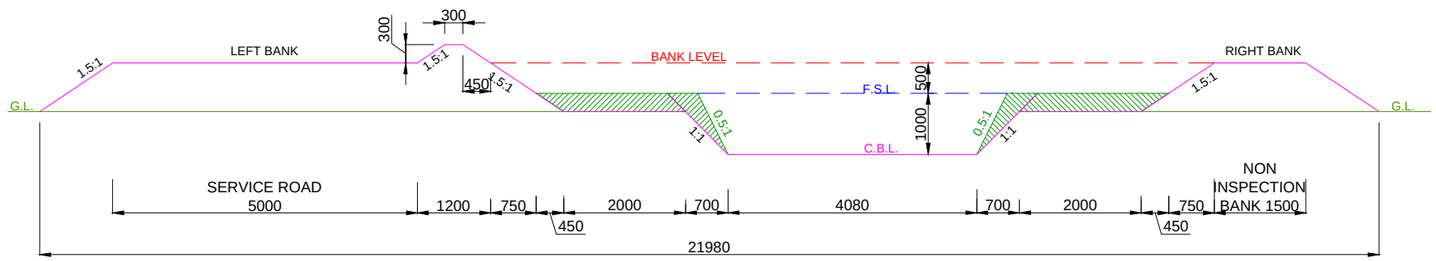
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 3 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 5.790 KM TO CH: 7.260 KM

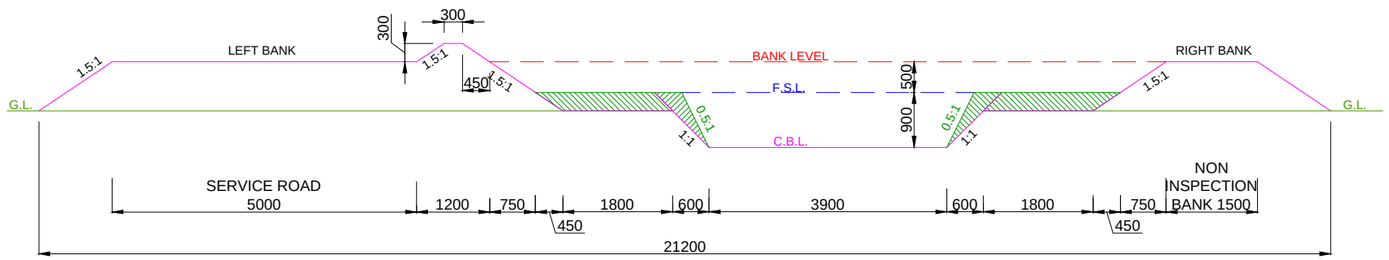
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 4 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 7.260 KM TO CH: 9.550 KM

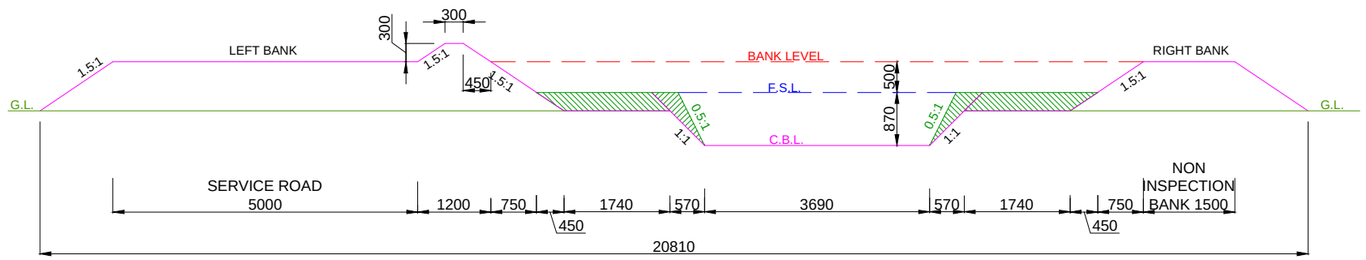
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 5 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 9.550 KM TO CH: 11.100 KM

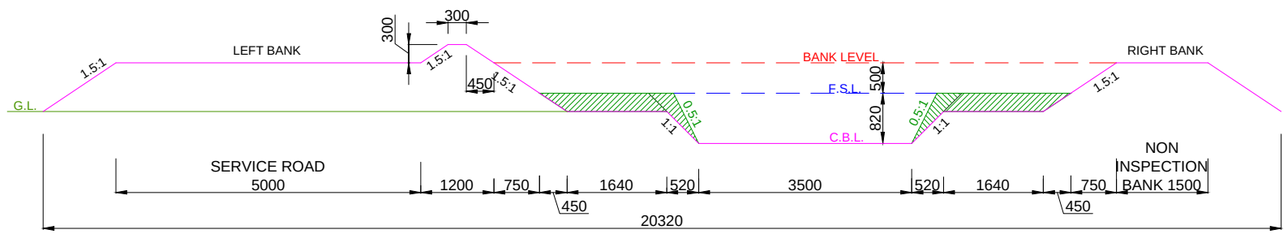
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 6 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 11.100 KM TO CH: 12.000 KM

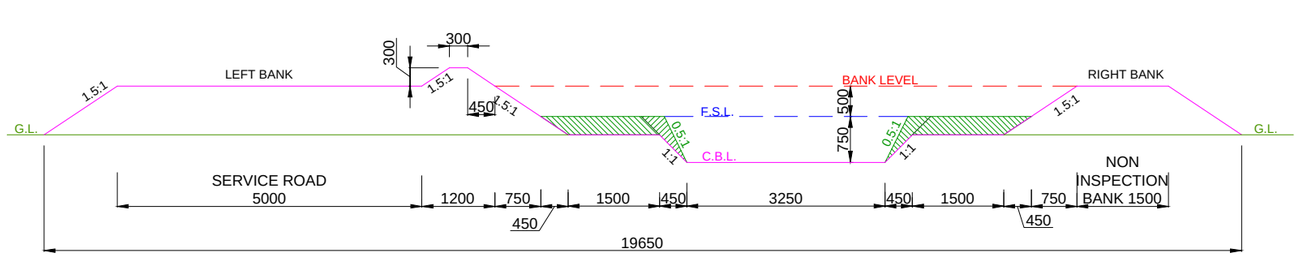
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| CUT AREA | | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| FILL AREA | | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 7 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 12.000 KM TO CH: 14.020 KM

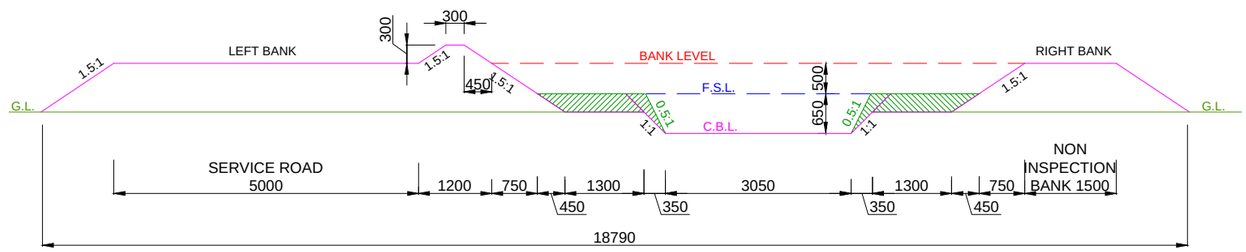
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 8 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 14.020 KM TO CH: 15.940 KM

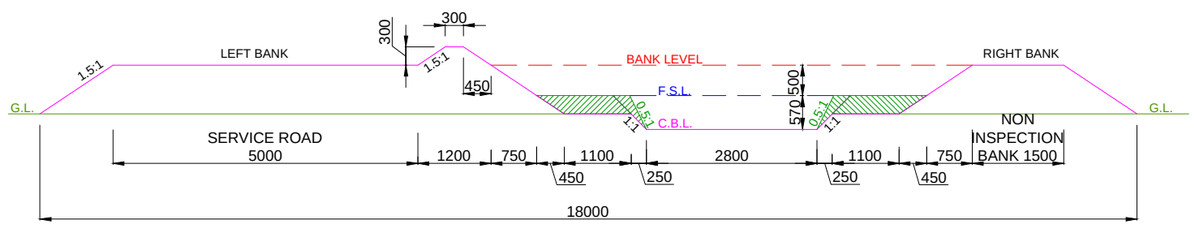
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 9 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 15.940 KM TO CH: 17.220 KM

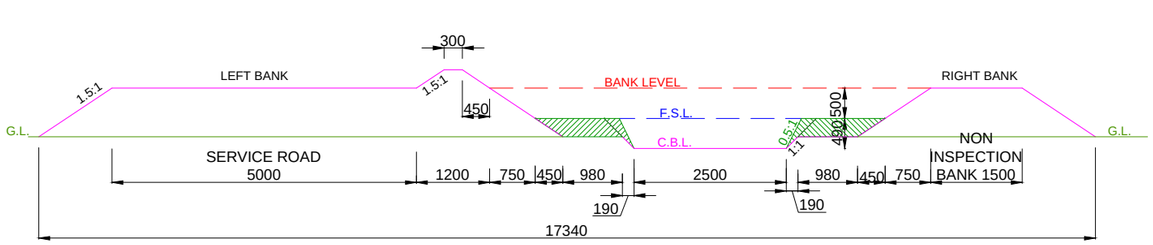
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 10 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 17.220 KM TO CH: 17.875 KM

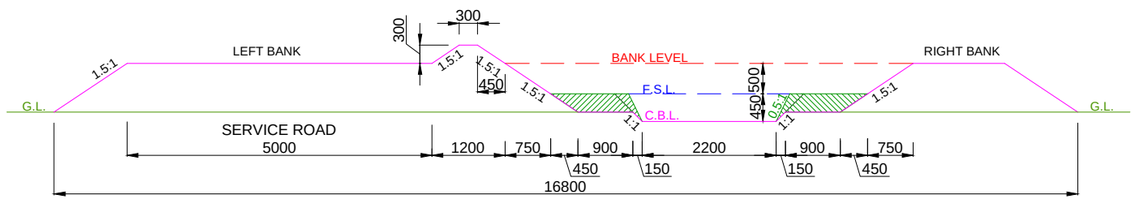
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 11 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 17.875 KM TO CH: 18.140 KM

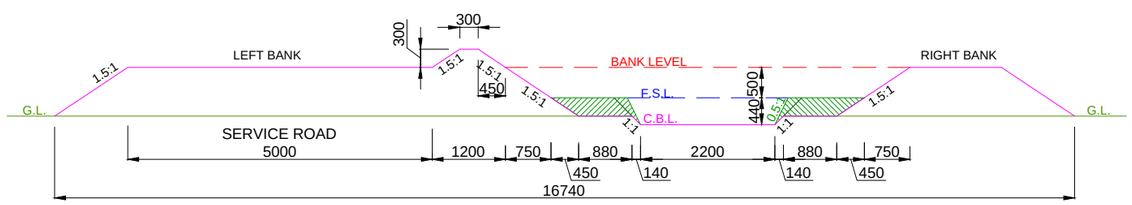
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 12 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 18.140 KM TO CH: 18.400 KM

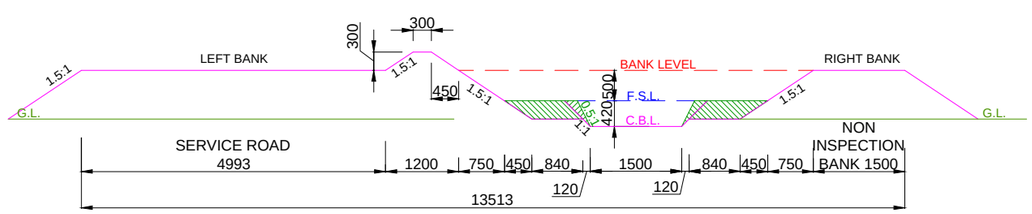
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 13 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 18.400 KM TO CH: 19.200 KM

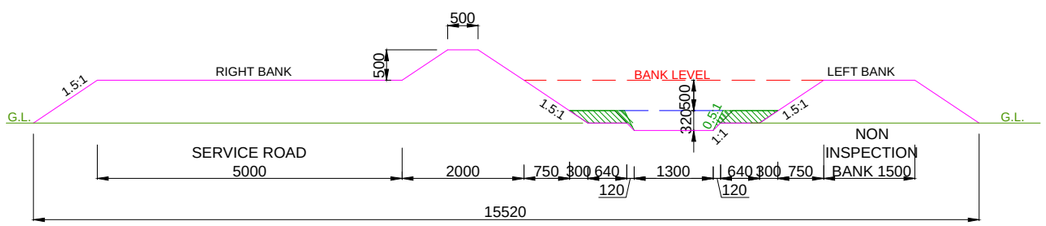
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 14 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 19.200 KM TO CH: 19.400 KM

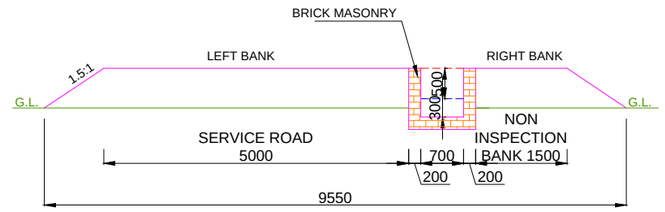
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 15 of 16 |

# TYPICAL X - SECTION OF MAHUARY SUB-DISTRIBUTARY
# (OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 19.400 KM TO CH: 20.150 KM

NOTE:-

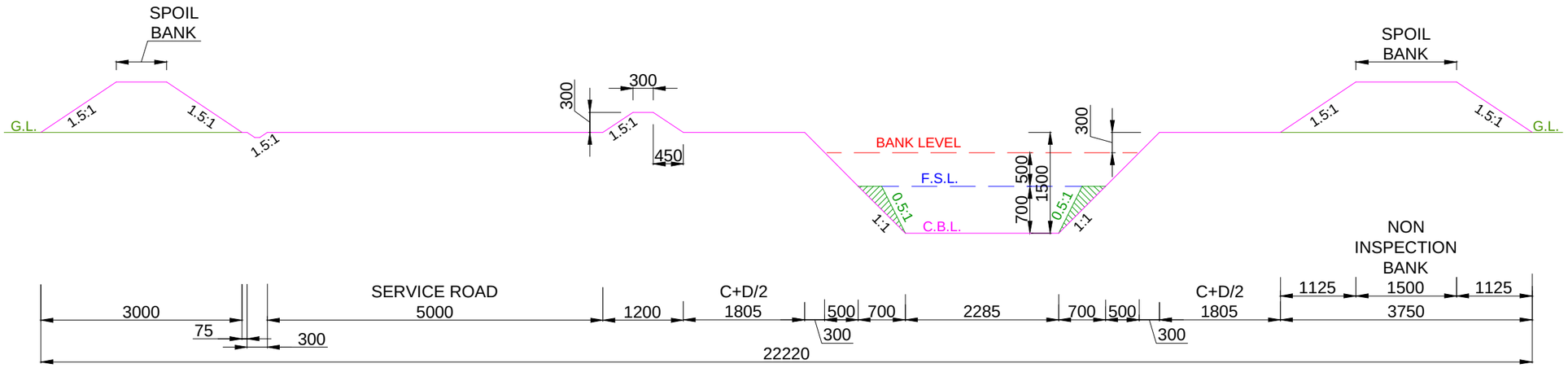
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MAHUARY SUB-DY.(OFFTAKE FROM RD - 47+487 KM. (LT), NORTH KOEL RIGHT MAIN CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC /TYP-(FC) 16 of 16 |

# *BARIAWA MINOR*

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 2.350 KM

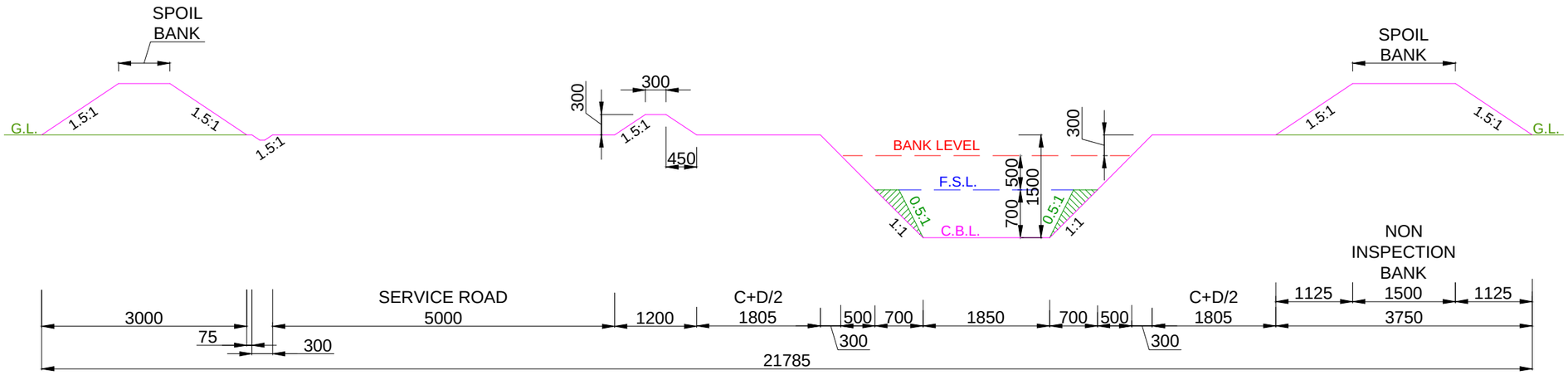
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FC) 1 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 2.350 KM TO CH: 3.600 KM

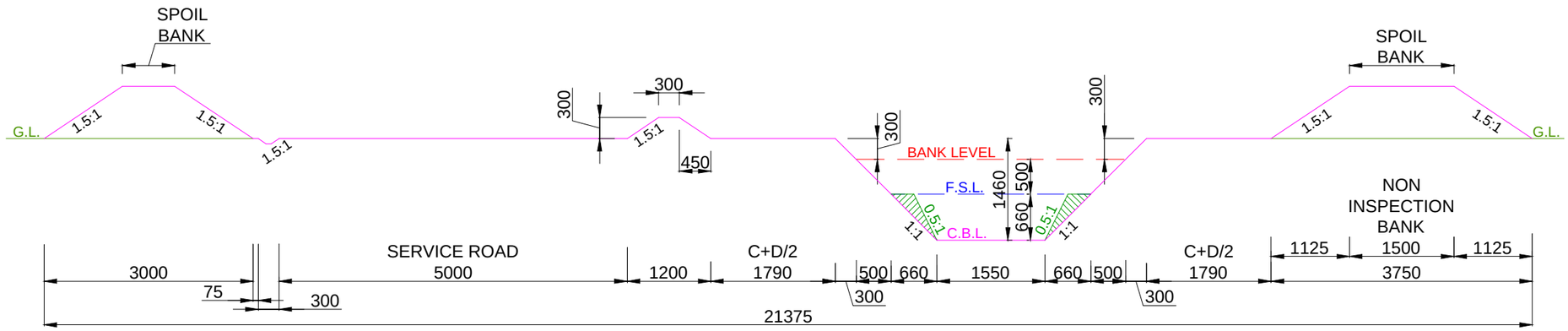
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FC) 2 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 3.600 KM TO CH: 4.400 KM

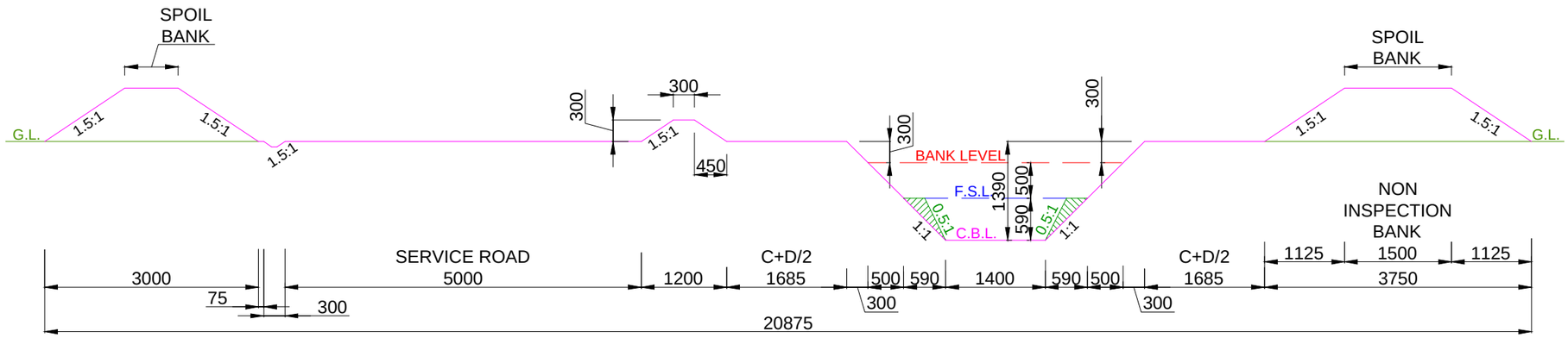
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FC) 3 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 4.400 KM TO CH: 5.070 KM

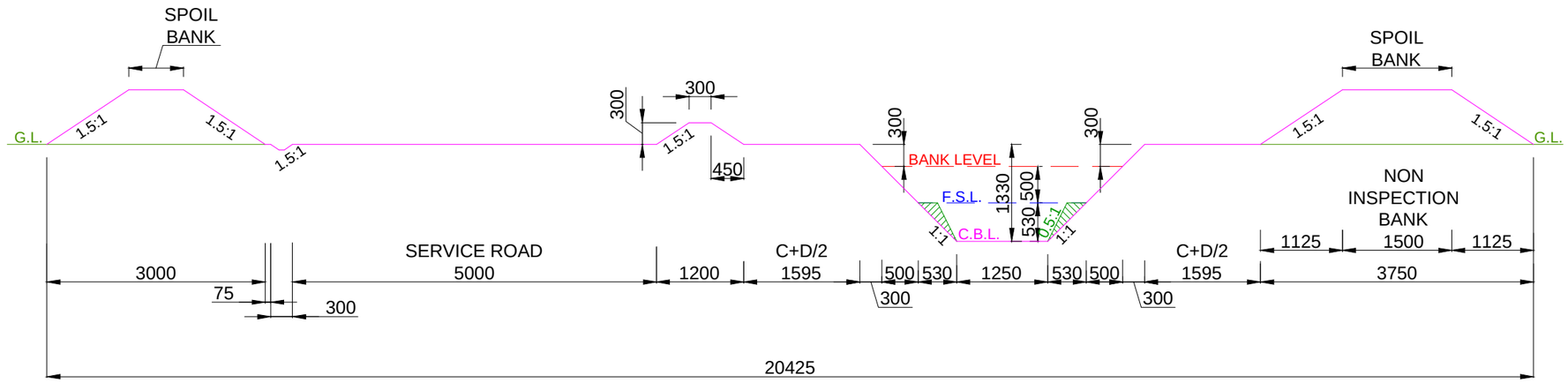
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 92 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FC) 4 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 5.070 KM TO CH: 5.250 KM

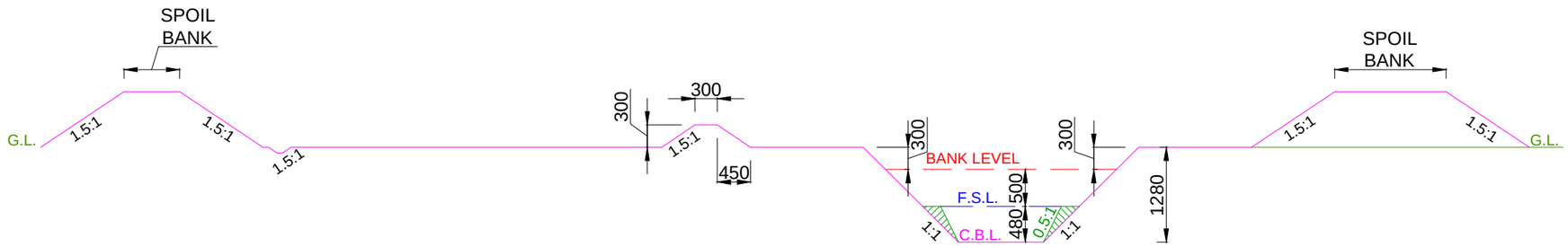
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 93 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FC) 5 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 5.250 KM TO CH: 5.790 KM

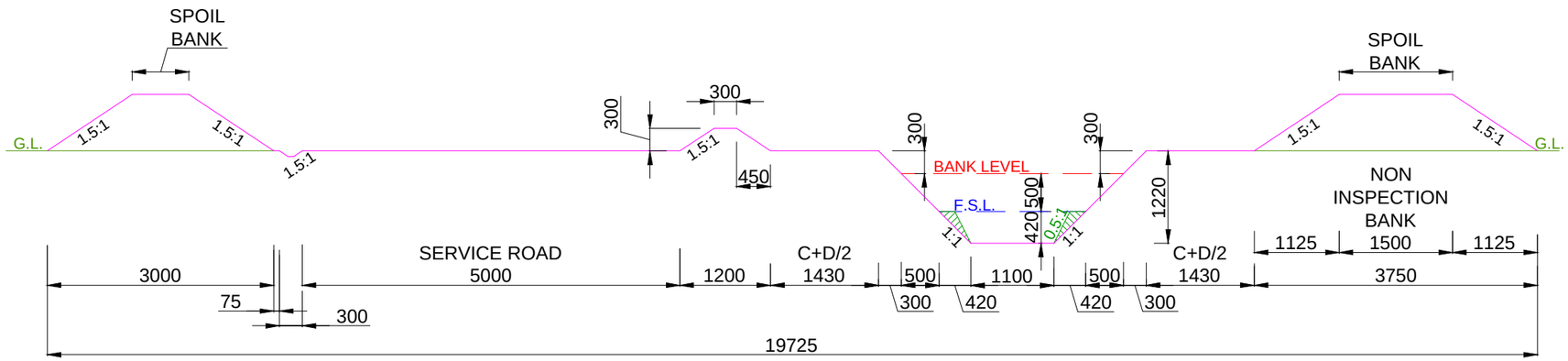
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FC) 6 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 5.790 KM TO CH: 6.100 KM

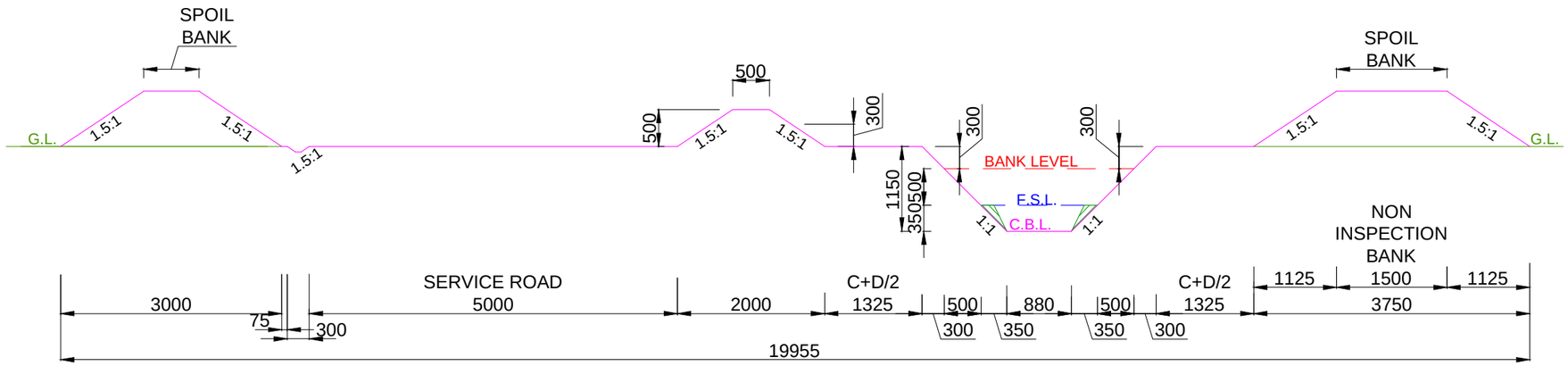
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 95 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FC) 7 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 6.100 KM TO CH: 6.400 KM

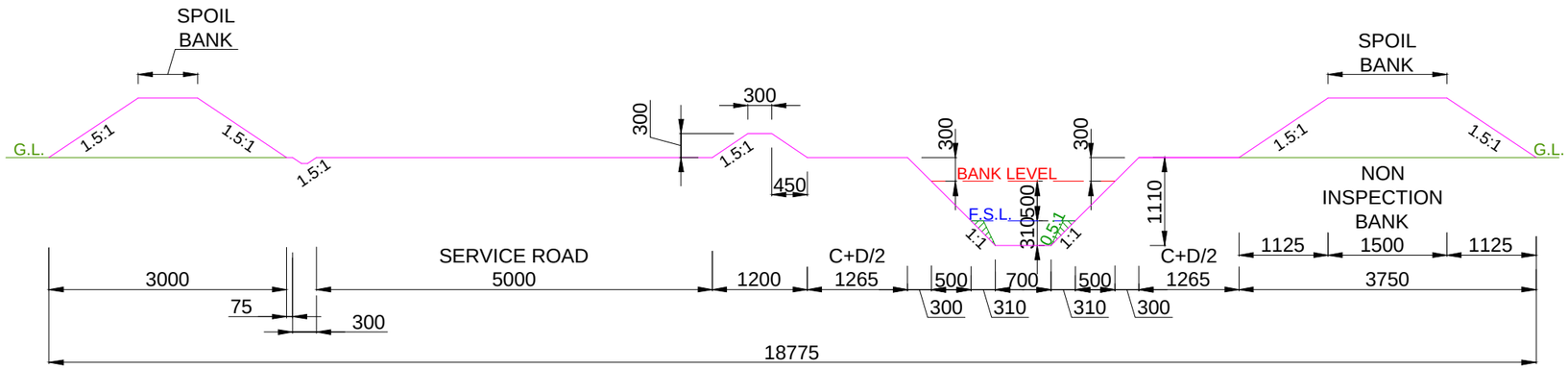
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 96 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FC) 8 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 6.400 KM TO CH: 6.650 KM

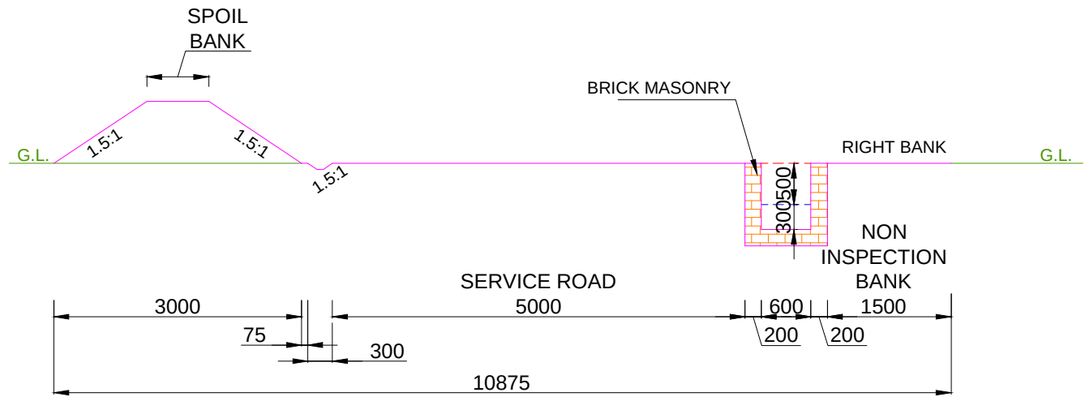
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 97 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FC) 9 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 6.650 KM TO CH: 7.200 KM

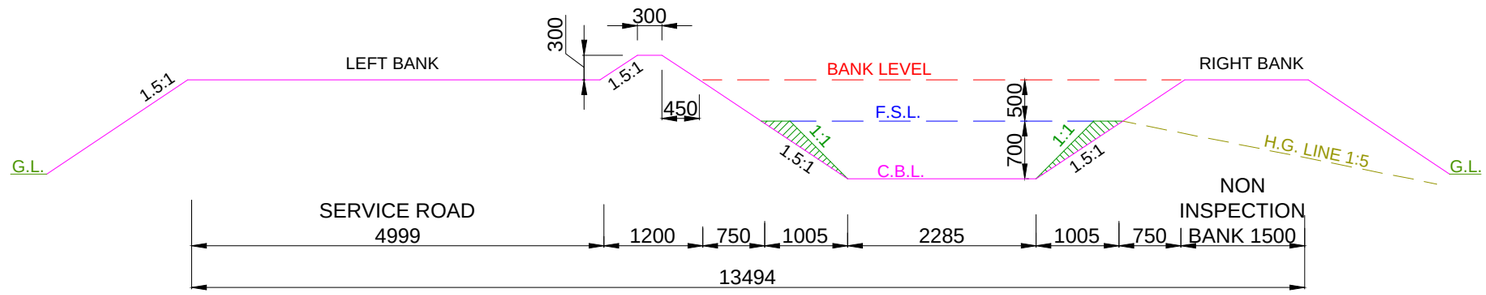
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FC) 10 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 2.350 KM

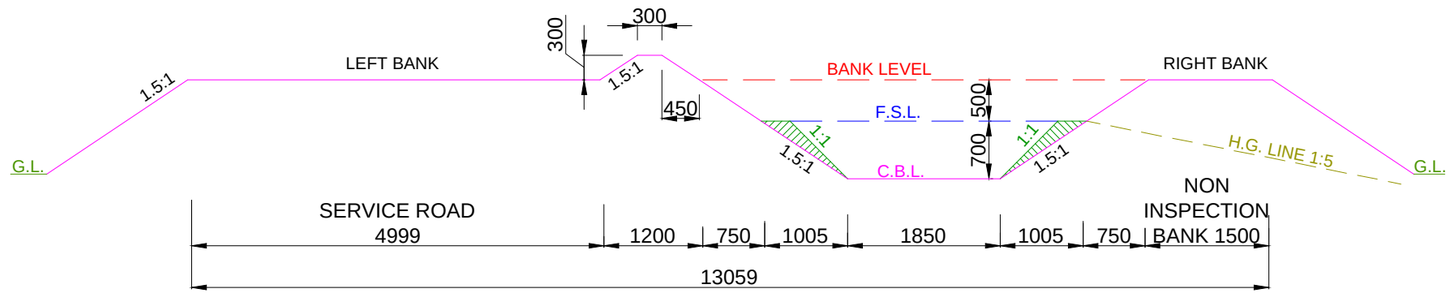
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 99 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FF) 1 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 2.350 KM TO CH: 3.600 KM

NOTE:-

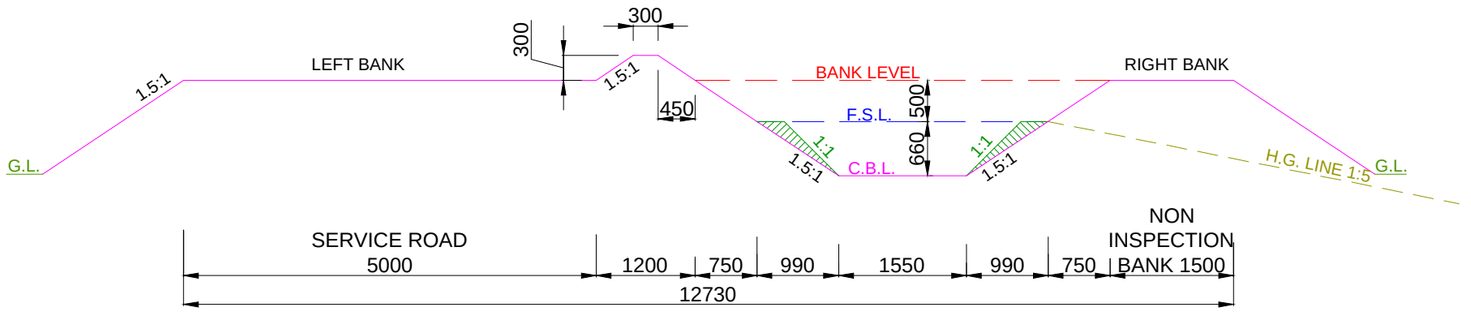
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| CUT AREA | | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| FILL AREA | | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FF) 2 of 10 |

100

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 3.600 KM TO CH: 4.400 KM

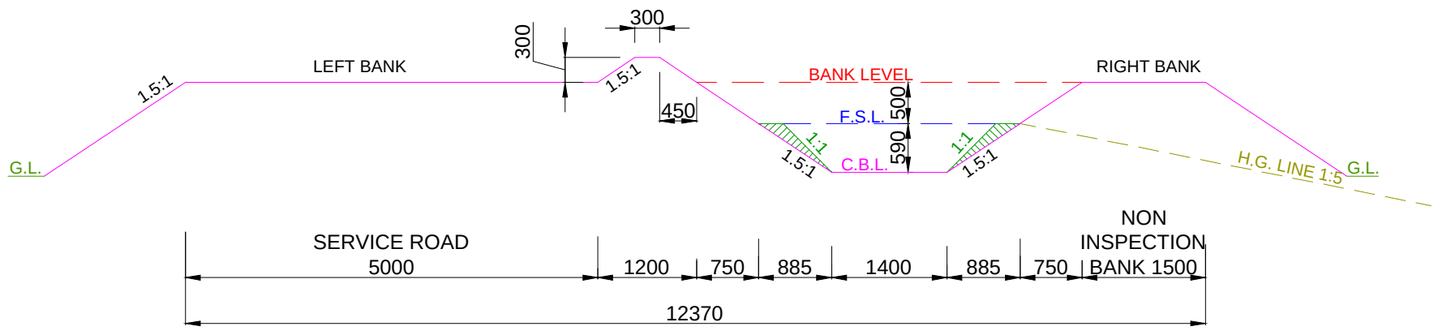
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 101 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FF) 3 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 4.400 KM TO CH: 5.070 KM

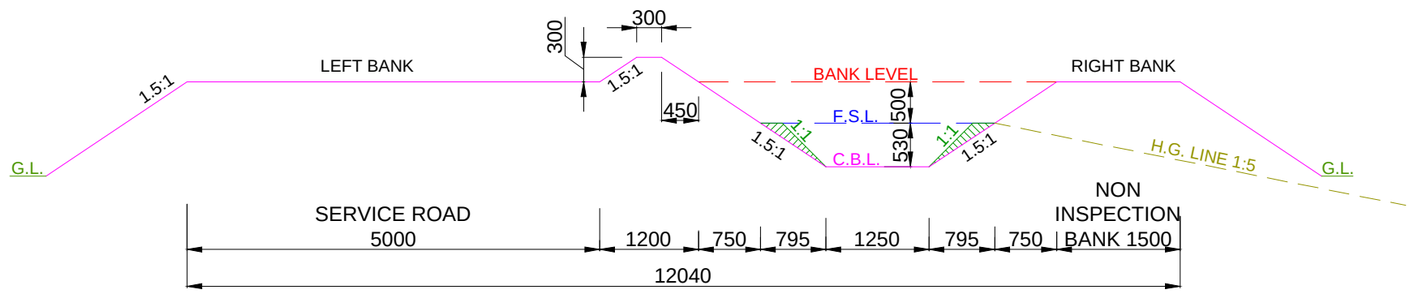
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 102 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FF) 4 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 5.070 KM TO CH: 5.250 KM

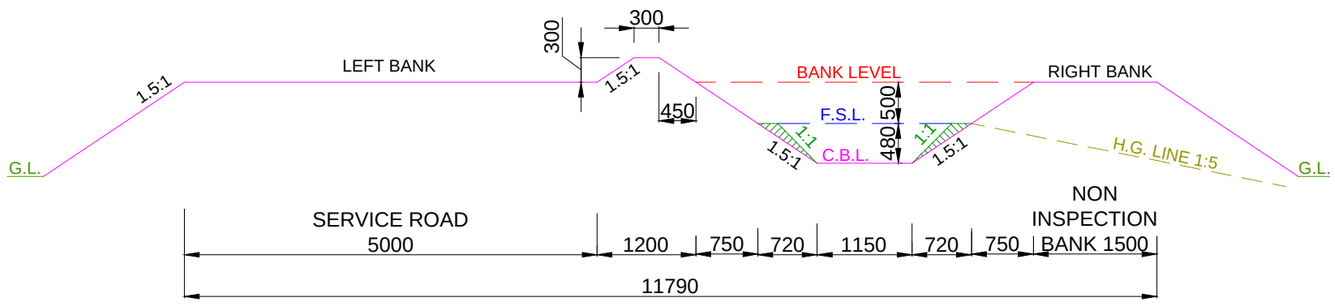
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 103 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FF) 5 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 5.250 KM TO CH: 5.790 KM

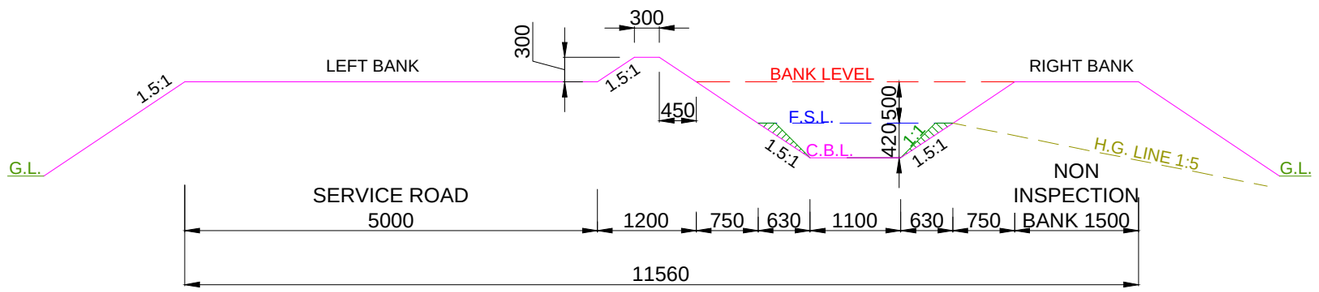
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 104 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FF) 6 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 5.790 KM TO CH: 6.100 KM

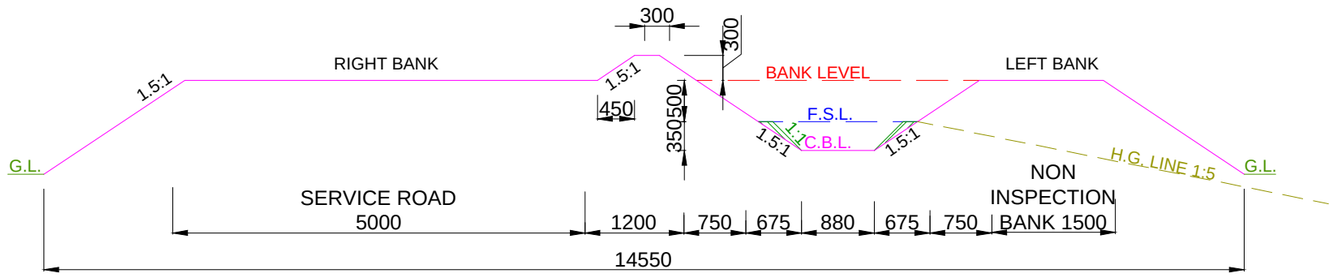
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 105 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FF) 7 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 6.100 KM TO CH: 6.400 KM

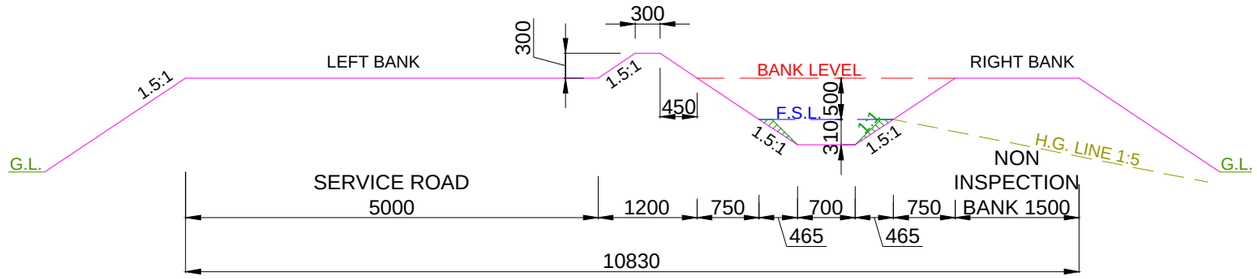
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FF) 8 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 6.400 KM TO CH: 6.650 KM

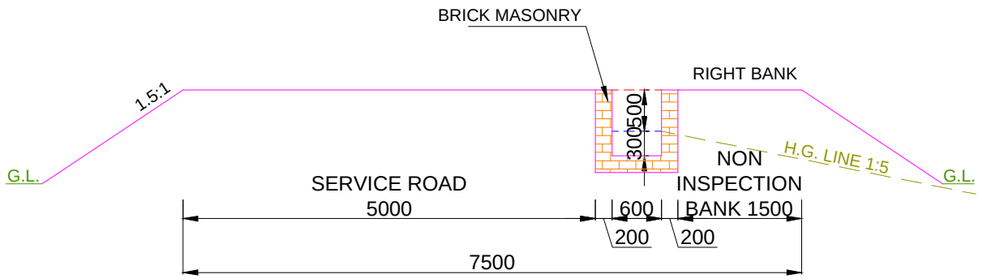
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| CUT AREA | | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| FILL AREA | | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 107 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FF) 9 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 6.650 KM TO CH: 7.200 KM

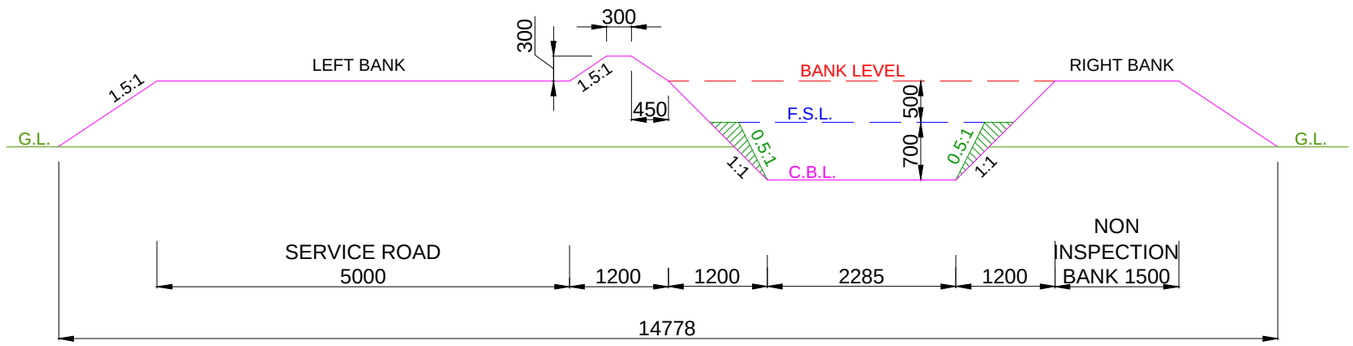
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 108 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(FF) 10 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 2.350 KM

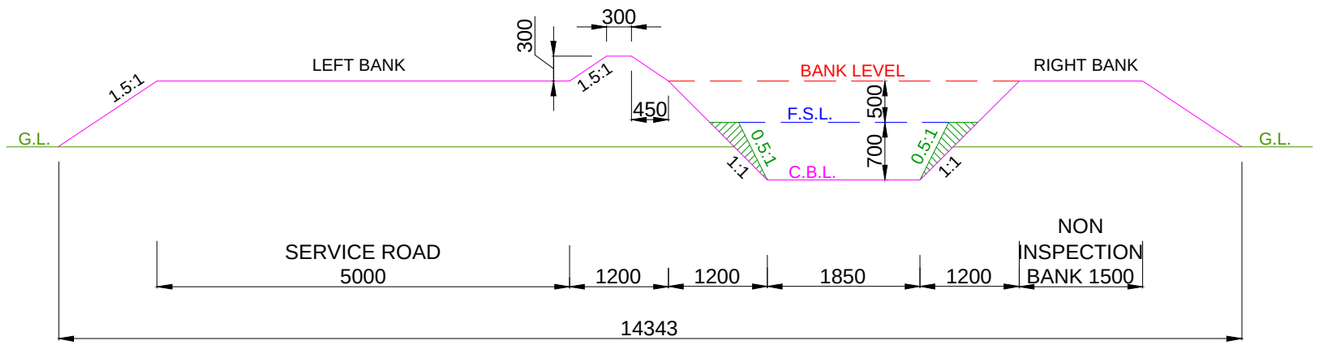
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 109 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(PCF) 1 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 2.350 KM TO CH: 3.600 KM

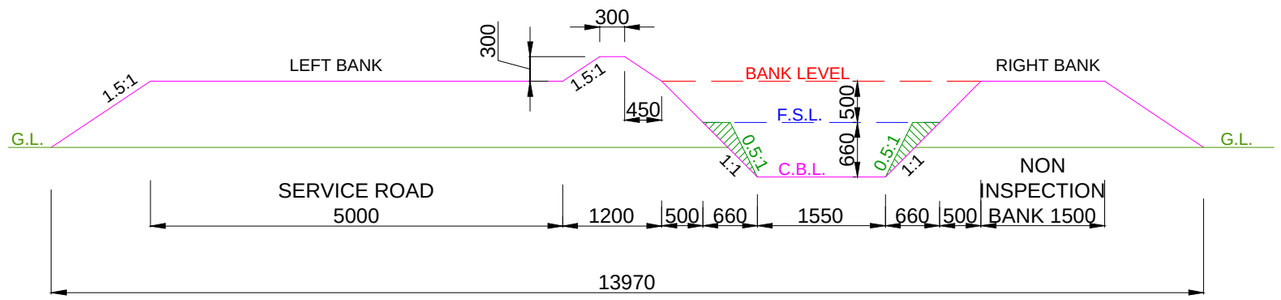
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 110 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(PCF) 2 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 3.600 KM TO CH: 4.400 KM

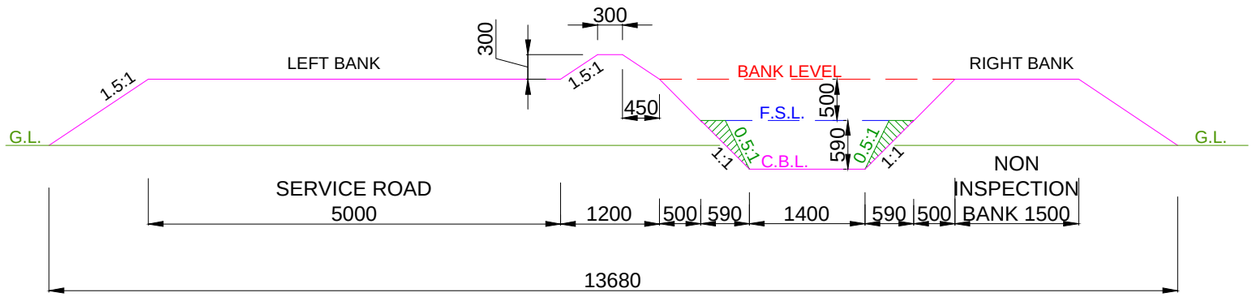
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 111 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(PCF) 3 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 4.400 KM TO CH: 5.070 KM

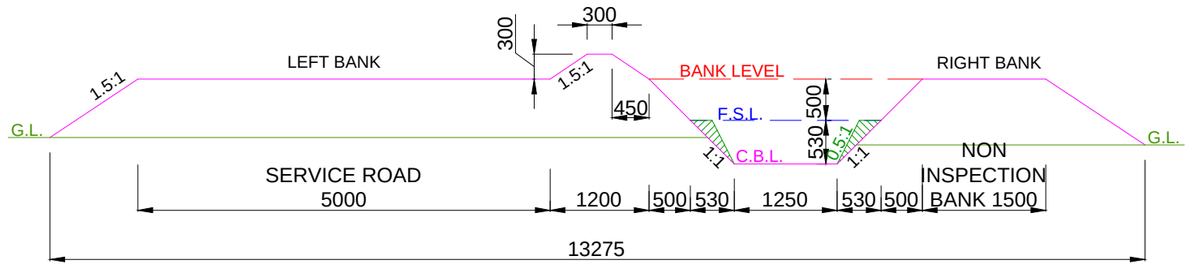
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| CUT AREA | | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| FILL AREA | | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 112 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(PCF) 4 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 5.070 KM TO CH: 5.250 KM

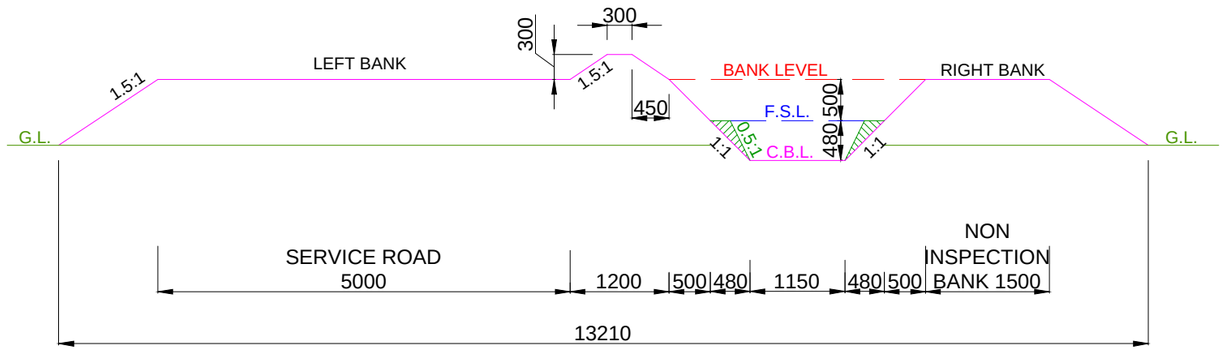
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 113 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(PCF) 5 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 5.250 KM TO CH: 5.790 KM

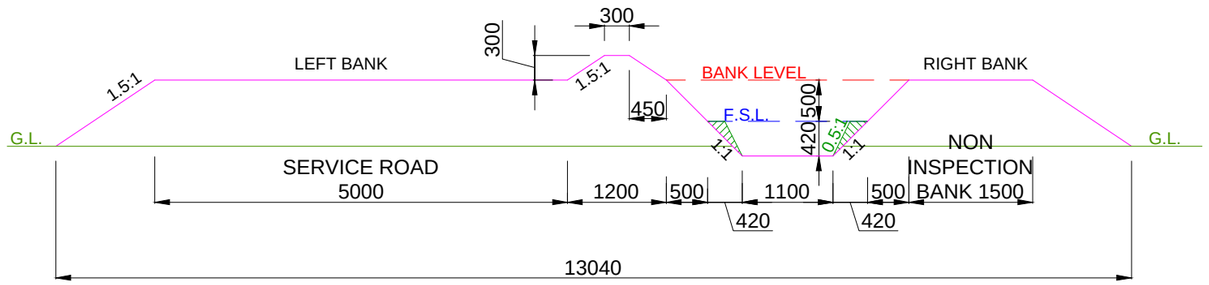
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 114 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(PCF) 6 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 5.790 KM TO CH: 6.100 KM

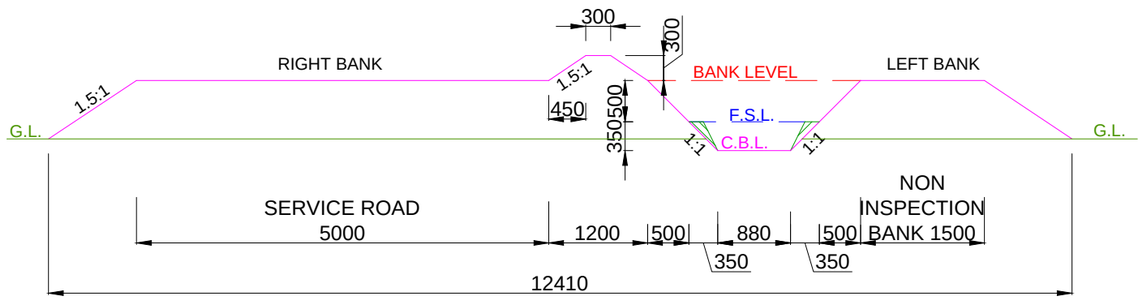
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(PCF) 7 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 6.100 KM TO CH: 6.400 KM

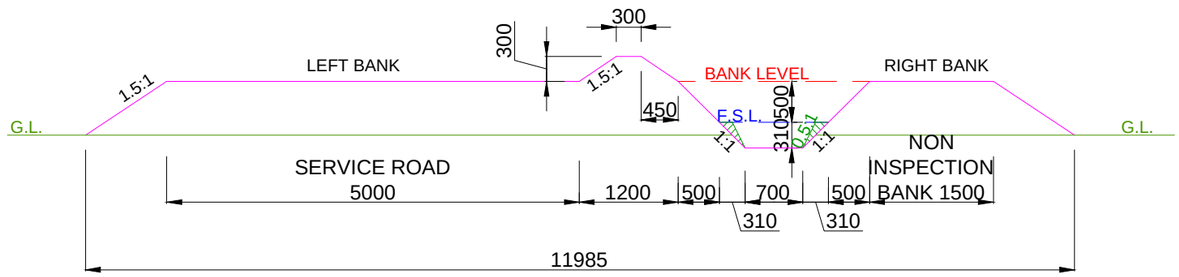
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 116 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(PCF) 8 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 6.400 KM TO CH: 6.650 KM

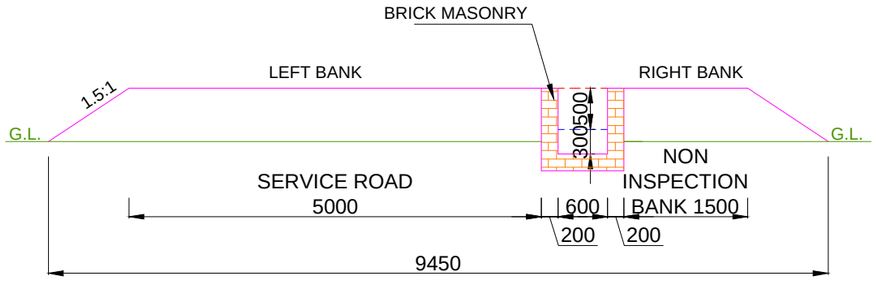
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(PCF) 9 of 10 |

# TYPICAL X - SECTION OF BARIAWA MINOR
# (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 6.650 KM TO CH: 7.200 KM

NOTE:-

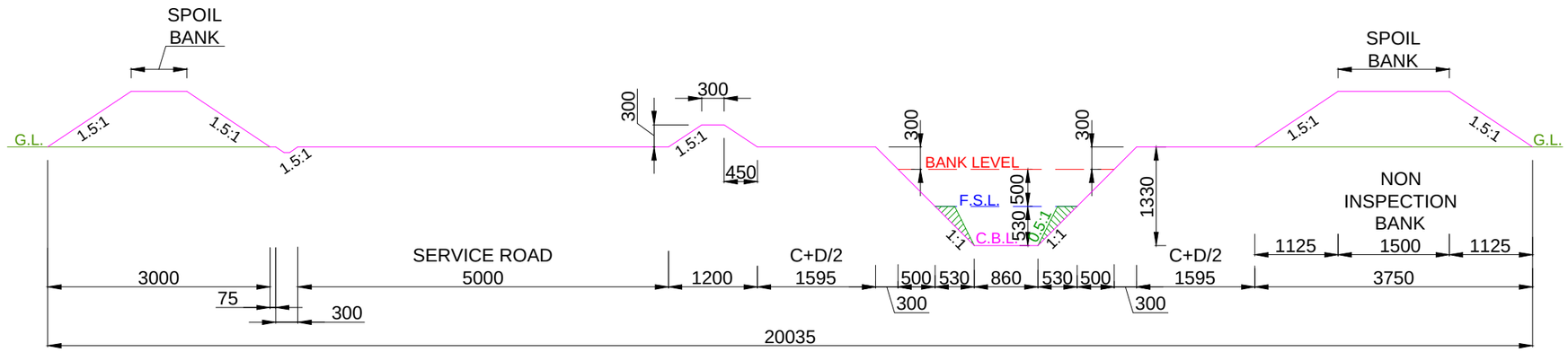
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC /TYP-(PCF) 10 of 10 |

# *ITMA MINOR*

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 3.200 KM

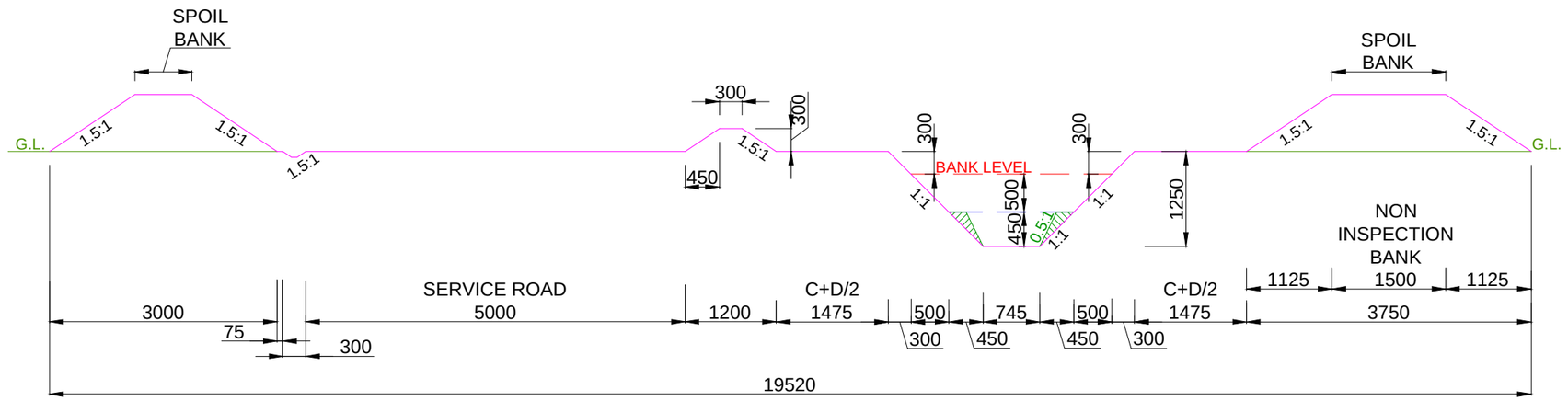
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 120 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(FC) 1 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 3.200 KM TO CH: 3.650 KM

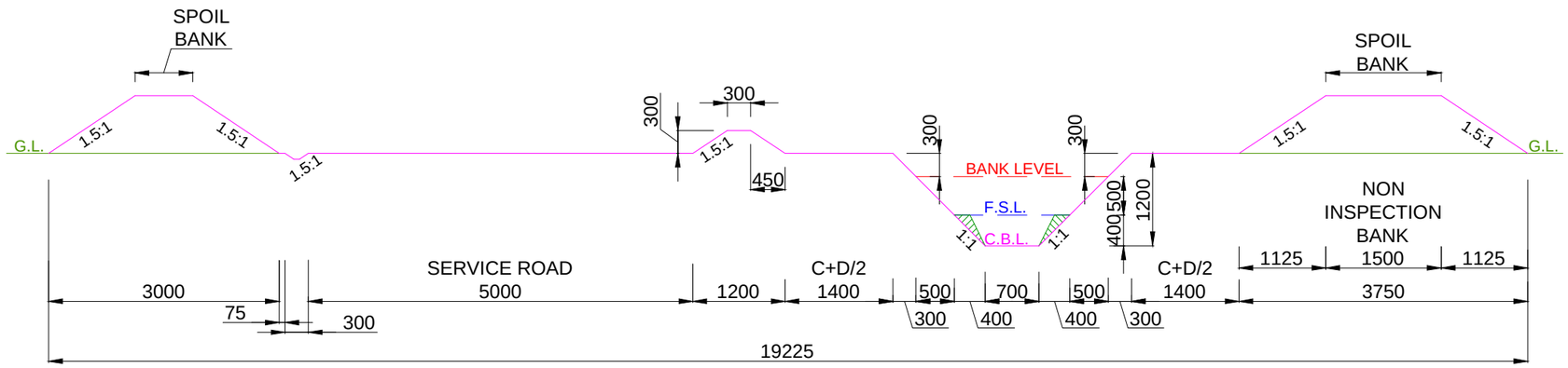
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(FC) 2 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 3.650 KM TO CH: 3.800 KM

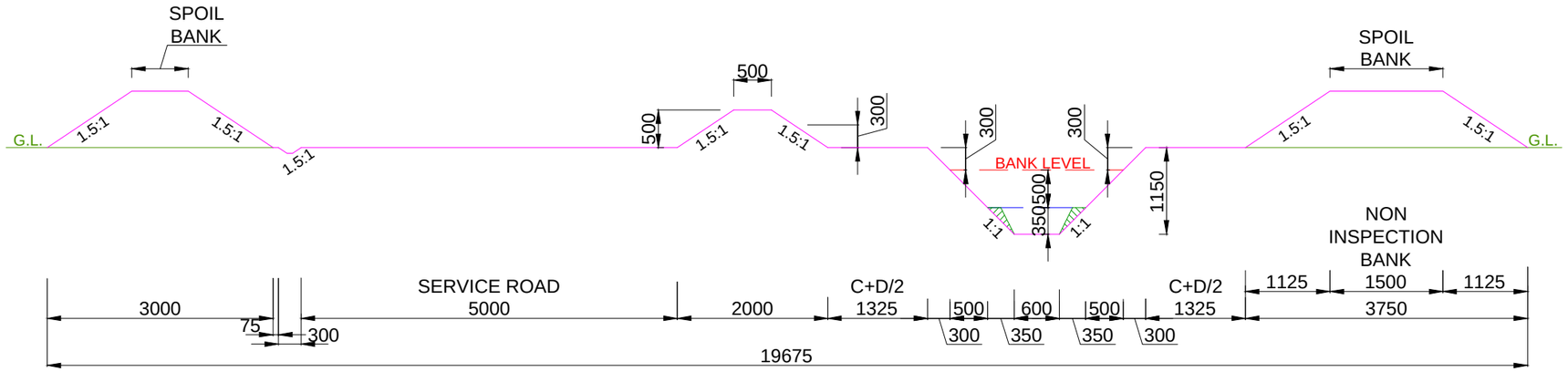
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 122 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(FC) 3 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 3.800 KM TO CH: 4.400 KM

NOTE:-

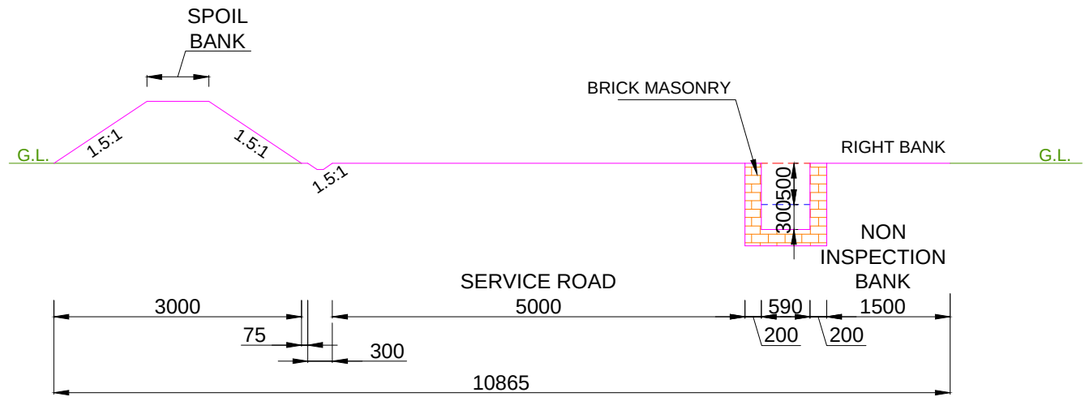
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(FC) 4 of 5 |

123

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 4.400 KM TO CH: 4.880 KM

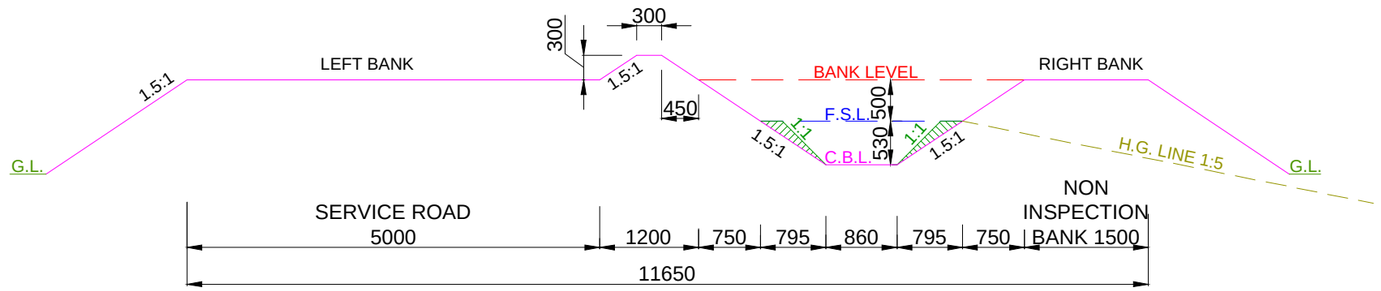
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(FC) 5 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 3.200 KM

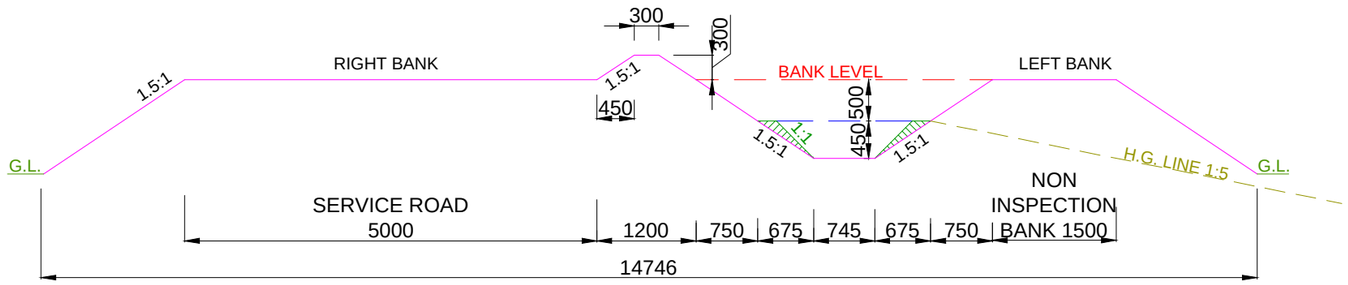
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 125 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(FF) 1 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 3.200 KM TO CH: 3.650 KM

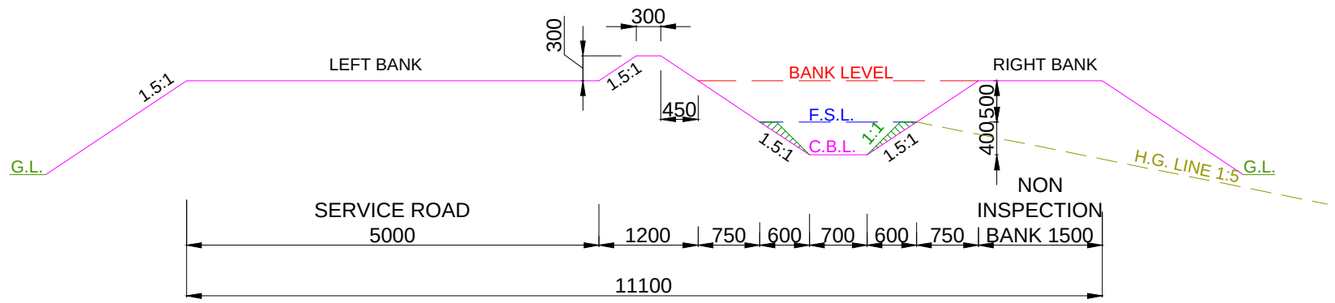
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(FF) 2 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 3.650 KM TO CH: 3.800 KM

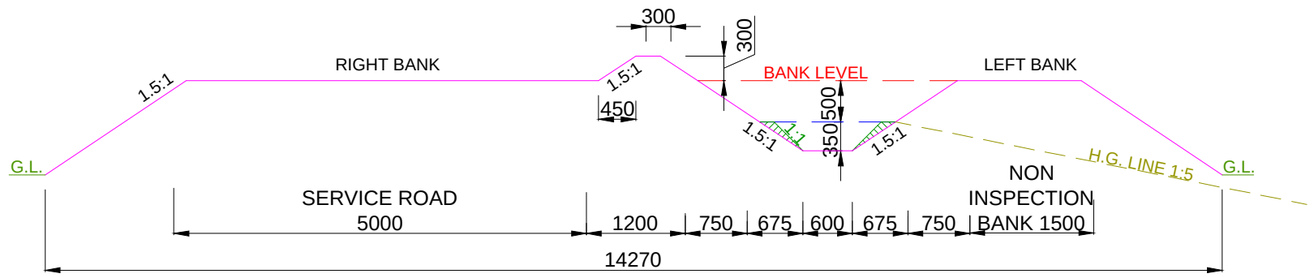
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 127 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(FF) 3 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 3.800 KM TO CH: 4.400 KM

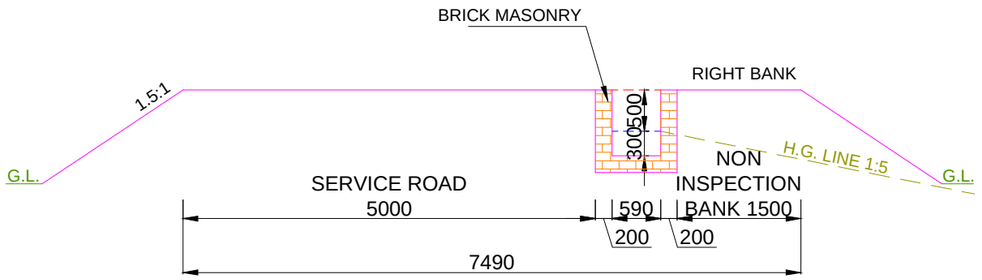
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 128 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(FF) 4 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 4.400 KM TO CH: 4.880 KM

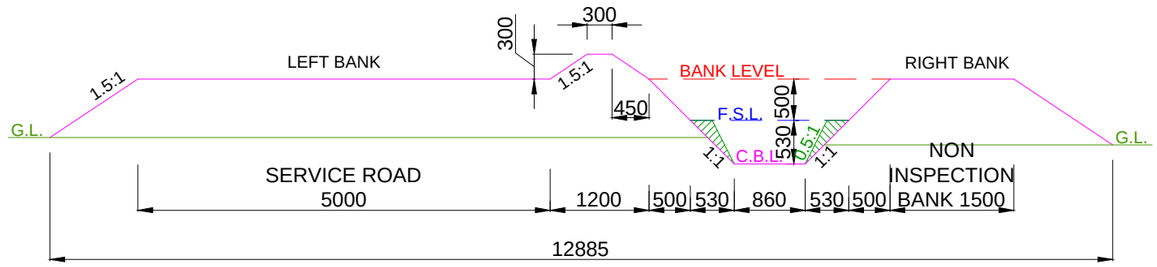
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(FF) 5 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 3.200 KM

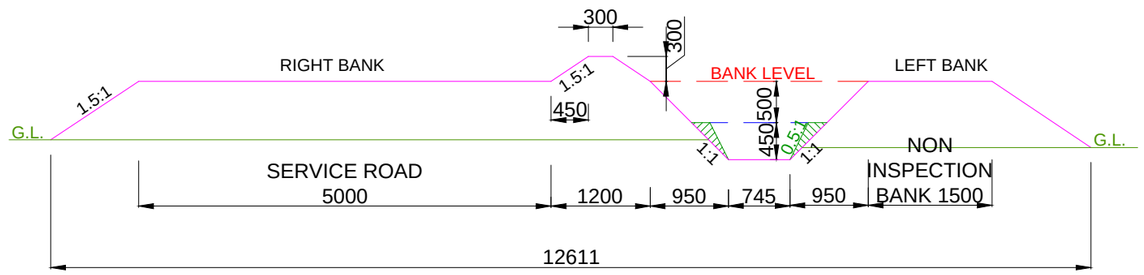
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 130 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(PCF) 1 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 3.200 KM TO CH: 3.650 KM

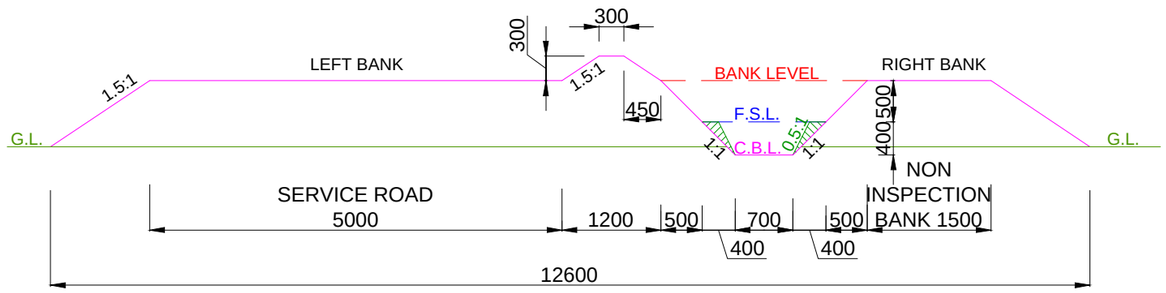
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(PCF) 2 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 3.650 KM TO CH: 3.800 KM

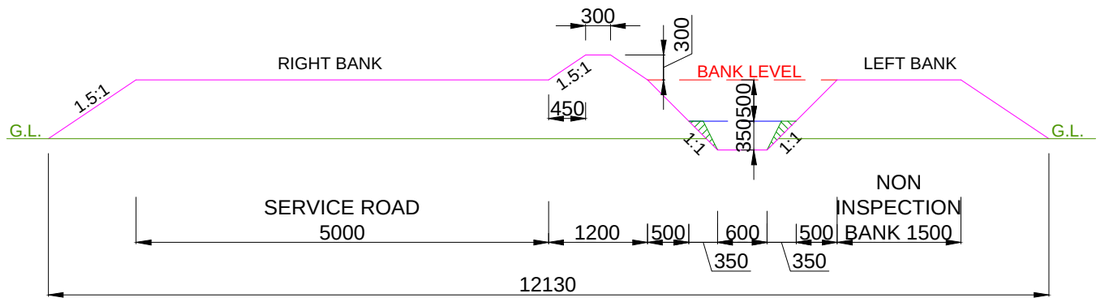
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(PCF) 3 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 3.800 KM TO CH: 4.400 KM

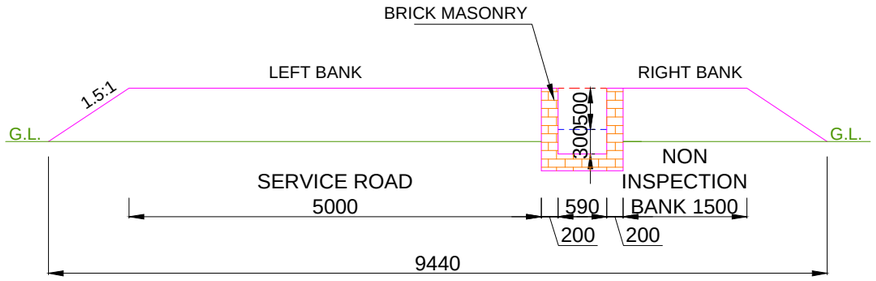
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(PCF) 4 of 5 |

# TYPICAL X - SECTION OF ITMA MINOR
# (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 4.400 KM TO CH: 4.880 KM

NOTE:-

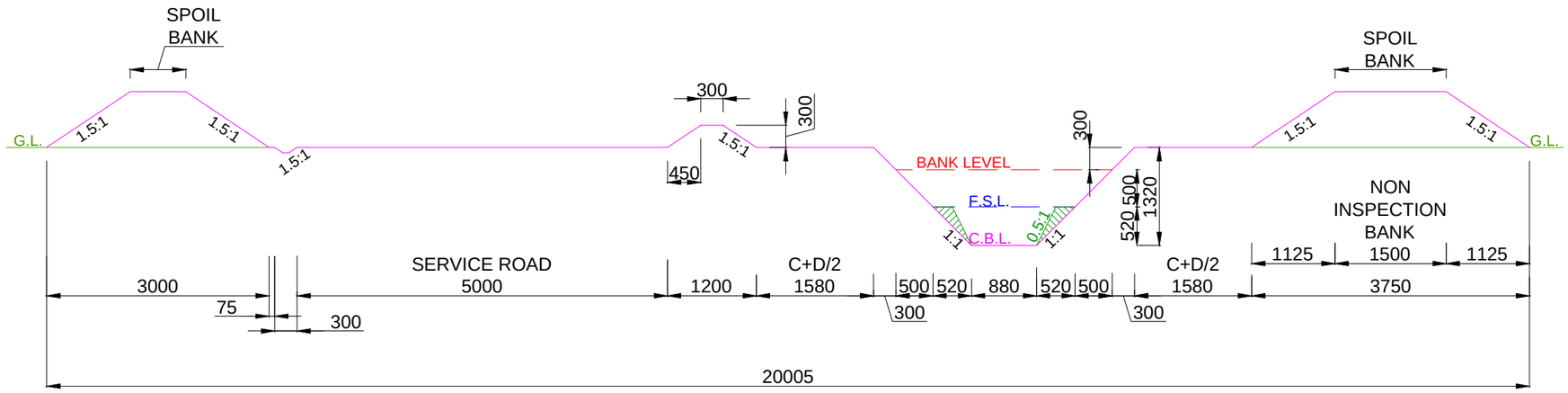
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC /TYP-(PCF) 5 of 5 |

# *MALI MINOR*

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 0.060 KM

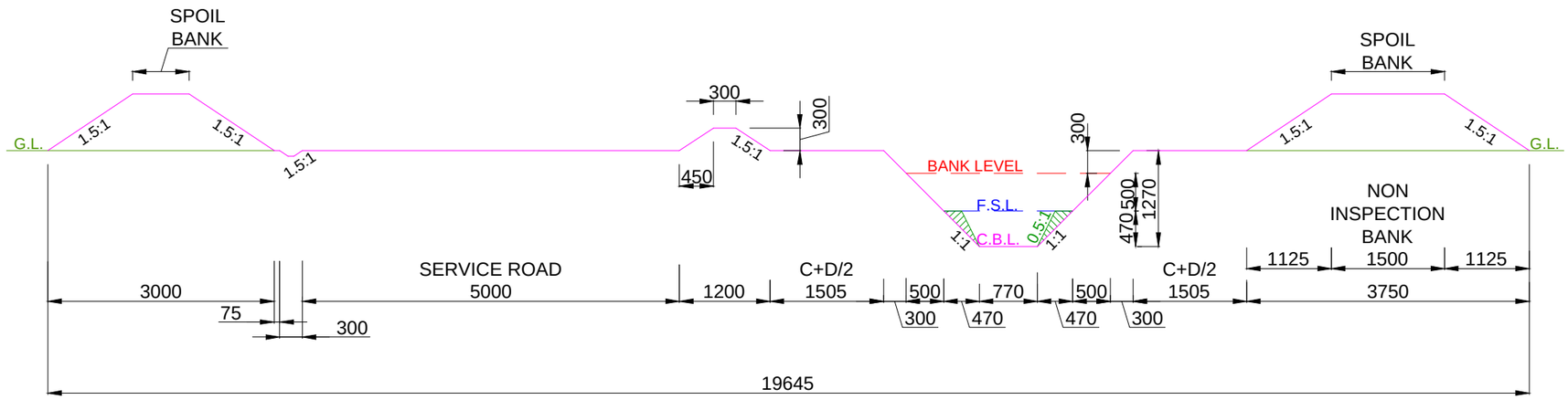
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 136 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FC) 1 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.060 KM TO CH: 0.200 KM

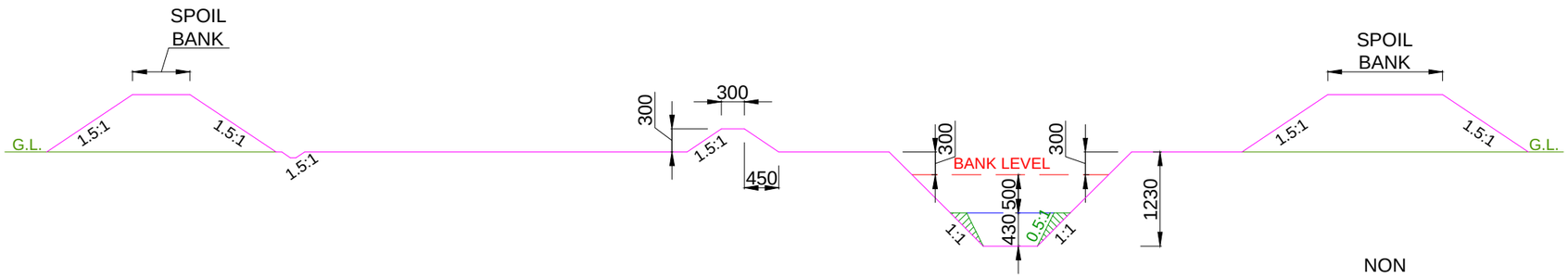
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FC) 2 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.020 KM TO CH: 1.220 KM

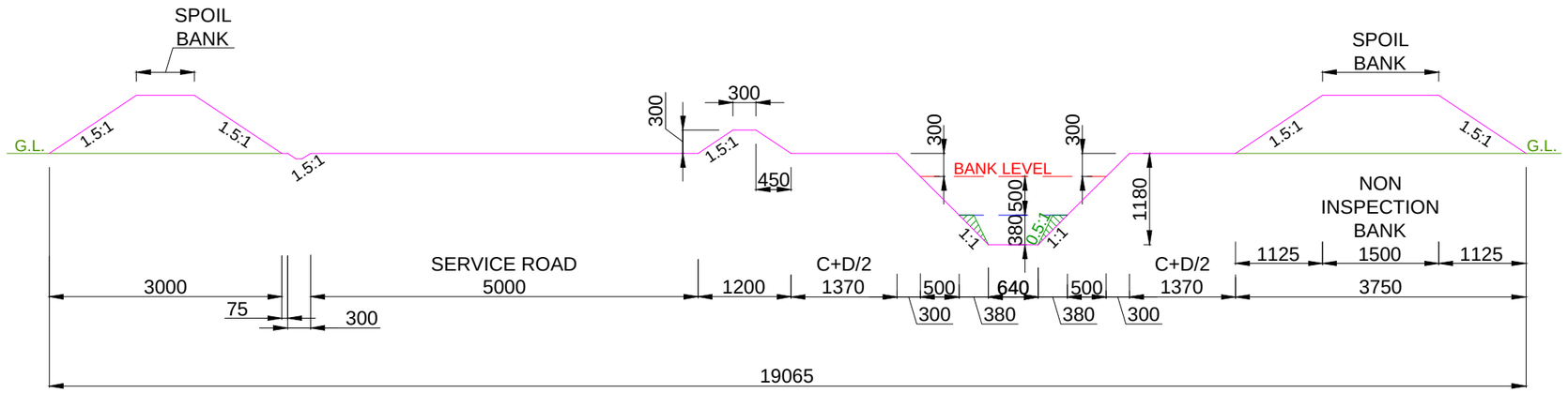
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 138 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FC) 3 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 1.220 KM TO CH: 1.370 KM

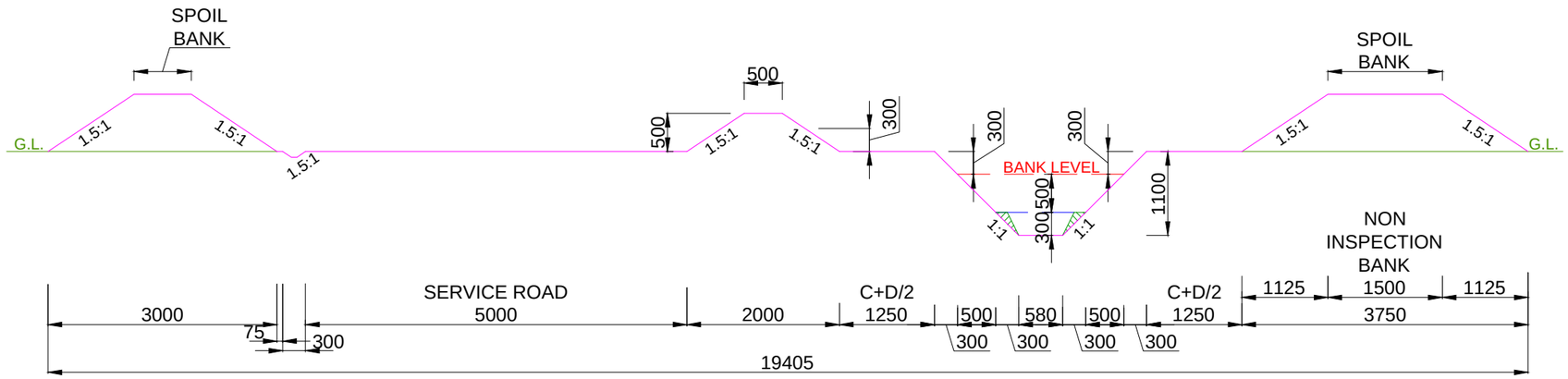
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FC) 4 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 1.370 KM TO CH: 2.000 KM

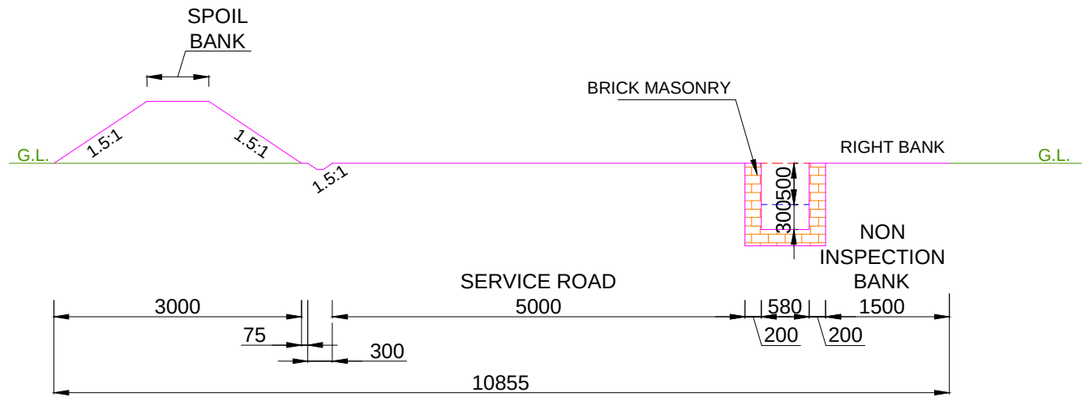
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 140 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FC) 5 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 2.000 KM TO CH: 4.050 KM

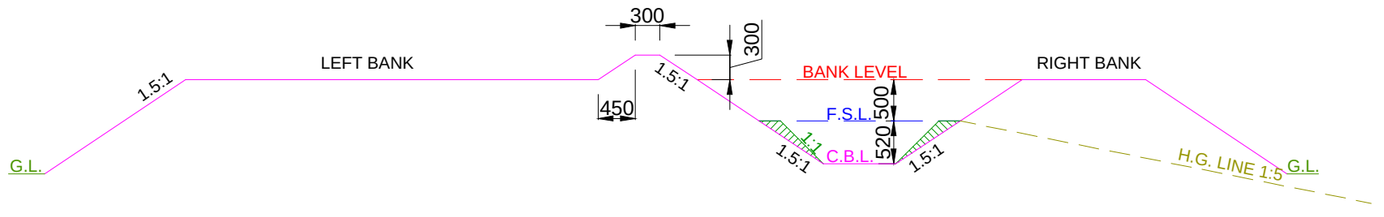
NOTE:-

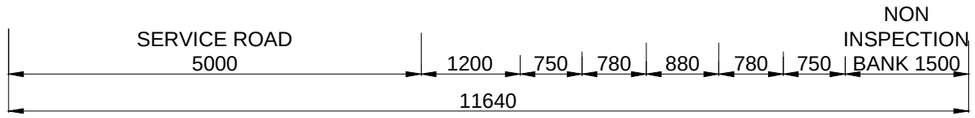
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 141 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FC) 6 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 0.060 KM

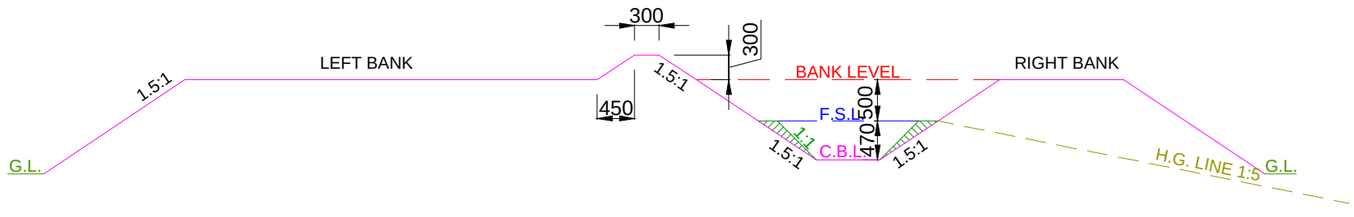
NOTE:-

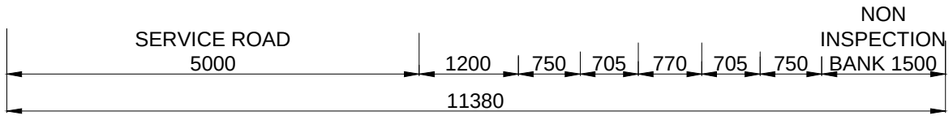
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 142 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FF) 1 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.060 KM TO CH: 0.200 KM

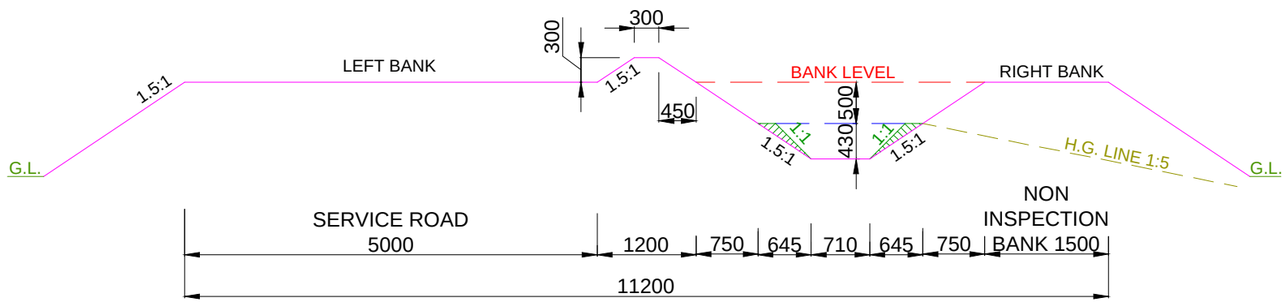
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| CUT AREA | | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| FILL AREA | | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 143 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FF) 2 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.020 KM TO CH: 1.220 KM

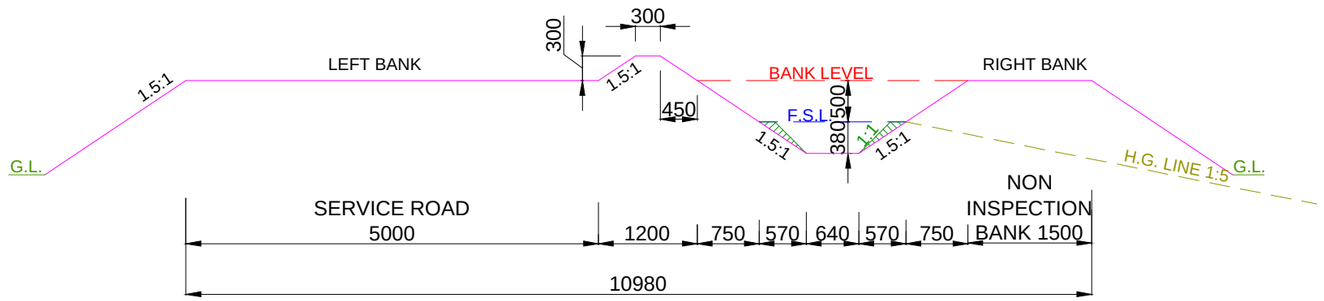
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 144 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FF) 3 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 1.220 KM TO CH: 1.370 KM

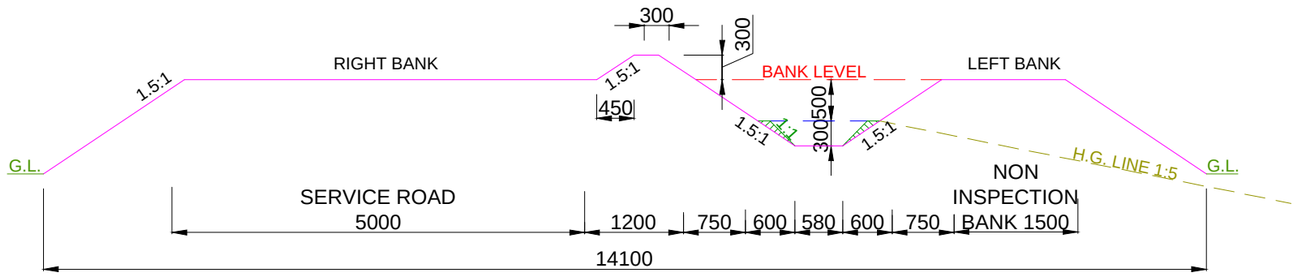
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 145 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FF) 4 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 1.370 KM TO CH: 2.000 KM

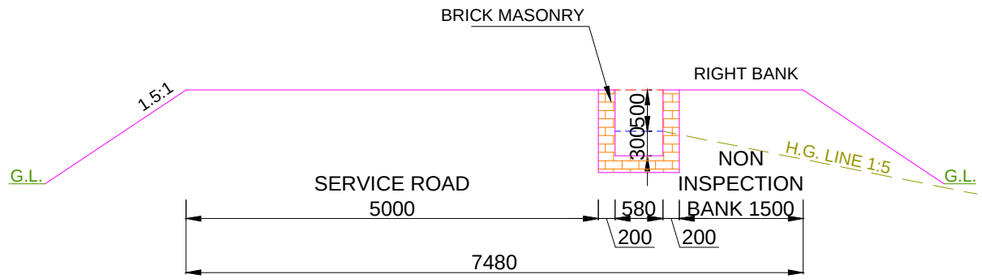
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FF) 5 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 2.000 KM TO CH: 4.050 KM

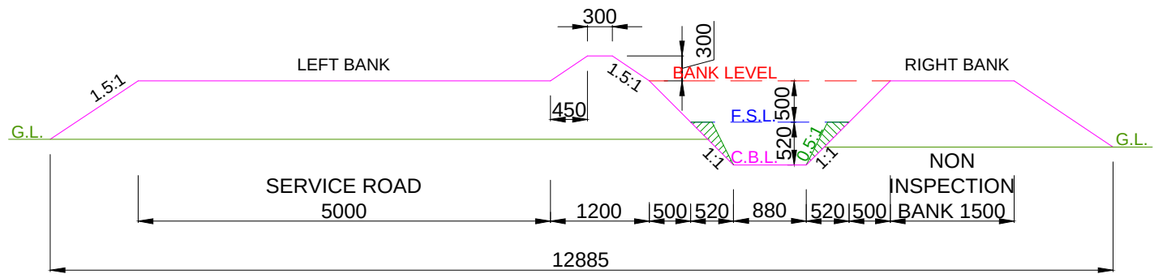
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 147 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(FF) 6 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 0.060 KM

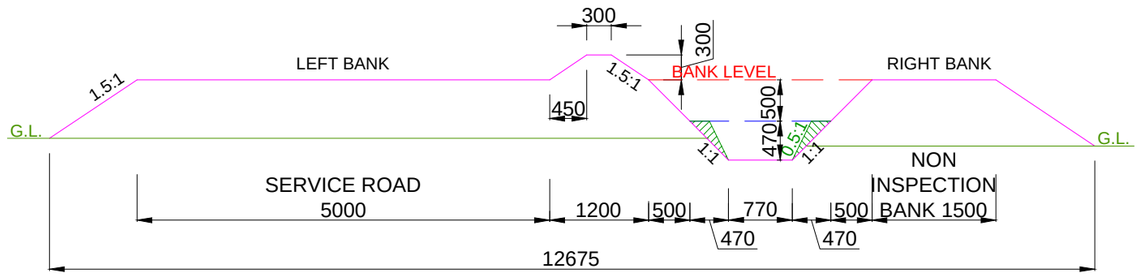
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 148 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(PCF) 1 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.060 KM TO CH: 0.200 KM

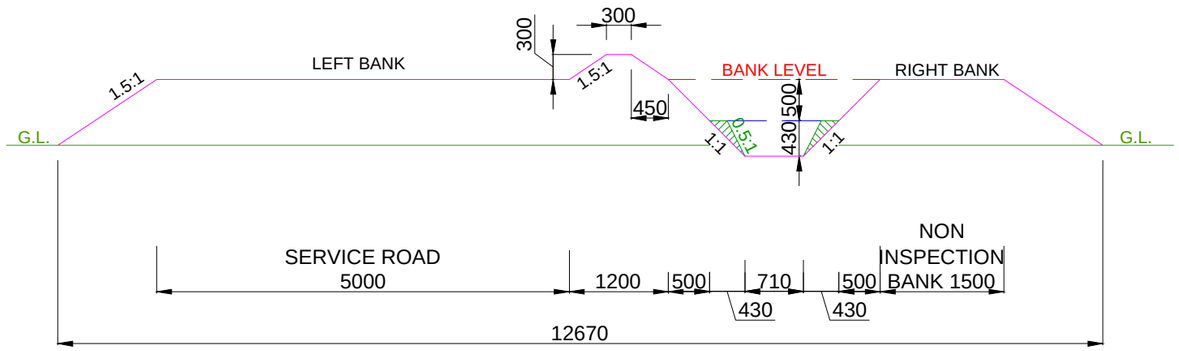
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 149 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(PCF) 2 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.020 KM TO CH: 1.220 KM

NOTE:-

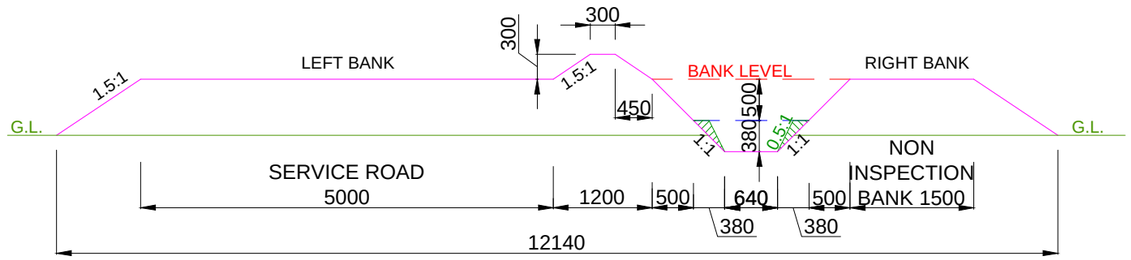
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(PCF) 3 of 6 |

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# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 1.220 KM TO CH: 1.370 KM

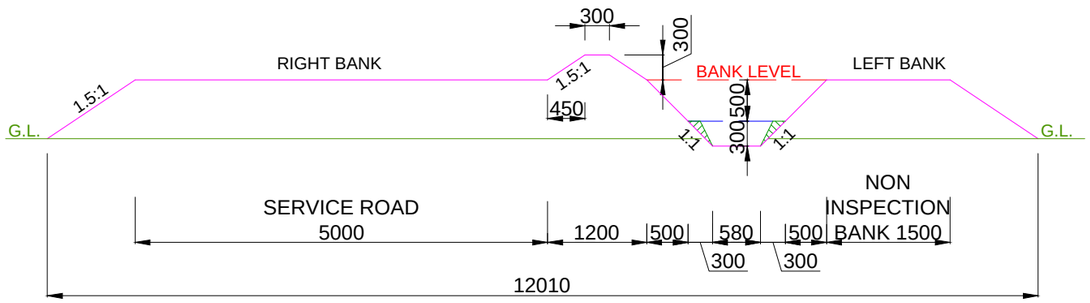
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(PCF) 4 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 1.370 KM TO CH: 2.000 KM

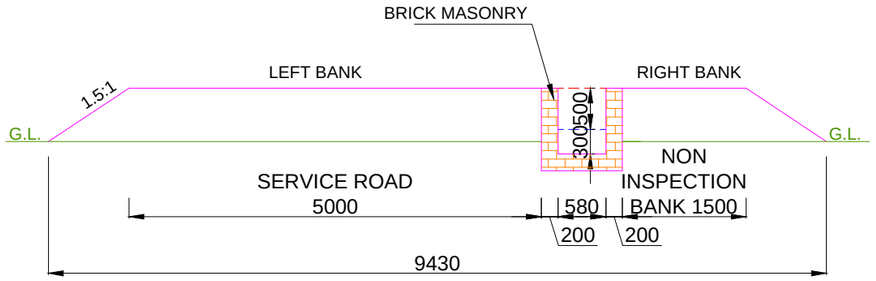
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 152 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(PCF) 5 of 6 |

# TYPICAL X - SECTION OF MALI MINOR
# (OFFTAKE FROM RD - 4+520 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 2.000 KM TO CH: 4.050 KM

NOTE:-

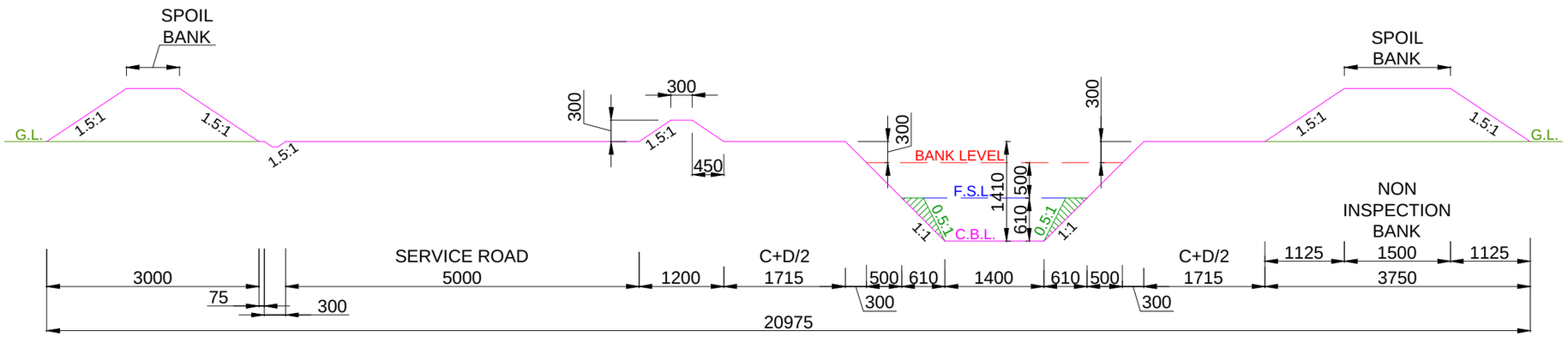
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC /TYP-(PCF) 6 of 6 |

# *THUMBHI MINOR*

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 2.050 KM

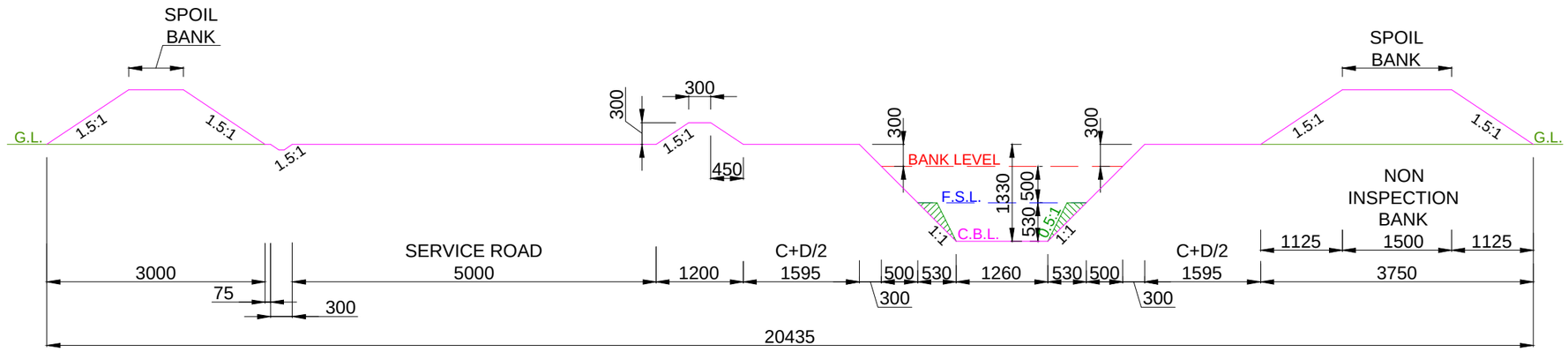
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 155 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FC) 1 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 2.050 KM TO CH: 2.550 KM

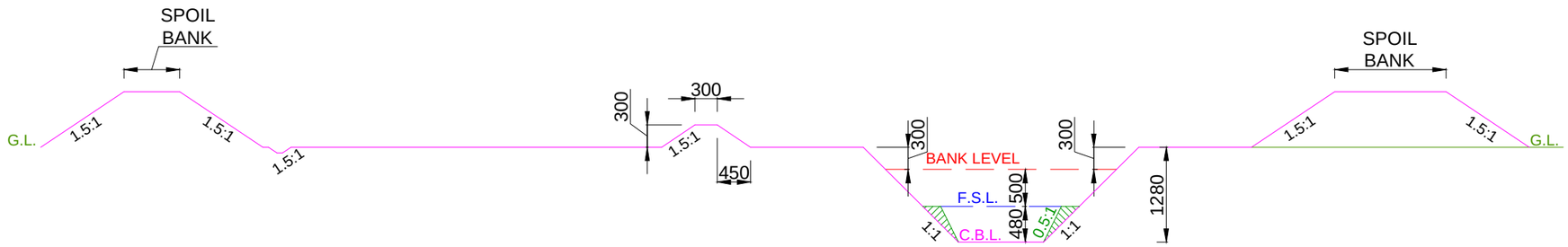
NOTE:-

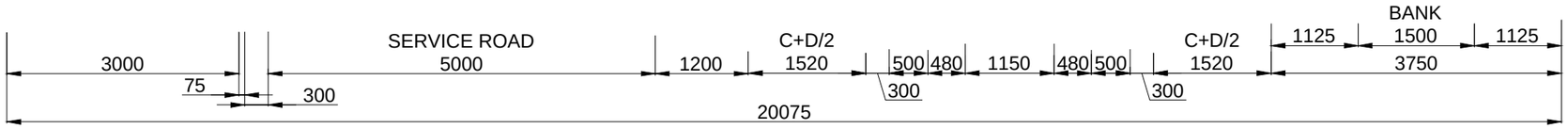
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 156 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FC) 2 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 2.550 KM TO CH: 3.300 KM

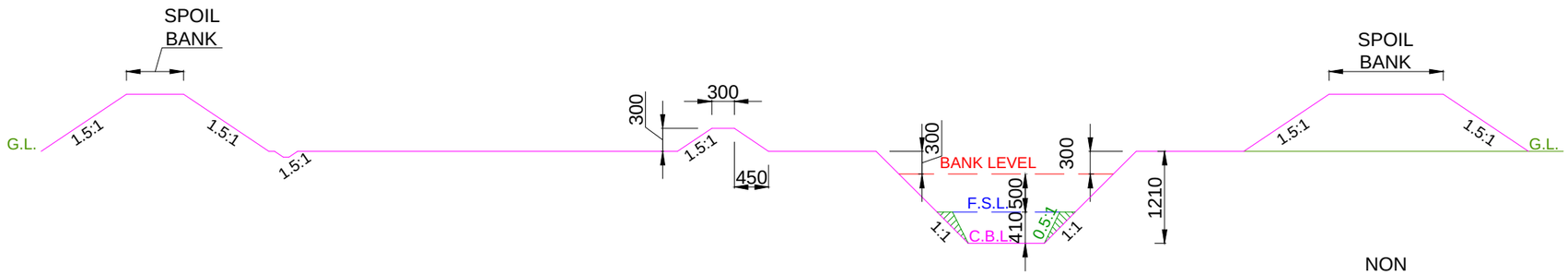
NOTE:-

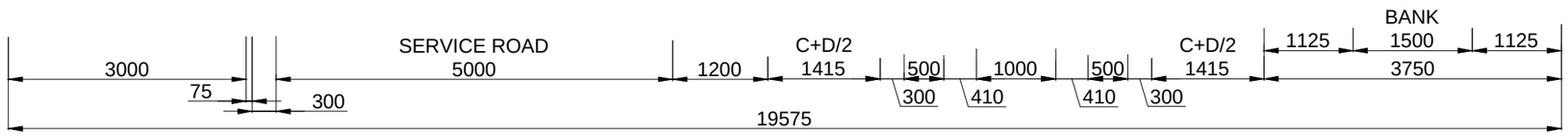
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FC) 3 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 3.300 KM TO CH: 3.900 KM

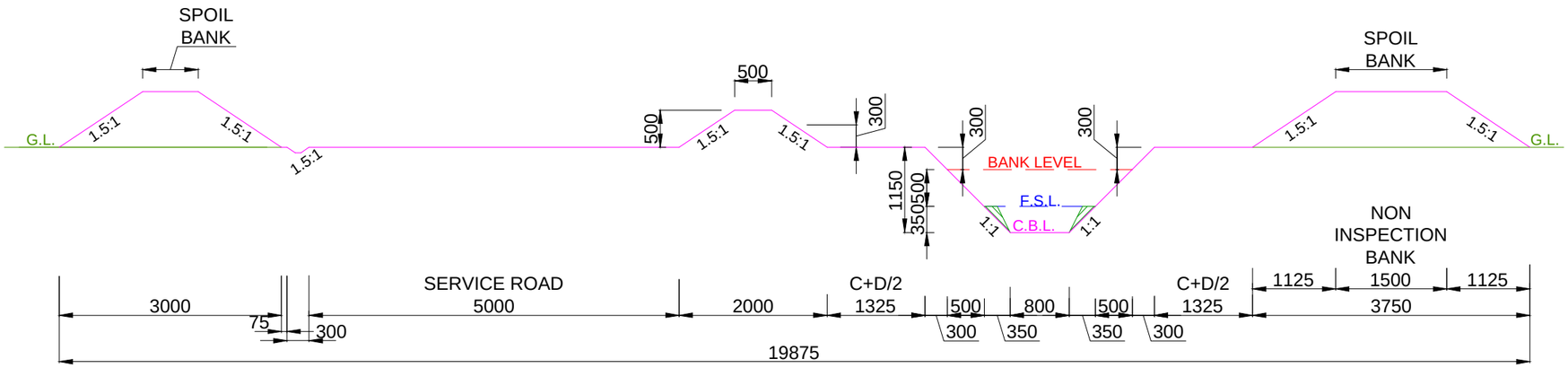
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FC) 4 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 3.900 KM TO CH: 4.700 KM

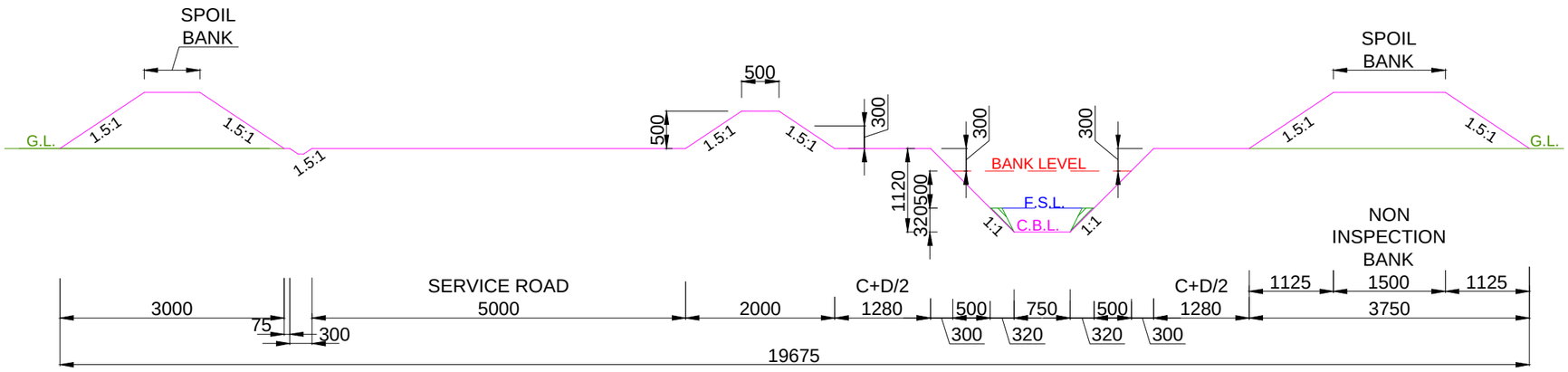
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 159 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FC) 5 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 4.700 KM TO CH: 5.200 KM

NOTE:-

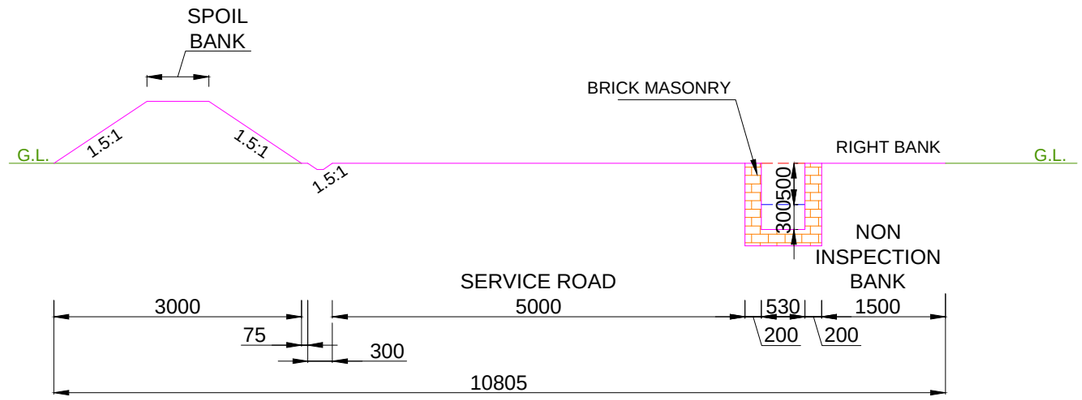
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FC) 6 of 7 |

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# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 5.200 KM TO CH: 5.900 KM

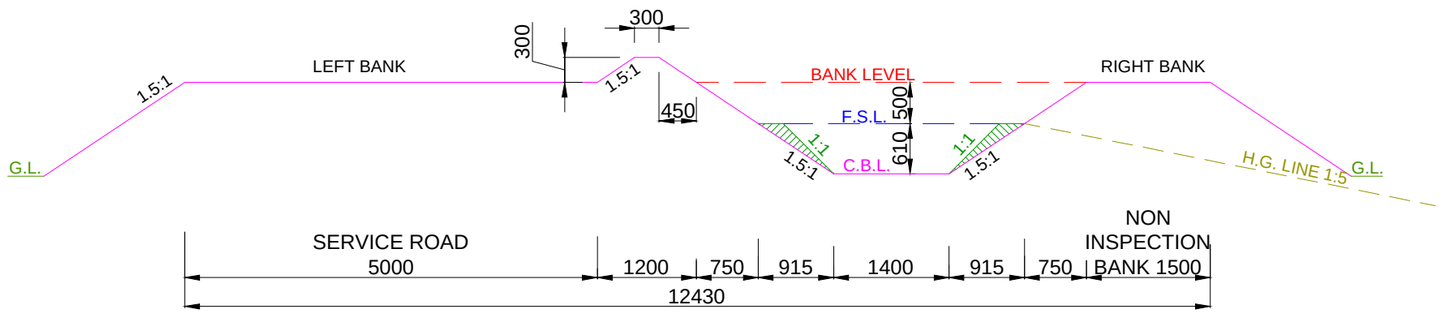
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FC) 7 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 2.050 KM

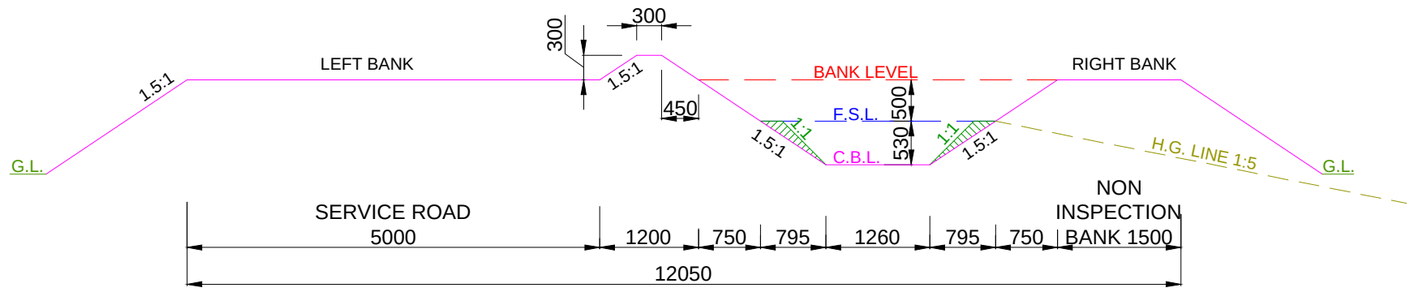
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FF) 1 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 2.050 KM TO CH: 2.550 KM

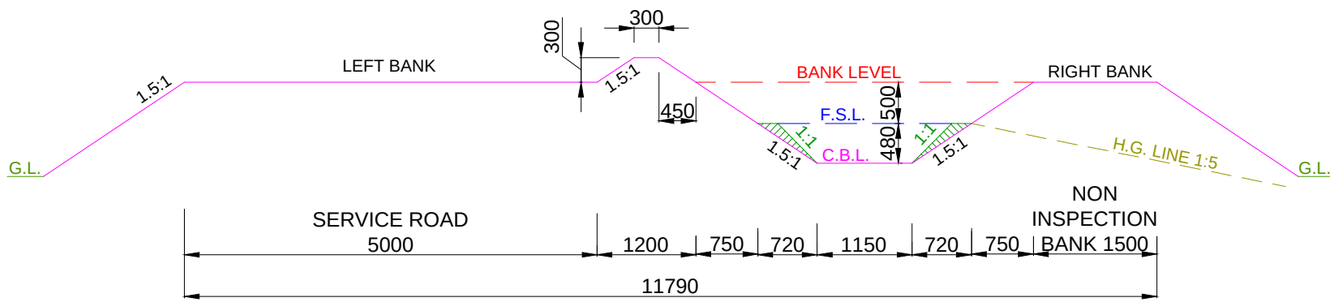
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FF) 2 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 2.550 KM TO CH: 3.300 KM

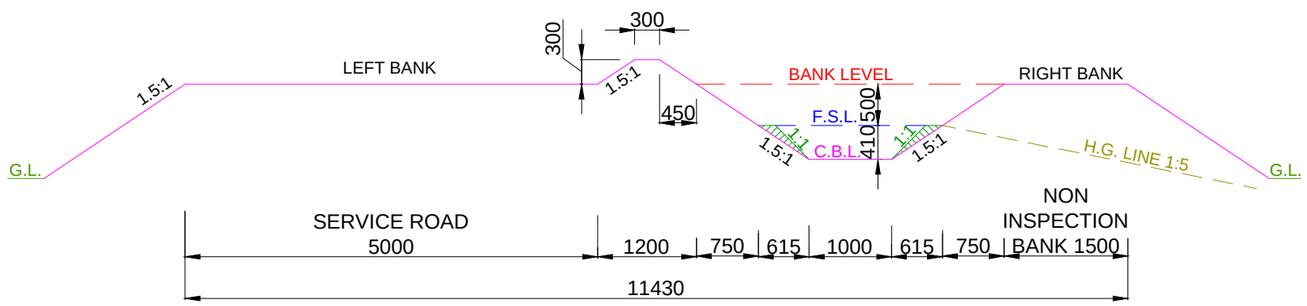
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 164 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FF) 3 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 3.300 KM TO CH: 3.900 KM

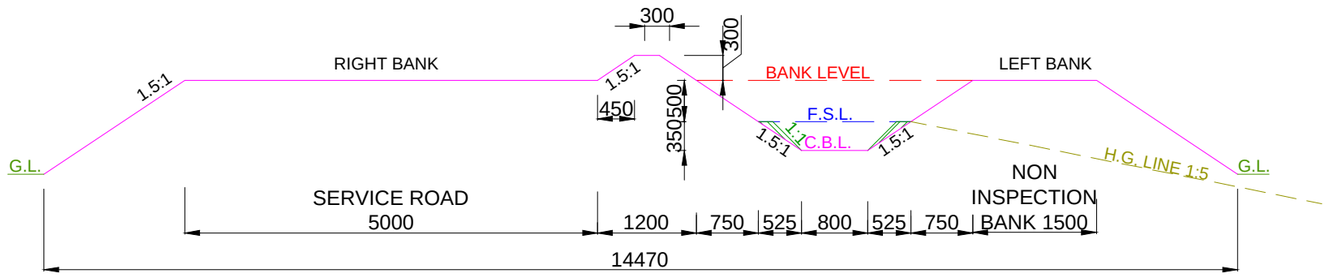
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 165 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FF) 4 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 3.900 KM TO CH: 4.700 KM

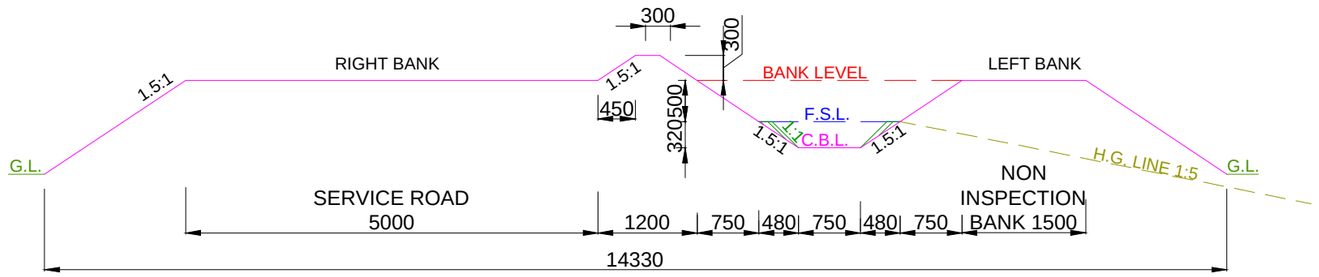
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FF) 5 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 4.700 KM TO CH: 5.200 KM

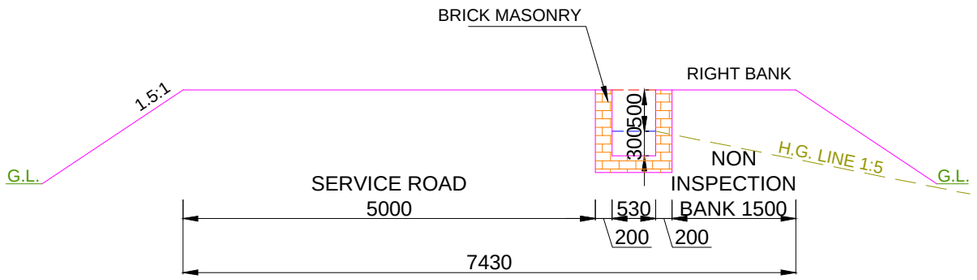
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
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| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FF) 6 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 5.200 KM TO CH: 5.900 KM

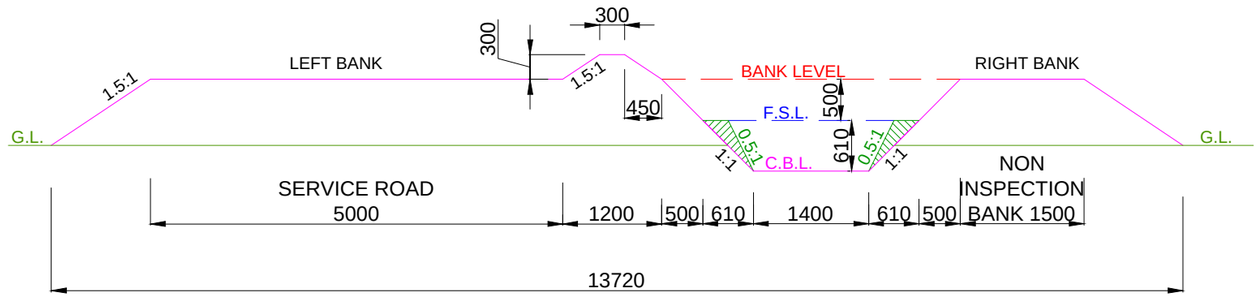
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 168 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(FF) 7 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 2.050 KM

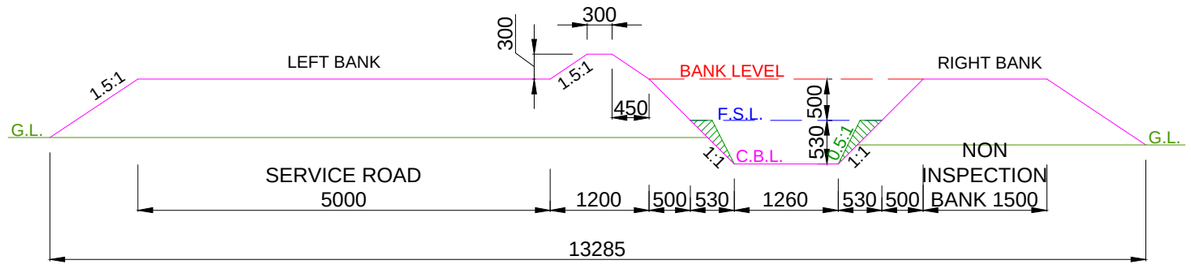
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 169 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(PCF) 1 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 2.050 KM TO CH: 2.550 KM

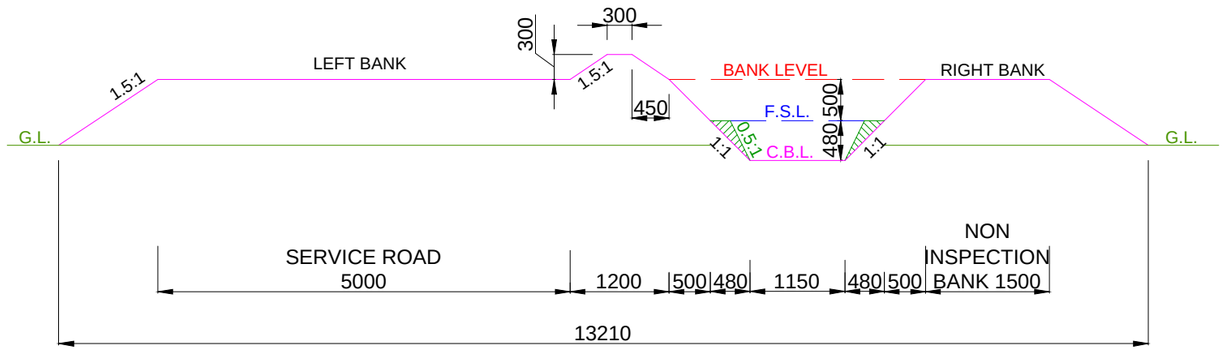
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
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| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 170 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(PCF) 2 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 2.550 KM TO CH: 3.300 KM

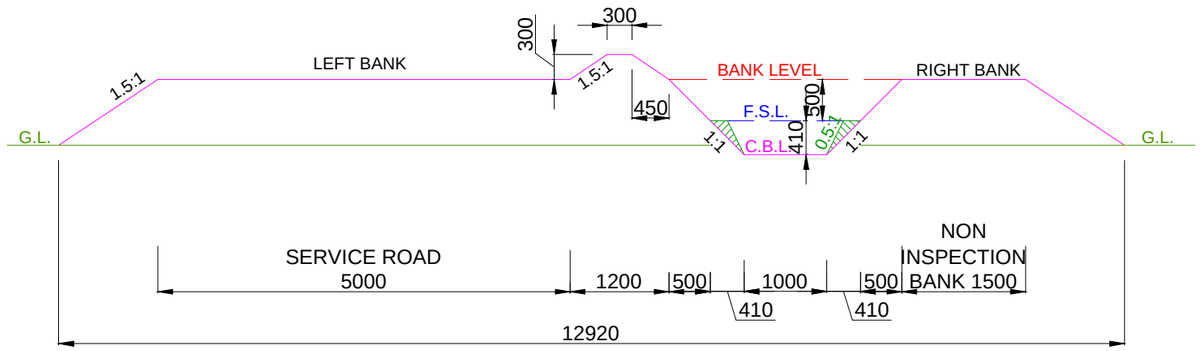
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(PCF) 3 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 3.300 KM TO CH: 3.900 KM

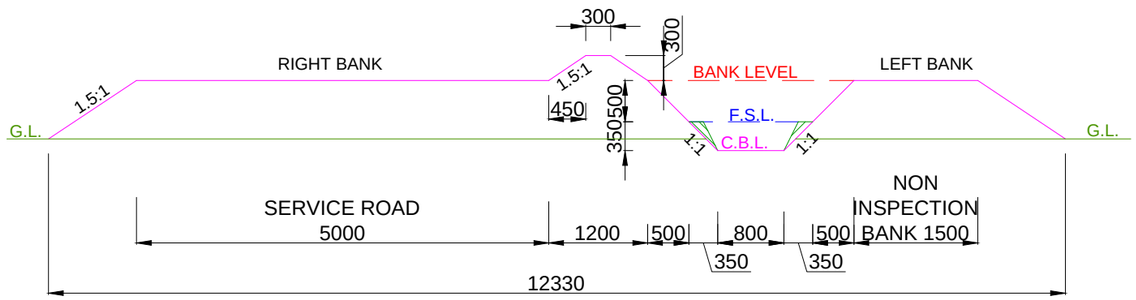
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- | | |
|---|---|---|---|---|
| | CUT AREA | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(PCF) 4 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 3.900 KM TO CH: 4.700 KM

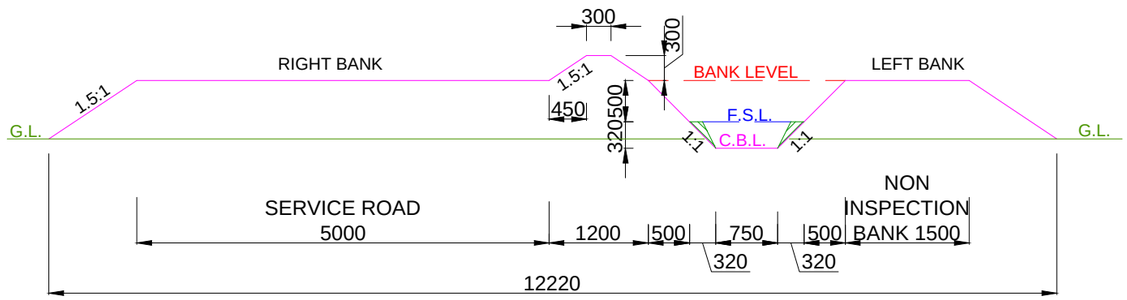
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 173 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(PCF) 5 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 4.700 KM TO CH: 5.200 KM

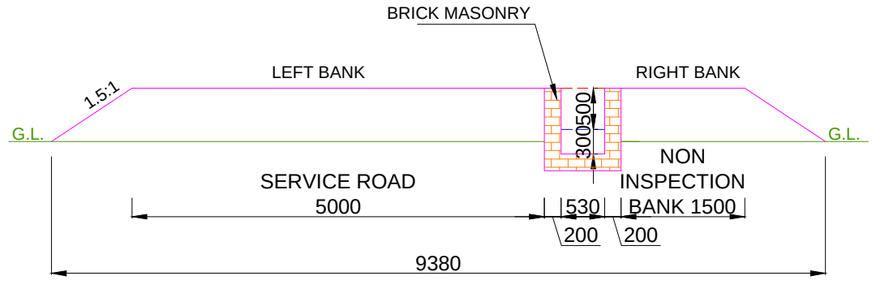
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(PCF) 6 of 7 |

# TYPICAL X - SECTION OF THUMBHI MINOR
# (OFFTAKE FROM RD - 7+260 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 5.200 KM TO CH: 5.900 KM

NOTE:-

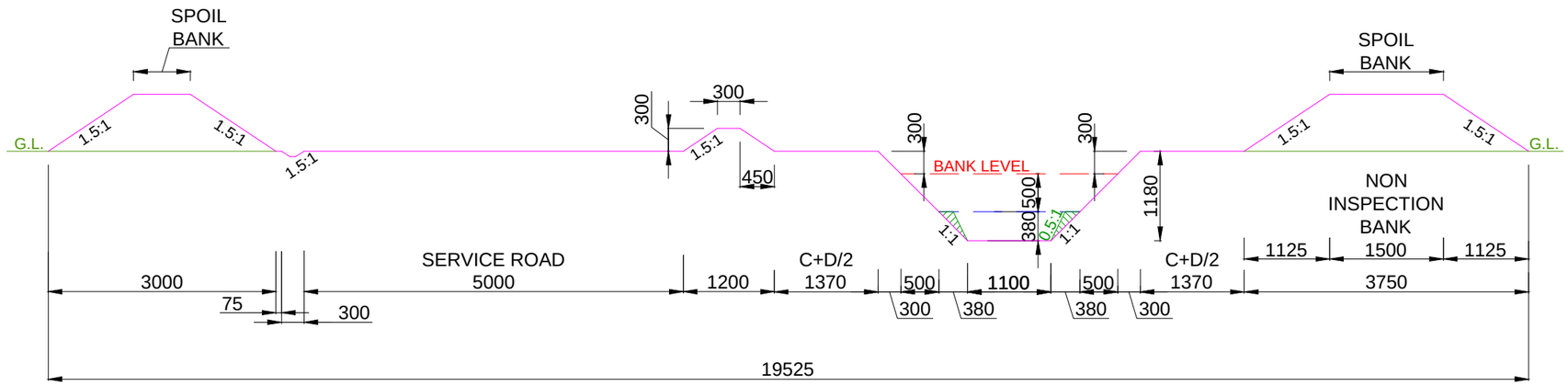
1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF THUMBHI MR. (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 175 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC /TYP-(PCF) 7 of 7 |

# *SOTIDIH MINOR*

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 0.030 KM

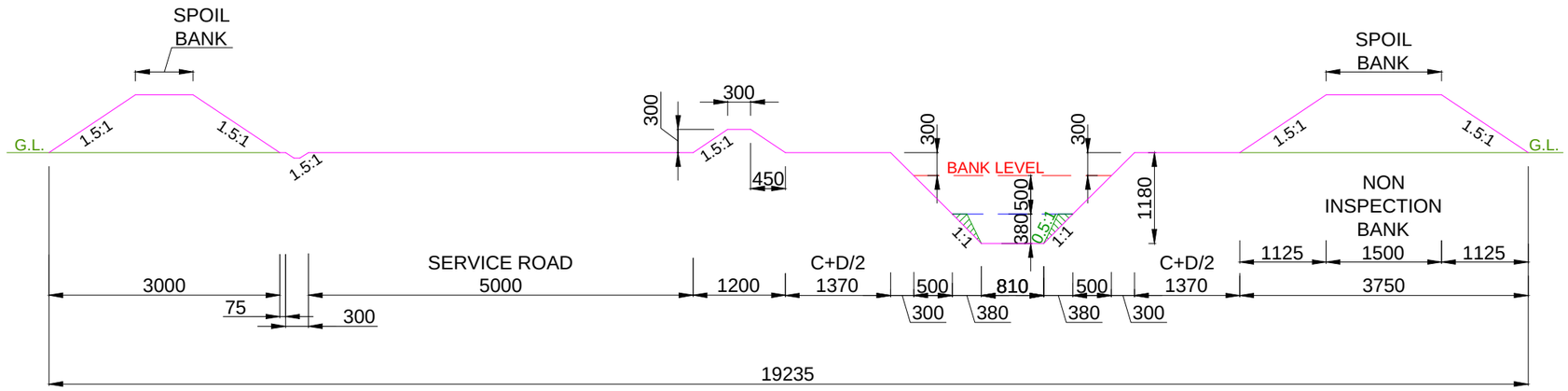
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 177 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(FC) 1 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.030 KM TO CH: 0.700 KM

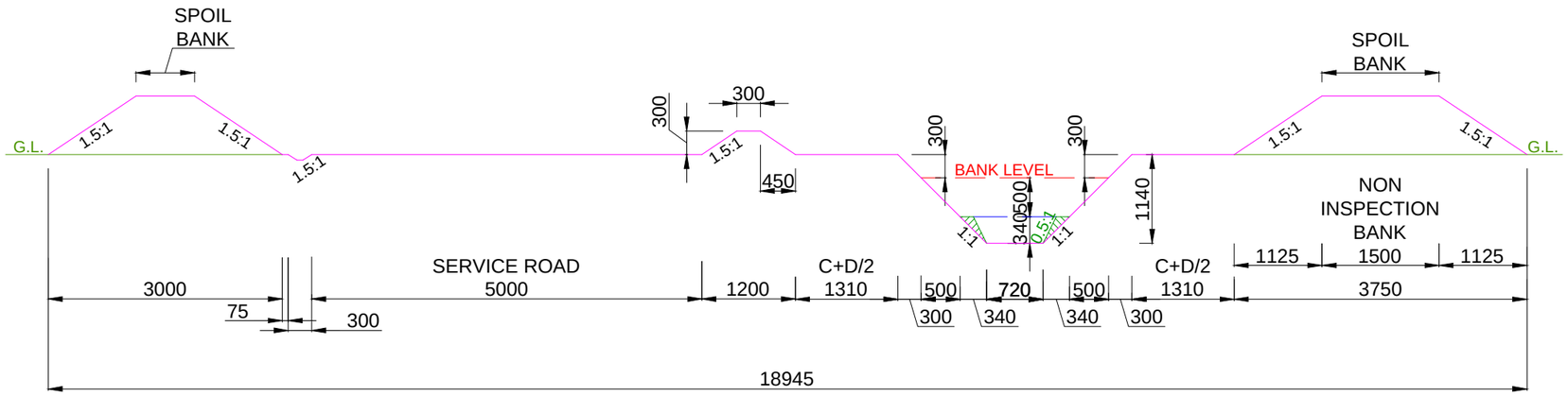
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 178 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(FC) 2 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 0.700 KM TO CH: 1.700 KM

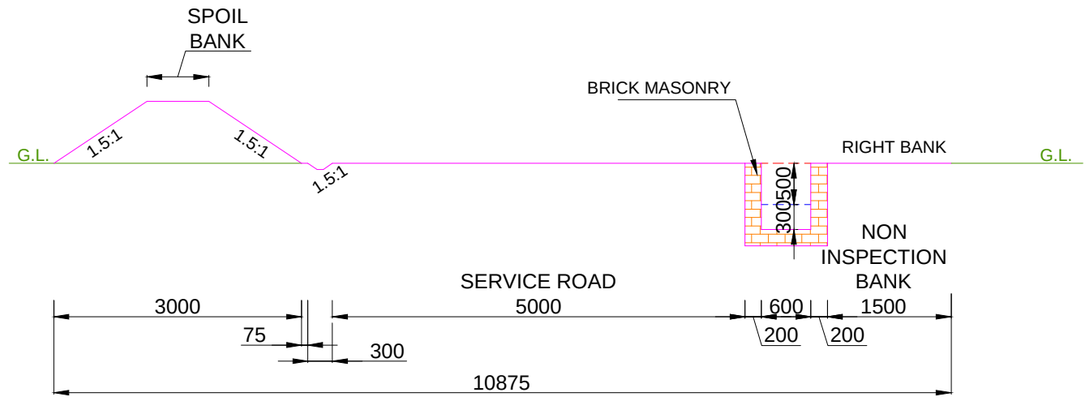
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(FC) 3 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL CUTTING




## DESIGN SECTION FROM CH: 1.700 KM TO CH: 2.950 KM

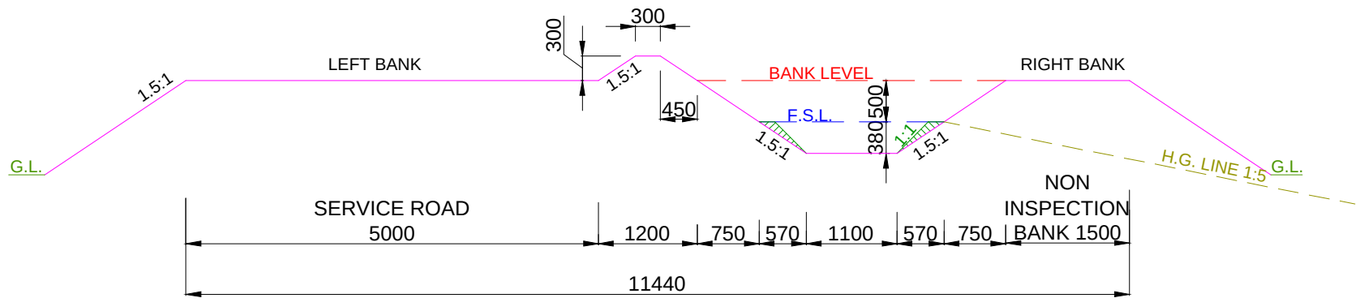
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 180 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(FC) 4 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 0.030 KM

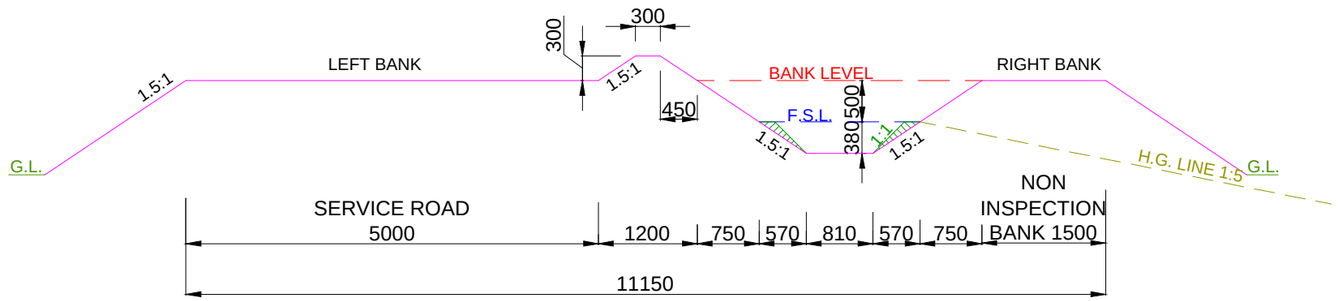
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 181 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(FF) 1 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.030 KM TO CH: 0.700 KM

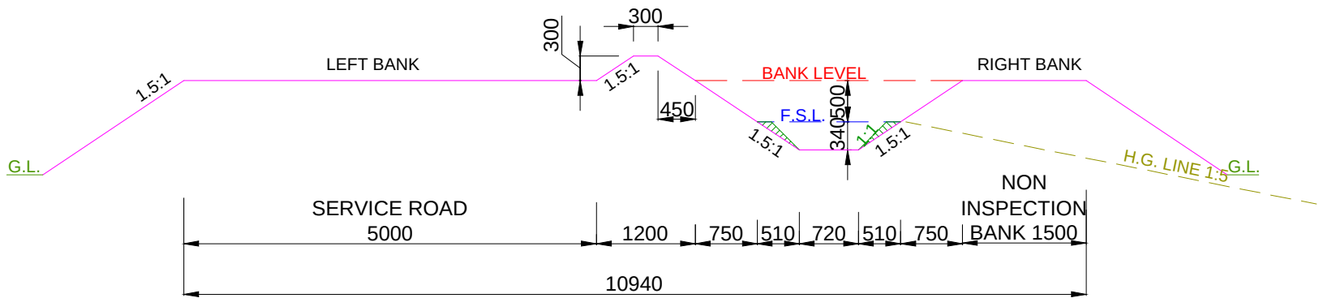
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 182 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(FF) 2 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 0.700 KM TO CH: 1.700 KM

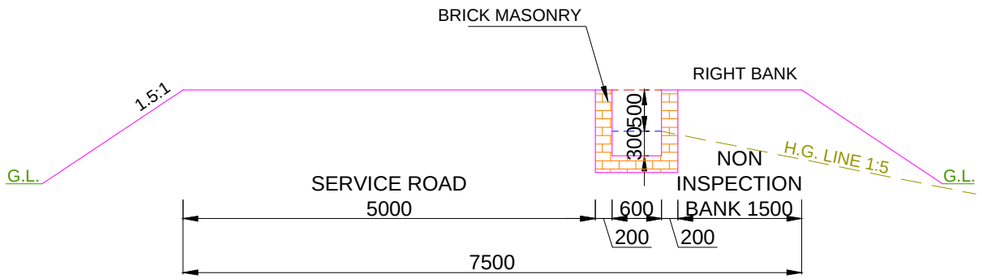
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(FF) 3 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR FULL FILLING




## DESIGN SECTION FROM CH: 1.700 KM TO CH: 2.950 KM

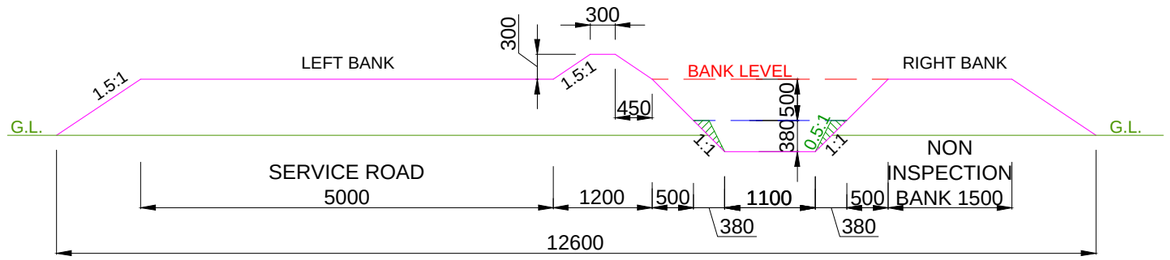
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(FF) 4 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.000 KM TO CH: 0.030 KM

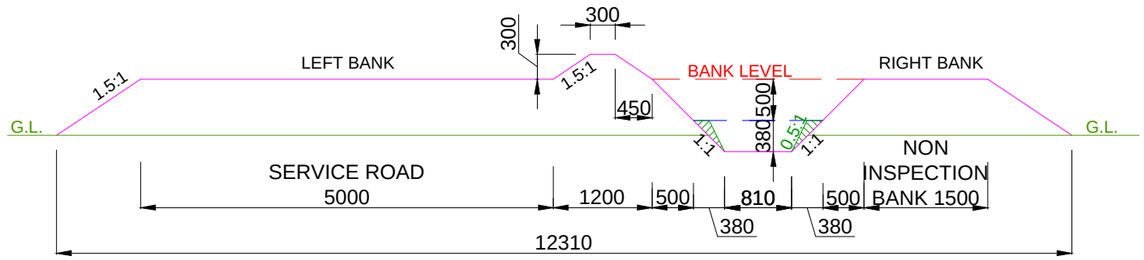
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 185 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(PCF) 1 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.030 KM TO CH: 0.700 KM

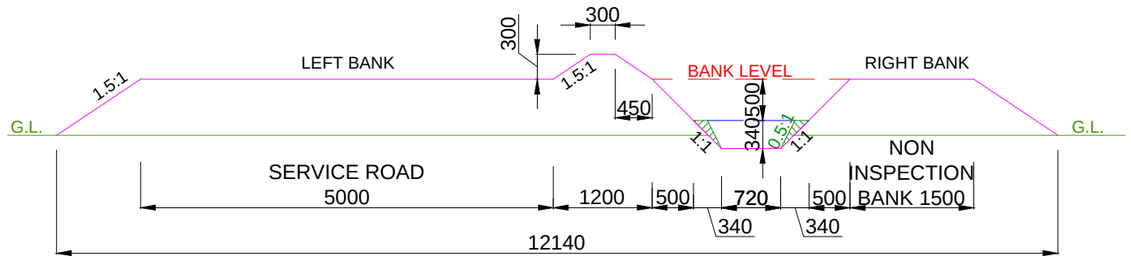
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 186 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(PCF) 2 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 0.700 KM TO CH: 1.700 KM

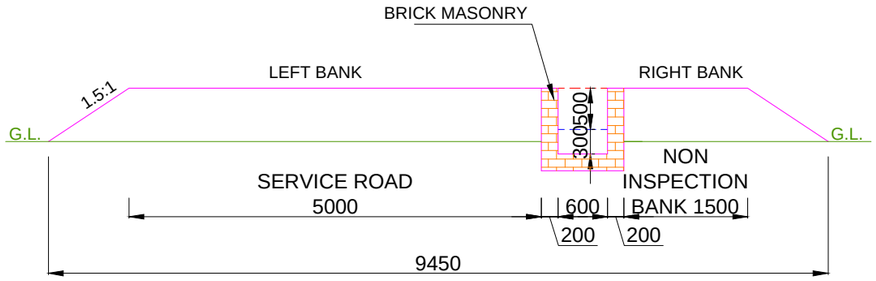
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(PCF) 3 of 4 |

# TYPICAL X - SECTION OF SOTHIDIH MINOR
# (OFFTAKE FROM RD - 12+065 KM. (RT), MAHUARY SUB-DISTRIBUTARY CANAL)

## DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING




## DESIGN SECTION FROM CH: 1.700 KM TO CH: 2.950 KM

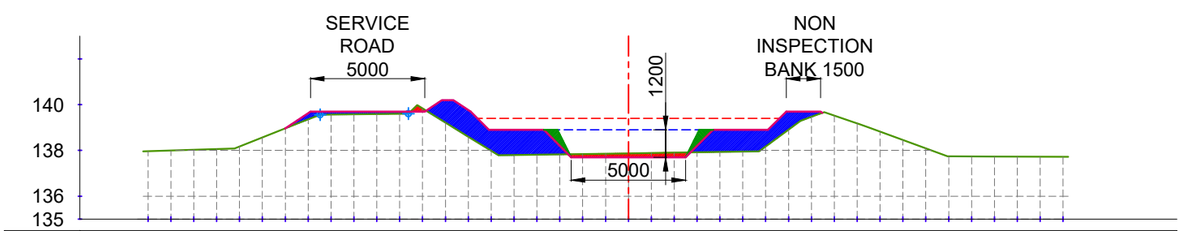
NOTE:-

1. THE BANK WIDTH HAS BEEN ADOPTED AS PER IS 7112 : 2002 (TABLE-1).
2. THE OFFTAKING CHAINAGE AND LENGTH OF THE CANAL HAS BEEN TAKEN AS PER ACTUAL SURVEY.
3. THIS IS A TYPICAL DRAWING, INSPECTION & NON-INSPECTION BANK SHALL BE TAKEN AS PER SITE CONDITIONS.

| LEGEND | | Prepared by :- WAPCOS LTD. | | |
|---|---|---|---|---|
| | CUT AREA | | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | FILL AREA | | Drawing Title :- | X SECTION OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | | | Drawing No. :- 188 | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC /TYP-(PCF) 4 of 4 |

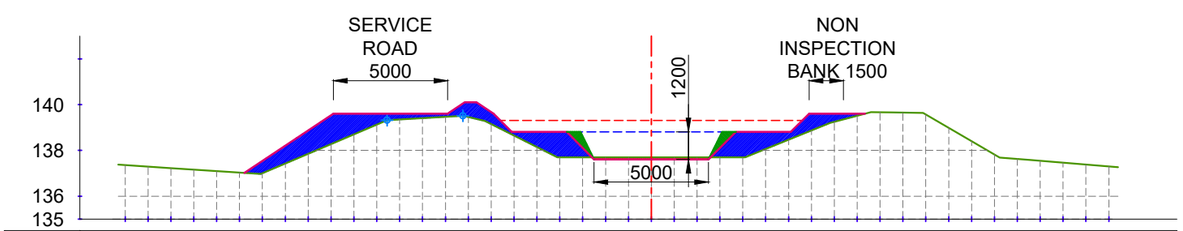
# *CROSS-SECTION*

# X SECTION OF MAHUARY SUB DY.



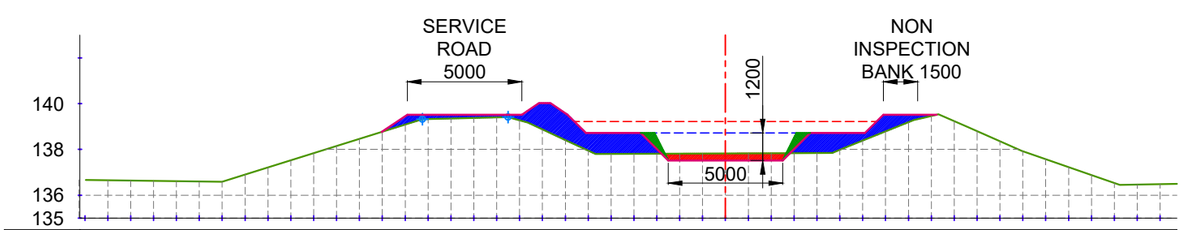

| | | |

# X SECTION OF MAHUARY SUB DY.



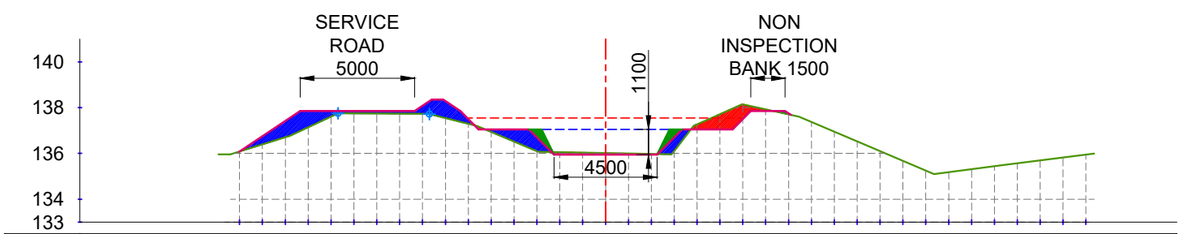

| | | |

# X SECTION OF MAHUARY SUB DY.



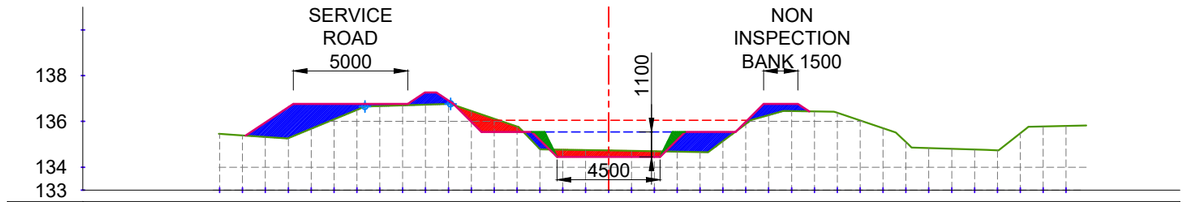

| | | |

# X SECTION OF MAHUARY SUB DY.



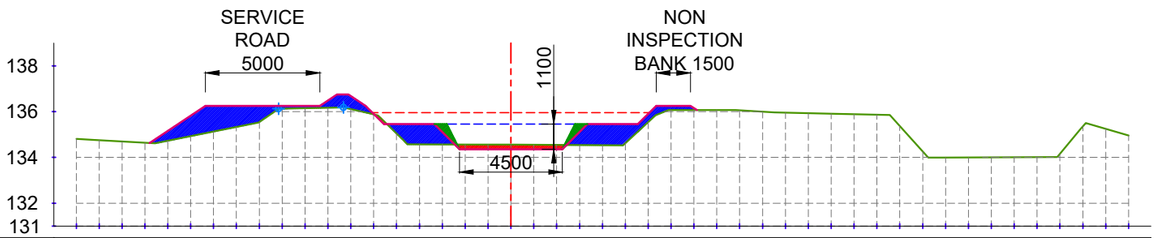

| | | |

# X SECTION OF MAHUARY SUB DY.




| | | |

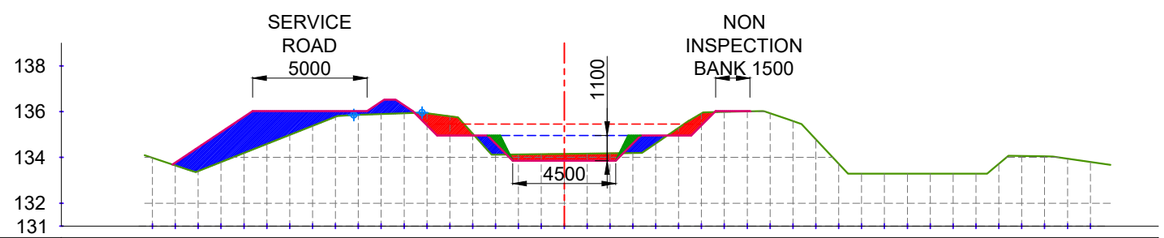
# X SECTION OF MAHUARY SUB DY.




| OFFSET (M) | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 134.808 | 134.753 | 134.696 | 134.640 | 134.726 | 134.928 | 135.129 | 135.332 | 135.547 | 136.126 | 136.149 | 136.171 | 136.113 | 135.878 | 135.041 | 134.573 | 134.568 | 134.564 | 134.559 | 134.554 | 134.550 | 134.545 | 134.540 | 134.535 | 134.622 | 135.539 | 136.067 | 136.068 | 136.069 | 136.060 | 135.998 | 135.955 | 135.933 | 135.912 | 135.890 | 135.869 | 135.377 | 134.265 | 133.993 | 133.997 | 134.002 | 134.006 | 134.010 | 134.155 | 135.352 | 135.250 | 134.957 |

CUTTING AREA (SQ.M) = 0.966
FILLING AREA (SQ.M) = 10.006

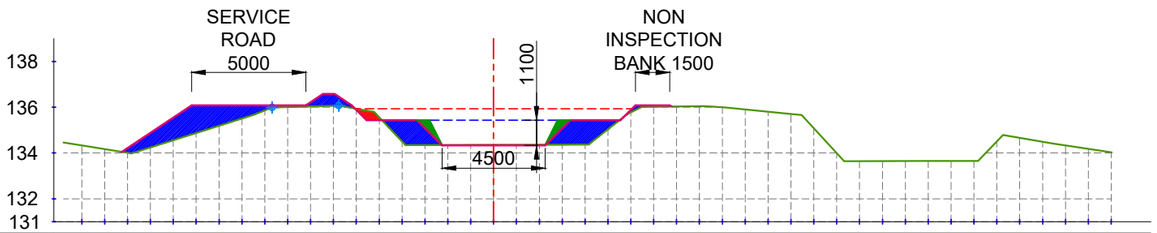
CH. (KM):- 2+100
DESIGNED BED LEVEL = 134.355 M




| OFFSET (M) | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 133.980 | 133.651 | 133.398 | 133.795 | 134.191 | 134.587 | 134.983 | 135.379 | 135.775 | 135.859 | 135.893 | 135.928 | 135.928 | 135.801 | 135.038 | 134.115 | 134.129 | 134.142 | 134.155 | 134.168 | 134.181 | 134.194 | 134.611 | 135.298 | 135.927 | 135.990 | 136.010 | 135.930 | 135.589 | 134.792 | 133.727 | 133.291 | 133.292 | 133.292 | 133.292 | 133.292 | 133.292 | 133.724 | 134.063 | 134.047 | 133.948 | 133.801 |

CUTTING AREA (SQ.M) = 3.753
FILLING AREA (SQ.M) = 9.806

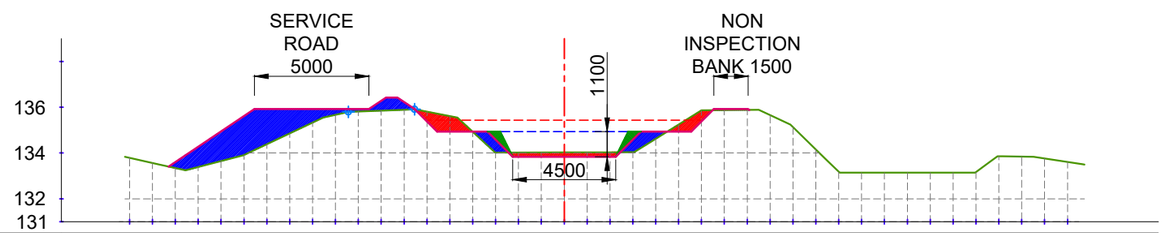
CH. (KM):- 2+300
DESIGNED BED LEVEL = 133.854 M




| OFFSET (M) | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 134.330 | 134.171 | 134.012 | 134.246 | 134.560 | 134.874 | 135.188 | 135.503 | 135.858 | 136.007 | 136.035 | 136.064 | 135.933 | 135.556 | 134.506 | 134.347 | 134.349 | 134.352 | 134.354 | 134.357 | 134.360 | 134.362 | 134.365 | 135.030 | 135.780 | 136.024 | 136.034 | 136.044 | 135.998 | 135.904 | 135.805 | 135.705 | 135.083 | 133.997 | 133.642 | 133.644 | 133.646 | 133.648 | 133.651 | 133.653 | 134.505 | 134.663 | 134.490 | 134.330 | 134.183 | 134.036 |

CUTTING AREA (SQ.M) = 0.392
FILLING AREA (SQ.M) = 9.556

CH. (KM):- 2+200
DESIGNED BED LEVEL = 134.333 M




| OFFSET (M) | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 133.784 | 133.564 | 133.343 | 133.387 | 133.649 | 133.914 | 134.386 | 134.858 | 135.331 | 135.667 | 135.811 | 135.851 | 135.891 | 135.803 | 135.608 | 134.925 | 134.019 | 134.022 | 134.025 | 134.028 | 134.031 | 134.034 | 134.037 | 134.623 | 135.244 | 135.863 | 135.872 | 135.881 | 135.656 | 135.133 | 134.155 | 133.177 | 133.140 | 133.140 | 133.141 | 133.141 | 133.168 | 133.861 | 133.845 | 133.763 | 133.612 |

CUTTING AREA (SQ.M) = 2.812
FILLING AREA (SQ.M) = 9.812

CH. (KM):- 2+400
DESIGNED BED LEVEL = 133.832 M

## LEGEND

CUT AREA

FILL AREA

EXISTING BED LINE

F.S.L.

DESIGNED BED LINE

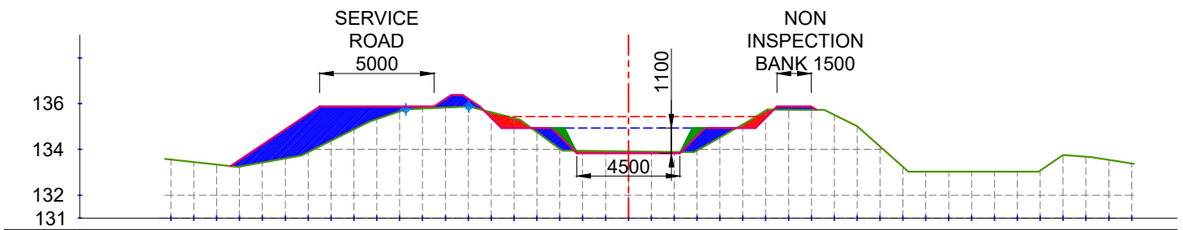
H.G. LINE

Prepared by :-

WAPCOS LTD.

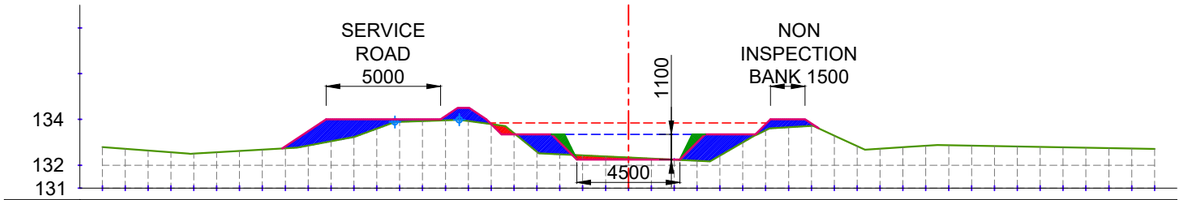
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 6 of 51 |

# X SECTION OF MAHUARY SUB DY.



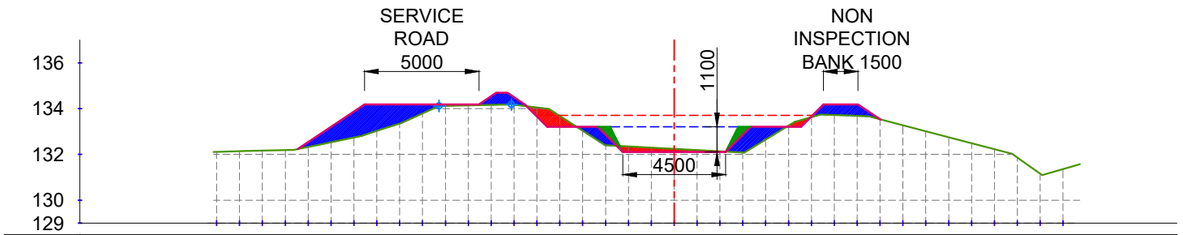

| | | |

# X SECTION OF MAHUARY SUB DY.



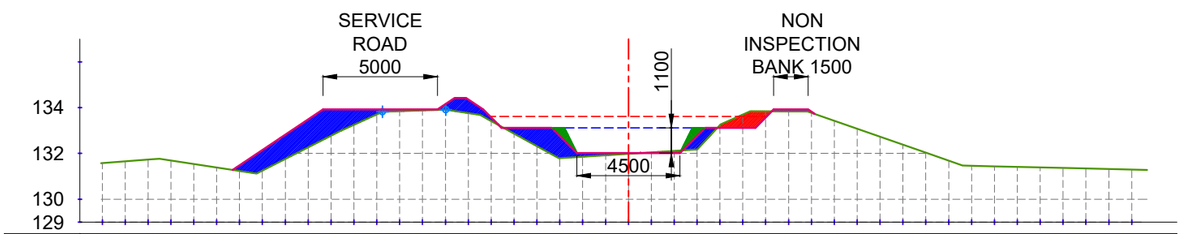

| | | |

# X SECTION OF MAHUARY SUB DY.



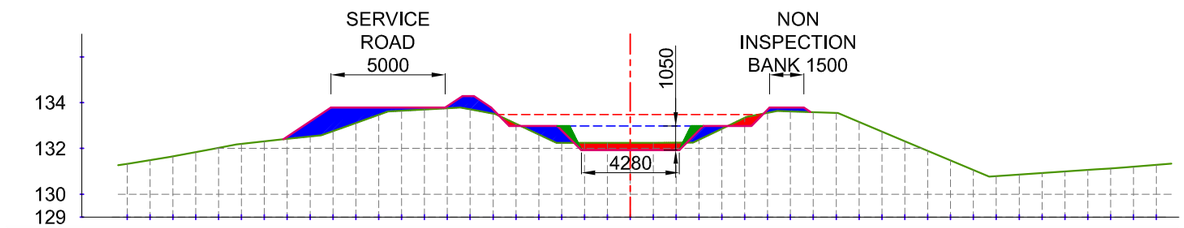

| | | |

# X SECTION OF MAHUARY SUB DY.




| | | |

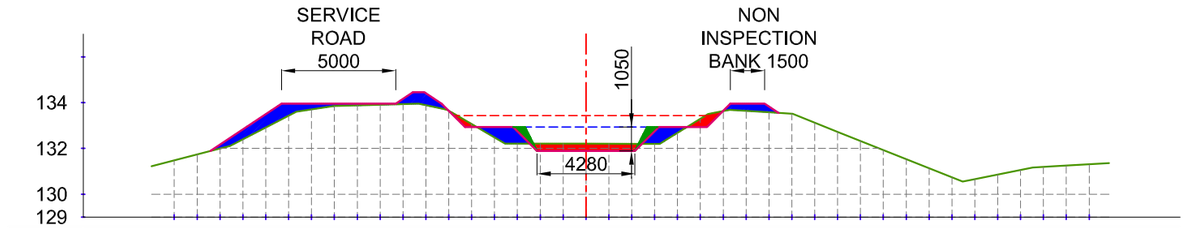
# X SECTION OF MAHUARY SUB DY.




| EXIST. LEVEL (M) | 131.326 | 131.488 | 131.653 | 131.841 | 132.029 | 132.201 | 132.309 | 132.417 | 132.523 | 132.758 | 133.112 | 133.466 | 133.643 | 133.699 | 133.755 | 133.707 | 133.522 | 133.078 | 132.606 | 132.239 | 132.241 | 132.243 | 132.245 | 132.247 | 132.249 | 132.377 | 132.860 | 133.343 | 133.557 | 133.620 | 133.585 | 133.551 | 133.159 | 132.739 | 132.319 | 131.899 | 131.479 | 131.060 | 130.793 | 130.859 | 130.926 | 130.992 | 131.059 | 131.127 | 131.204 | 131.281 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -22 | -21 | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |

CUTTING AREA (SQ.M) = 1.884
FILLING AREA (SQ.M) = 5.449

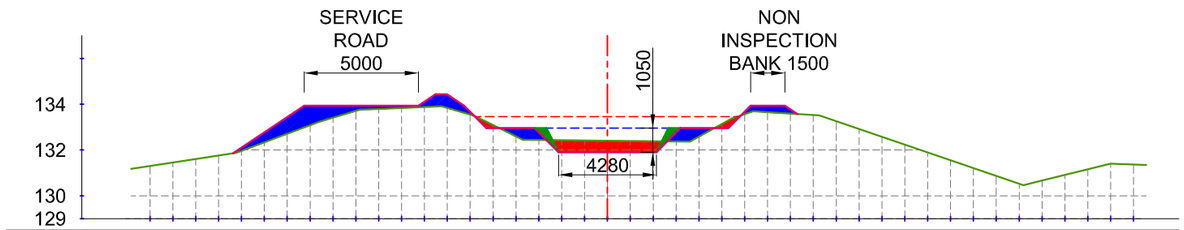
CH. (KM):- 4+100
DESIGNED BED LEVEL = 131.930 M




| EXIST. LEVEL (M) | 131.481 | 131.738 | 131.995 | 132.401 | 132.918 | 133.435 | 133.707 | 133.850 | 133.877 | 133.904 | 133.932 | 133.884 | 133.648 | 133.064 | 132.479 | 132.209 | 132.208 | 132.207 | 132.205 | 132.204 | 132.203 | 132.201 | 132.677 | 133.292 | 133.631 | 133.643 | 133.579 | 133.516 | 133.121 | 132.716 | 132.320 | 131.924 | 131.529 | 131.133 | 130.738 | 130.656 | 130.856 | 131.055 | 131.189 | 131.248 | 131.305 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |

CUTTING AREA (SQ.M) = 2.030
FILLING AREA (SQ.M) = 5.334

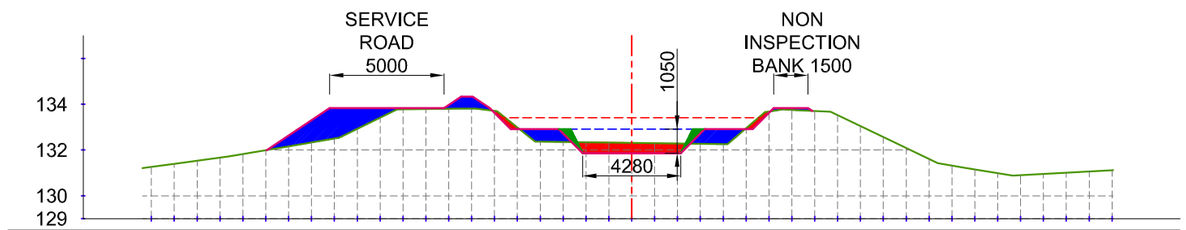
CH. (KM):- 4+300
DESIGNED BED LEVEL = 131.885 M




| EXIST. LEVEL (M) | 131.307 | 131.459 | 131.611 | 131.763 | 131.965 | 132.339 | 132.712 | 133.086 | 133.414 | 133.711 | 133.797 | 133.840 | 133.883 | 133.843 | 133.551 | 133.088 | 132.595 | 132.438 | 132.427 | 132.415 | 132.404 | 132.393 | 132.382 | 132.370 | 132.584 | 133.139 | 133.567 | 133.652 | 133.589 | 133.526 | 133.257 | 132.917 | 132.576 | 132.235 | 131.894 | 131.553 | 131.212 | 130.870 | 130.529 | 130.665 | 130.910 | 131.154 | 131.399 | 131.365 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |

CUTTING AREA (SQ.M) = 2.604
FILLING AREA (SQ.M) = 5.942

CH. (KM):- 4+200
DESIGNED BED LEVEL = 131.908 M




| EXIST. LEVEL (M) | 131.264 | 131.398 | 131.533 | 131.668 | 131.823 | 131.992 | 132.160 | 132.331 | 132.501 | 132.924 | 133.417 | 133.782 | 133.792 | 133.803 | 133.813 | 133.710 | 132.990 | 132.371 | 132.357 | 132.342 | 132.328 | 132.314 | 132.299 | 132.285 | 132.271 | 132.256 | 132.948 | 133.682 | 133.753 | 133.702 | 133.518 | 133.040 | 132.562 | 132.084 | 131.606 | 131.320 | 131.155 | 130.991 | 130.901 | 130.955 | 131.008 | 131.062 | 131.116 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -21 | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |

CUTTING AREA (SQ.M) = 2.459
FILLING AREA (SQ.M) = 7.077

CH. (KM):- 4+400
DESIGNED BED LEVEL = 131.863 M

## LEGEND

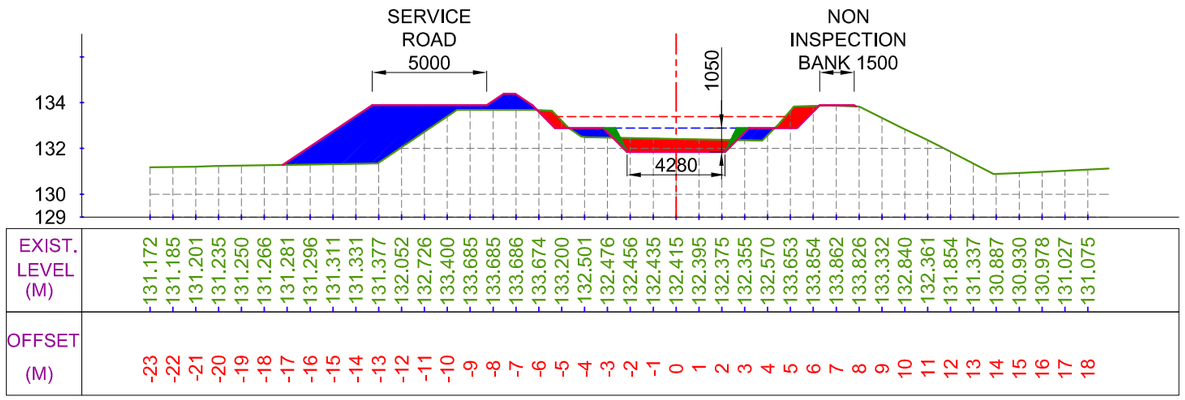
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

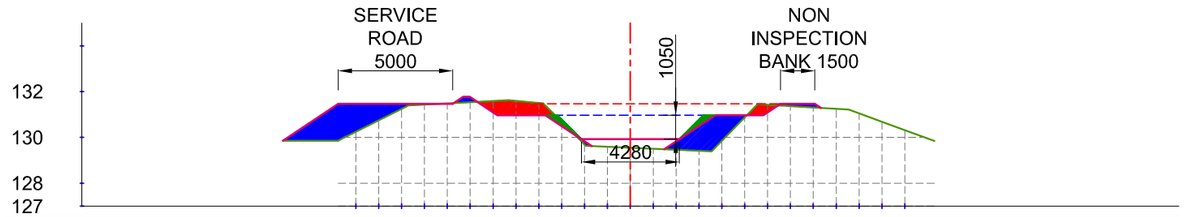
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 11 of 51 |

# X SECTION OF MAHUARY SUB DY.




| | | |

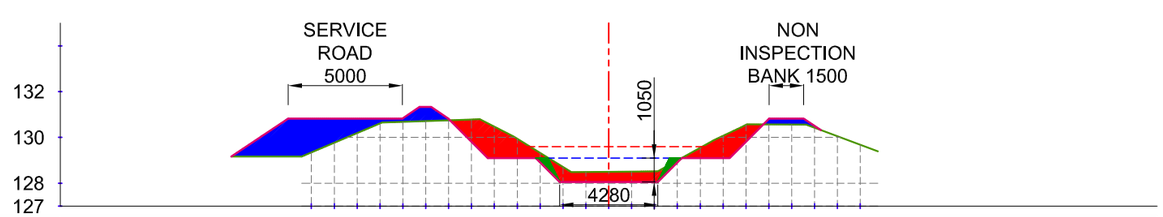
# X SECTION OF MAHUARY SUB DY.




| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 130.749 | 131.249 | 131.438 | 131.489 | 131.540 | 131.592 | 131.595 | 131.503 | 130.676 | 129.689 | 129.590 | 129.547 | 129.505 | 129.462 | 129.419 | 129.848 | 130.871 | 131.426 | 131.369 | 131.310 | 131.251 | 131.053 | 130.686 | 130.318 | 129.950 |
| OFFSET (M) | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

CUTTING AREA (SQ.M) = 1.981
FILLING AREA (SQ.M) = 7.726

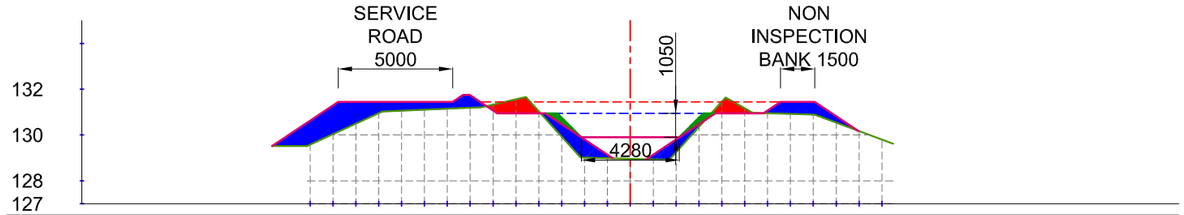
CH. (KM):- 4+900
DESIGNED BED LEVEL = 129.922 M




| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 129.347 | 129.768 | 130.189 | 130.611 | 130.679 | 130.713 | 130.747 | 130.781 | 130.467 | 129.939 | 129.322 | 128.704 | 128.486 | 128.497 | 128.507 | 128.518 | 128.995 | 129.548 | 130.072 | 130.550 | 130.566 | 130.565 | 130.426 | 130.053 | 129.680 |
| OFFSET (M) | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

CUTTING AREA (SQ.M) = 7.895
FILLING AREA (SQ.M) = 7.775

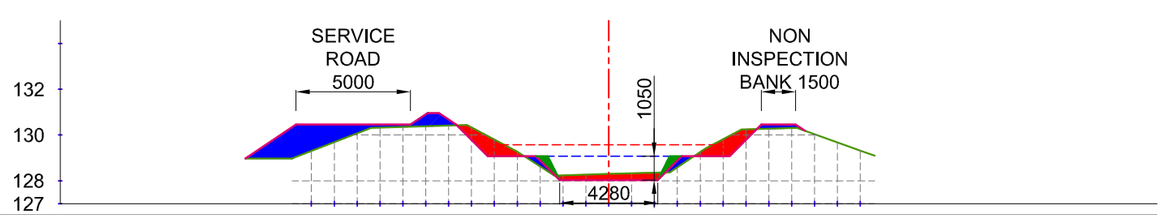
CH. (KM):- 5+100
DESIGNED BED LEVEL = 128.049 M




| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 129.578 | 130.037 | 130.495 | 130.953 | 131.061 | 131.104 | 131.147 | 131.189 | 131.330 | 131.562 | 131.034 | 129.934 | 129.012 | 128.986 | 128.961 | 128.935 | 129.250 | 130.357 | 131.464 | 131.173 | 130.955 | 130.924 | 130.893 | 130.539 | 130.169 | 129.799 |
| OFFSET (M) | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

CUTTING AREA (SQ.M) = 1.687
FILLING AREA (SQ.M) = 9.667

CH. (KM):- 5+000
DESIGNED BED LEVEL = 129.900 M




| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 129.303 | 129.691 | 130.079 | 130.328 | 130.357 | 130.387 | 130.417 | 130.337 | 129.805 | 129.268 | 128.629 | 128.240 | 128.269 | 128.298 | 128.327 | 128.356 | 128.590 | 129.261 | 129.817 | 130.247 | 130.276 | 130.305 | 130.035 | 129.677 | 129.319 |
| OFFSET (M) | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

CUTTING AREA (SQ.M) = 3.991
FILLING AREA (SQ.M) = 5.917

CH. (KM):- 5+200
DESIGNED BED LEVEL = 128.026 M

## LEGEND

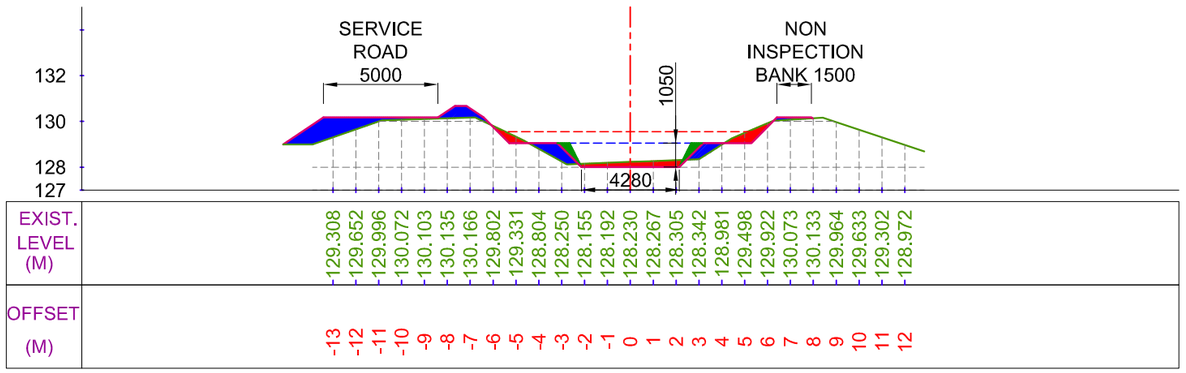
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

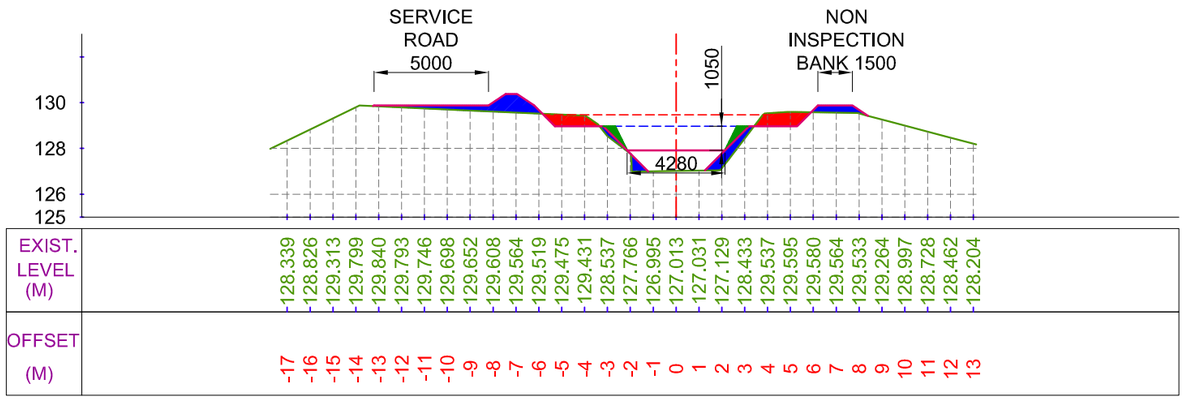
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 13 of 51 |

# X SECTION OF MAHUARY SUB DY.



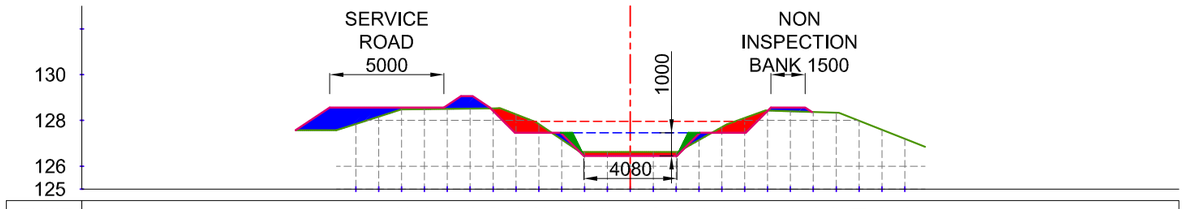

| | | |

# X SECTION OF MAHUARY SUB DY.



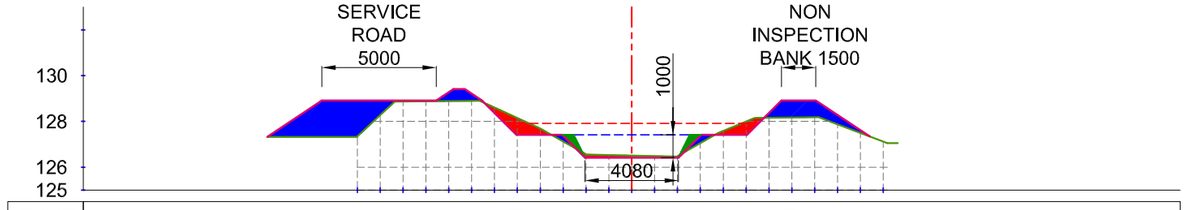

| | | |

# X SECTION OF MAHUARY SUB DY.



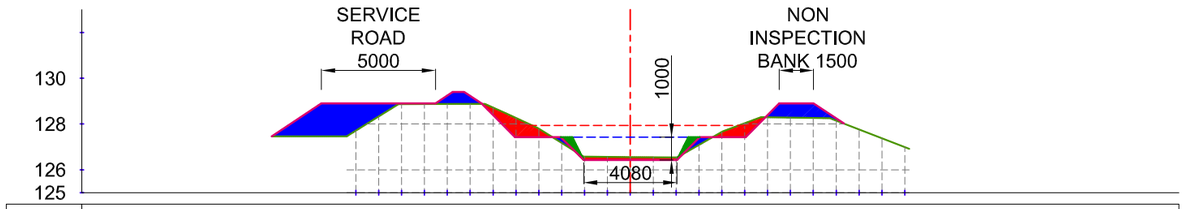

CUTTING AREA (SQ.M) = 2.859
FILLING AREA (SQ.M) = 3.997

CH. (KM):- 6+100
DESIGNED BED LEVEL = 126.454 M



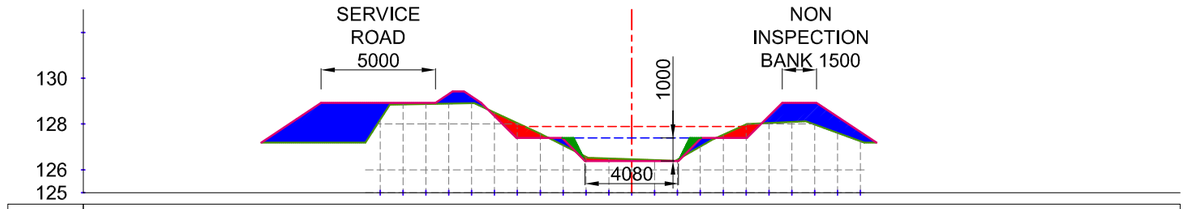

CUTTING AREA (SQ.M) = 2.245
FILLING AREA (SQ.M) = 9.018

CH. (KM):- 6+300
DESIGNED BED LEVEL = 126.410 M




CUTTING AREA (SQ.M) = 2.695
FILLING AREA (SQ.M) = 7.338

CH. (KM):- 6+200
DESIGNED BED LEVEL = 126.432 M




CUTTING AREA (SQ.M) = 1.815
FILLING AREA (SQ.M) = 11.076

CH. (KM):- 6+400
DESIGNED BED LEVEL = 126.388 M

## LEGEND

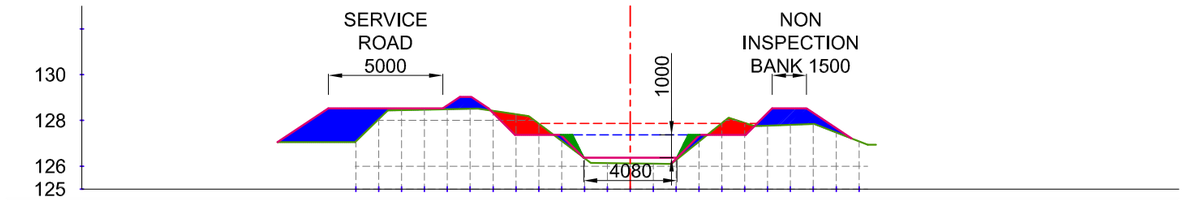
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

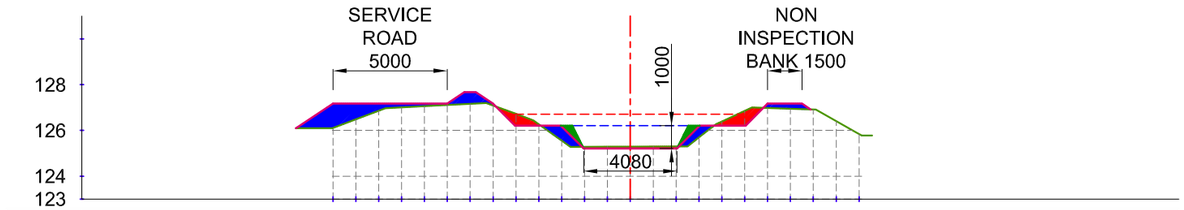
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- |

# X SECTION OF MAHUARY SUB DY.



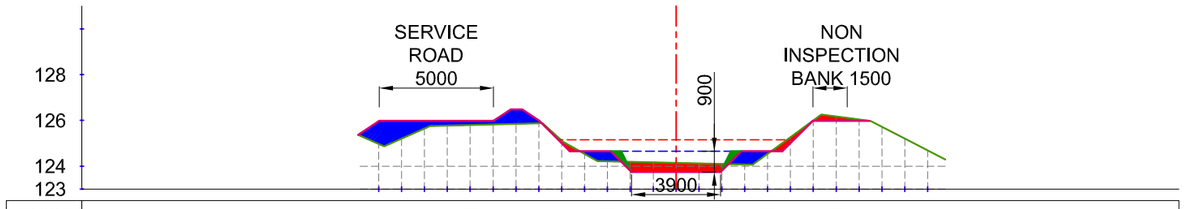

| | | |

# X SECTION OF MAHUARY SUB DY.




| | | |

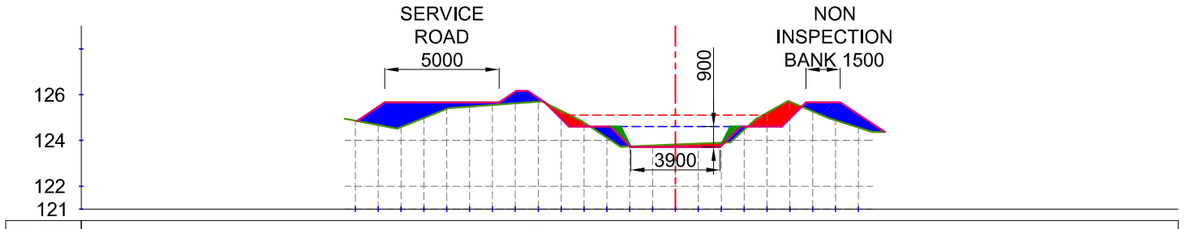
# X SECTION OF MAHUARY SUB DY.




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 124.973 | 125.202 | 125.646 | 125.775 | 125.801 | 125.826 | 125.852 | 125.878 | 125.118 | 124.537 | 124.211 | 124.188 | 124.165 | 124.142 | 124.118 | 124.095 | 124.072 | 124.541 | 125.265 | 126.000 | 126.171 | 126.037 | 125.720 | 125.203 | 124.687 |
| OFFSET (M) | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

CUTTING AREA (SQ.M) = 2.473
FILLING AREA (SQ.M) = 4.642

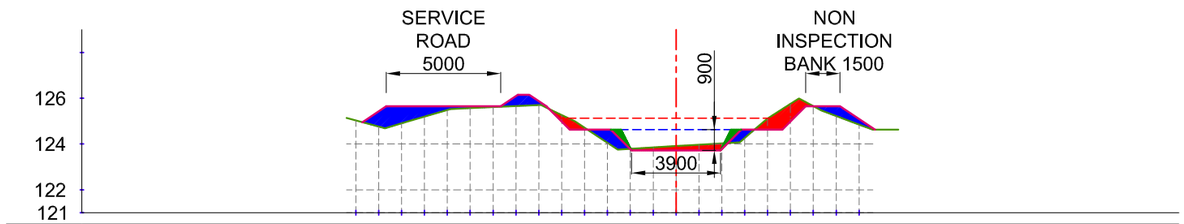
CH. (KM):- 7+300
DESIGNED BED LEVEL = 123.749 M




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 124.859 | 124.668 | 124.579 | 124.977 | 125.376 | 125.477 | 125.549 | 125.620 | 125.691 | 125.293 | 124.780 | 124.122 | 123.739 | 123.779 | 123.819 | 123.859 | 123.899 | 124.459 | 125.203 | 125.694 | 125.274 | 124.882 | 124.562 | |
| OFFSET (M) | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |

CUTTING AREA (SQ.M) = 2.265
FILLING AREA (SQ.M) = 6.445

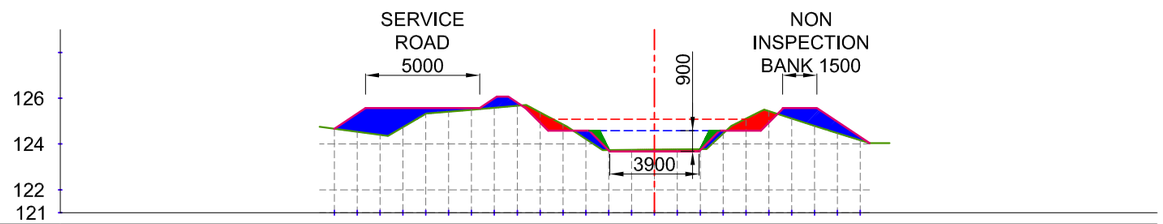
CH. (KM):- 7+500
DESIGNED BED LEVEL = 123.704 M




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 125.029 | 124.760 | 124.904 | 125.198 | 125.493 | 125.570 | 125.615 | 125.660 | 125.704 | 125.266 | 124.710 | 124.056 | 123.791 | 123.850 | 123.909 | 123.967 | 124.026 | 124.259 | 125.117 | 125.754 | 125.654 | 125.222 | 124.848 | |
| OFFSET (M) | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |

CUTTING AREA (SQ.M) = 2.447
FILLING AREA (SQ.M) = 4.396

CH. (KM):- 7+400
DESIGNED BED LEVEL = 123.727 M




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 124.670 | 124.538 | 124.405 | 124.736 | 125.315 | 125.412 | 125.498 | 125.583 | 125.668 | 125.381 | 124.855 | 124.220 | 123.737 | 123.747 | 123.758 | 123.768 | 123.779 | 124.459 | 125.108 | 125.440 | 125.118 | 124.795 | 124.476 | 124.161 |
| OFFSET (M) | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

CUTTING AREA (SQ.M) = 2.093
FILLING AREA (SQ.M) = 6.371

CH. (KM):- 7+600
DESIGNED BED LEVEL = 123.682 M

## LEGEND

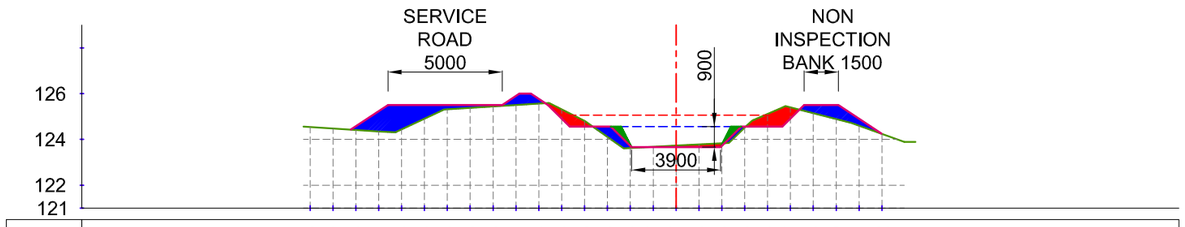
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

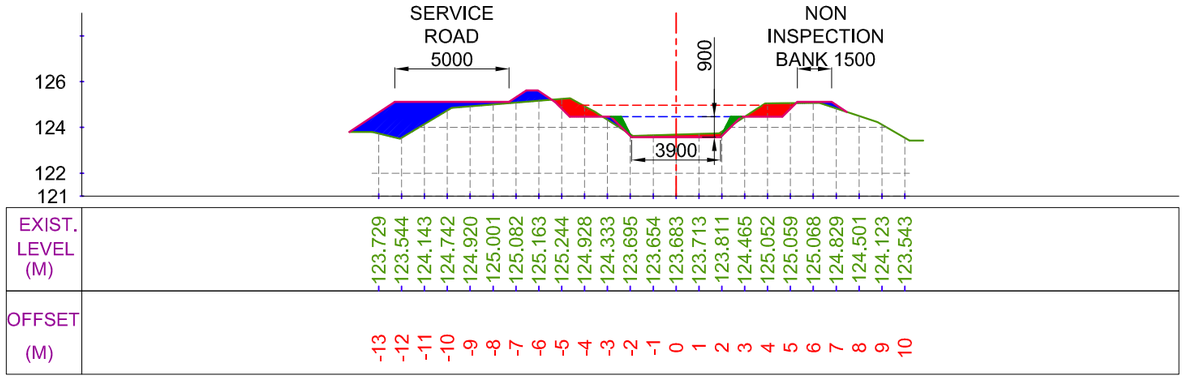
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 19 of 51 |

# X SECTION OF MAHUARY SUB DY.



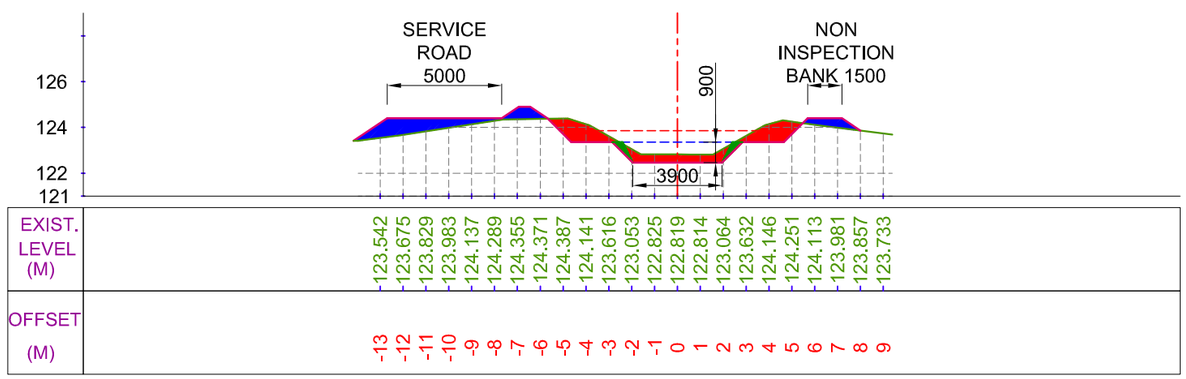

| | | |

# X SECTION OF MAHUARY SUB DY.



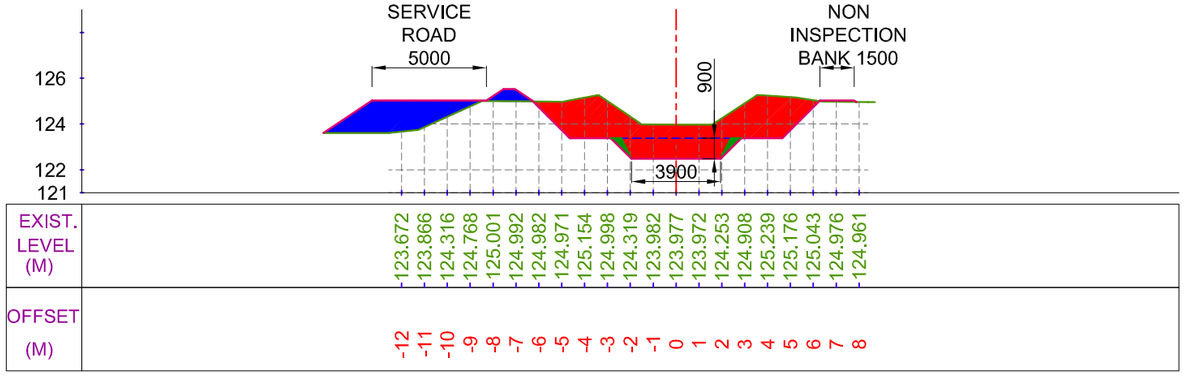

CUTTING AREA (SQ.M) = 2.225
FILLING AREA (SQ.M) = 5.265

CH. (KM):- 8+100
DESIGNED BED LEVEL = 123.571 M



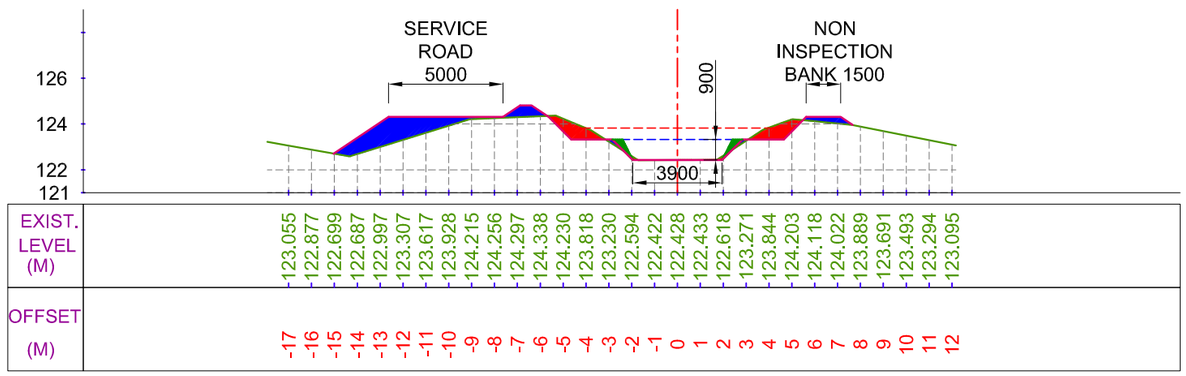

CUTTING AREA (SQ.M) = 4.968
FILLING AREA (SQ.M) = 4.256

CH. (KM):- 8+300
DESIGNED BED LEVEL = 122.460 M




CUTTING AREA (SQ.M) = 17.575
FILLING AREA (SQ.M) = 6.862

CH. (KM):- 8+200
DESIGNED BED LEVEL = 122.482 M




CUTTING AREA (SQ.M) = 2.155
FILLING AREA (SQ.M) = 5.291

CH. (KM):- 8+400
DESIGNED BED LEVEL = 122.437 M

## LEGEND

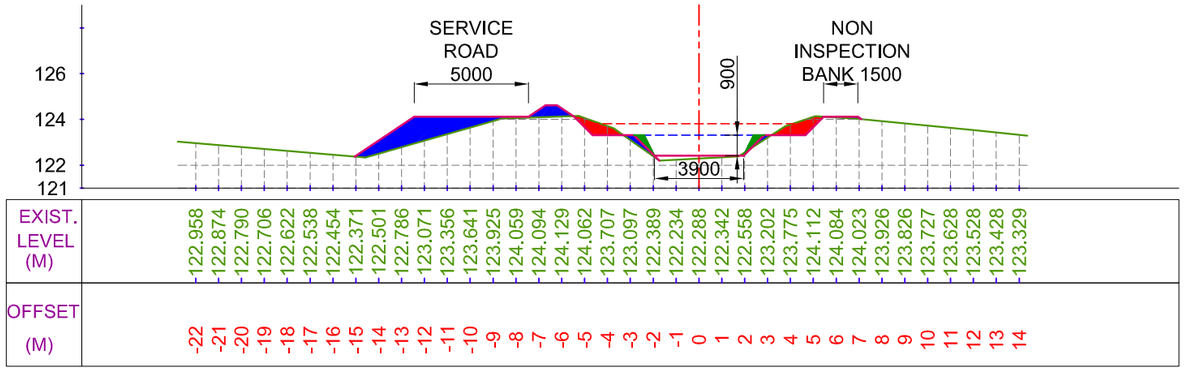
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

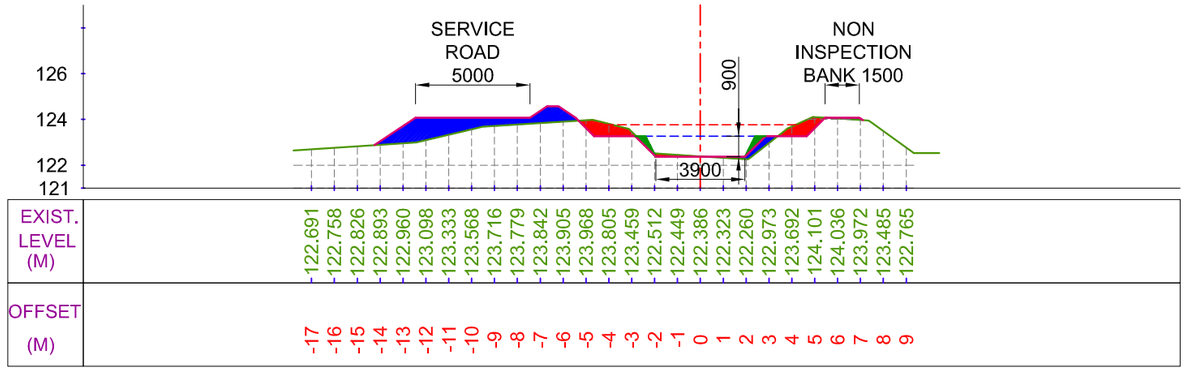
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 21 of 51 |

# X SECTION OF MAHUARY SUB DY.



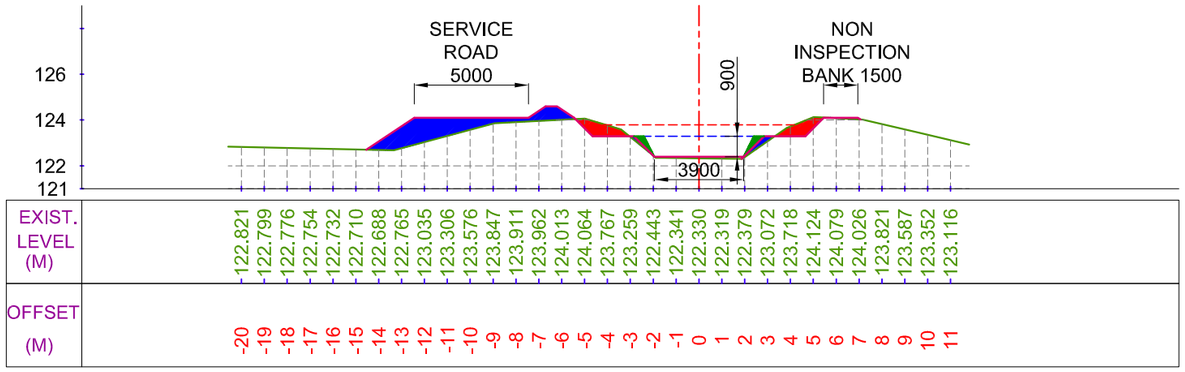

CUTTING AREA (SQ.M) = 1.671
FILLING AREA (SQ.M) = 5.237

CH. (KM):- 8+500
DESIGNED BED LEVEL = 122.415 M



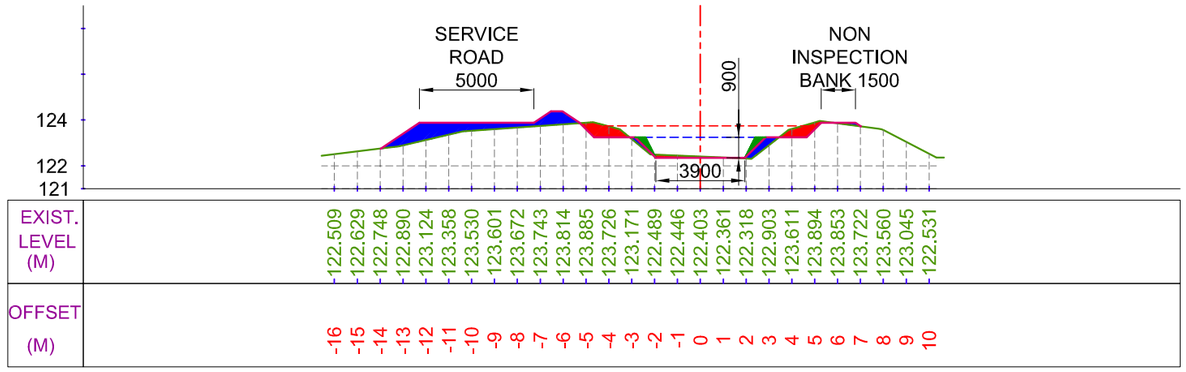

CUTTING AREA (SQ.M) = 2.054
FILLING AREA (SQ.M) = 5.362

CH. (KM):- 8+700
DESIGNED BED LEVEL = 122.371 M




CUTTING AREA (SQ.M) = 1.769
FILLING AREA (SQ.M) = 5.351

CH. (KM):- 8+600
DESIGNED BED LEVEL = 122.393 M




CUTTING AREA (SQ.M) = 1.704
FILLING AREA (SQ.M) = 4.141

CH. (KM):- 8+800
DESIGNED BED LEVEL = 122.348 M

## LEGEND

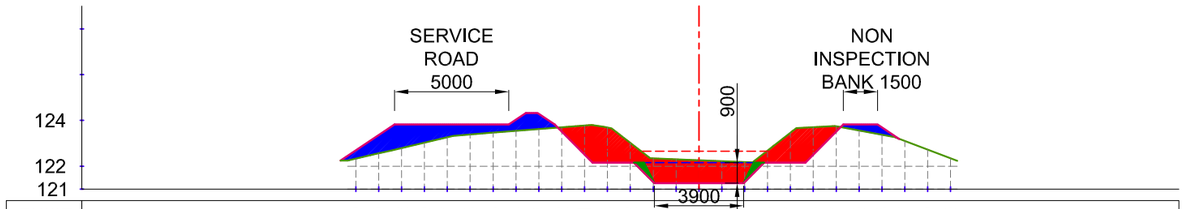
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

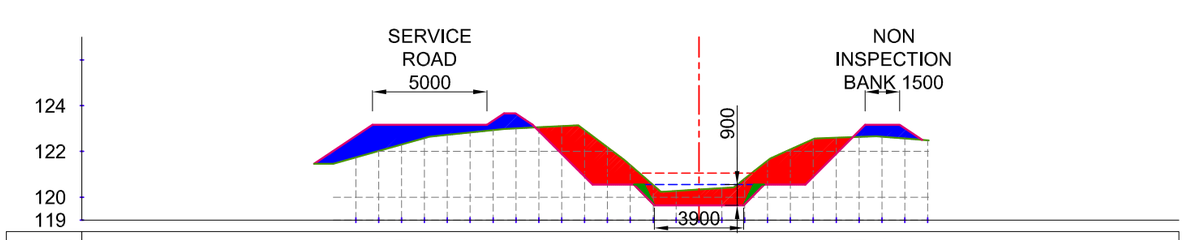
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 22 of 51 |

# X SECTION OF MAHUARY SUB DY.



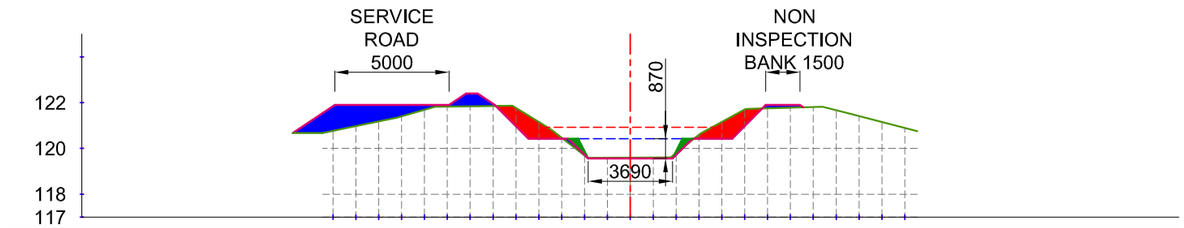

| | | |

# X SECTION OF MAHUARY SUB DY.




| | | |

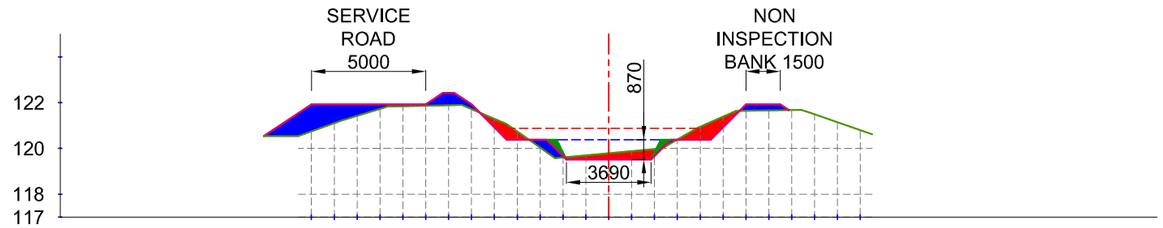
# X SECTION OF MAHUARY SUB DY.




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 120.768 | 120.975 | 121.181 | 121.404 | 121.689 | 121.828 | 121.843 | 121.857 | 121.770 | 121.152 | 120.465 | 119.686 | 119.590 | 119.595 | 119.601 | 119.792 | 120.601 | 121.160 | 121.702 | 121.751 | 121.780 | 121.810 | 121.668 | 121.409 | 121.149 | 120.890 |
| OFFSET (M) | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

CUTTING AREA (SQ.M) = 3.452
FILLING AREA (SQ.M) = 4.942

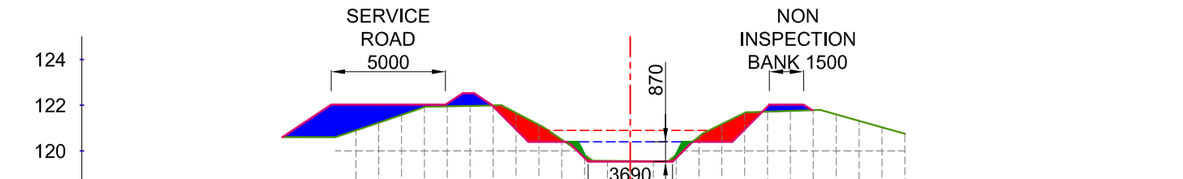
CH. (KM):- 9+700
DESIGNED BED LEVEL = 119.557 M




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 120.742 | 121.102 | 121.424 | 121.724 | 121.842 | 121.864 | 121.886 | 121.718 | 121.294 | 120.739 | 120.034 | 119.605 | 119.697 | 119.790 | 119.883 | 119.976 | 120.387 | 120.948 | 121.391 | 121.641 | 121.659 | 121.678 | 121.485 | 121.142 | 120.799 |
| OFFSET (M) | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

CUTTING AREA (SQ.M) = 2.914
FILLING AREA (SQ.M) = 5.392

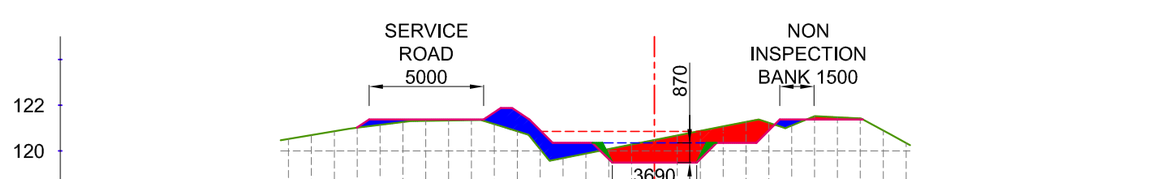
CH. (KM):- 9+900
DESIGNED BED LEVEL = 119.513 M




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 120.902 | 121.236 | 121.579 | 121.926 | 121.956 | 121.976 | 121.995 | 121.670 | 121.147 | 120.501 | 119.822 | 119.572 | 119.562 | 119.553 | 119.828 | 120.634 | 121.179 | 121.666 | 121.721 | 121.753 | 121.785 | 121.598 | 121.317 | 121.036 | 120.756 |
| OFFSET (M) | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

CUTTING AREA (SQ.M) = 3.603
FILLING AREA (SQ.M) = 6.128

CH. (KM):- 9+800
DESIGNED BED LEVEL = 119.535 M




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 120.523 | 120.691 | 120.859 | 121.025 | 121.146 | 121.267 | 121.321 | 121.338 | 121.354 | 121.177 | 120.864 | 120.087 | 119.690 | 119.888 | 120.086 | 120.283 | 120.481 | 120.679 | 120.877 | 121.075 | 121.273 | 121.235 | 121.112 | 121.521 | 121.476 | 121.429 | 120.896 | 120.353 |
| OFFSET (M) | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

CUTTING AREA (SQ.M) = 6.511
FILLING AREA (SQ.M) = 4.131

CH. (KM):- 10+000
DESIGNED BED LEVEL = 119.491 M

## LEGEND

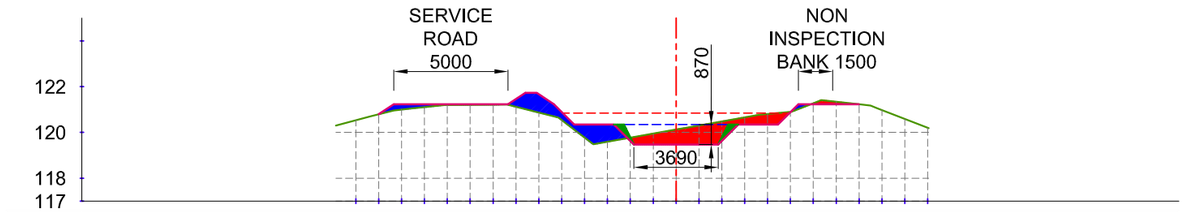
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

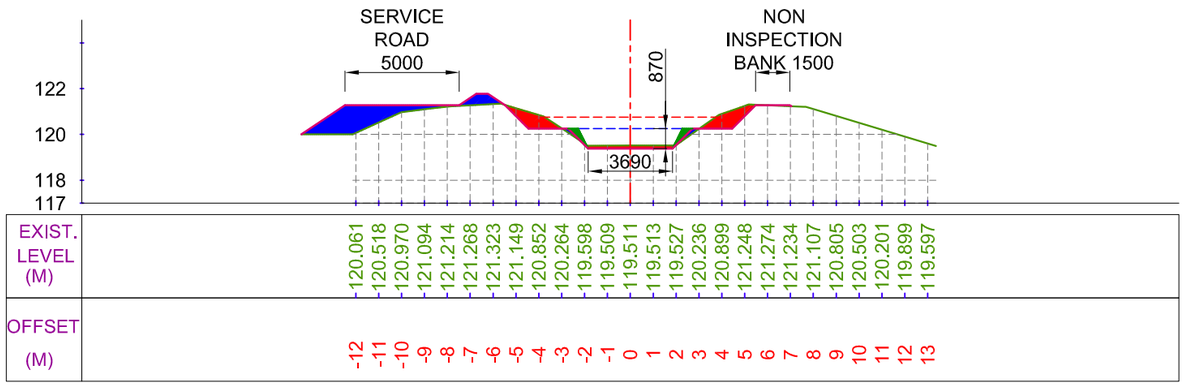
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 25 of 51 |

# X SECTION OF MAHUARY SUB DY.




| | | |

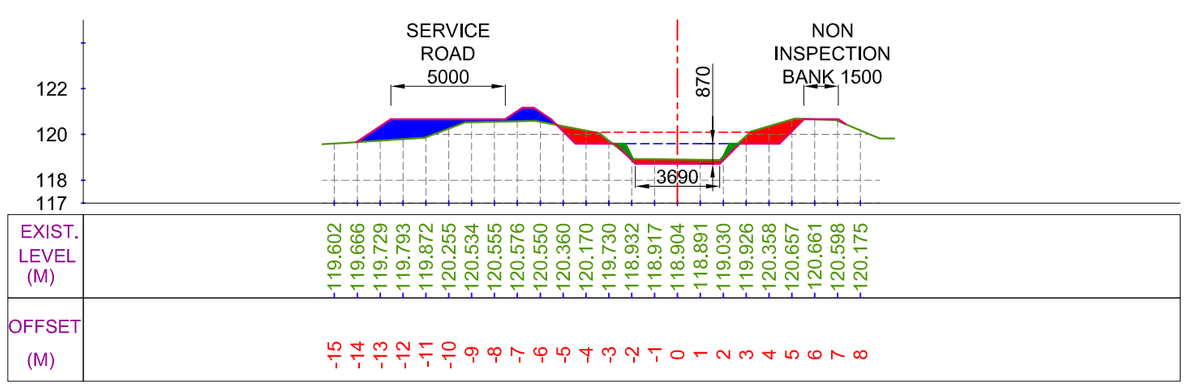
# X SECTION OF MAHUARY SUB DY.




| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 120.061 | 120.518 | 120.970 | 121.094 | 121.214 | 121.268 | 121.323 | 121.149 | 120.852 | 120.264 | 119.598 | 119.509 | 119.511 | 119.513 | 119.527 | 120.236 | 120.899 | 121.248 | 121.274 | 121.234 | 121.107 | 120.805 | 120.503 | 120.201 | 119.899 | 119.597 |
| OFFSET (M) | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

CUTTING AREA (SQ.M) = 2.665
FILLING AREA (SQ.M) = 4.492

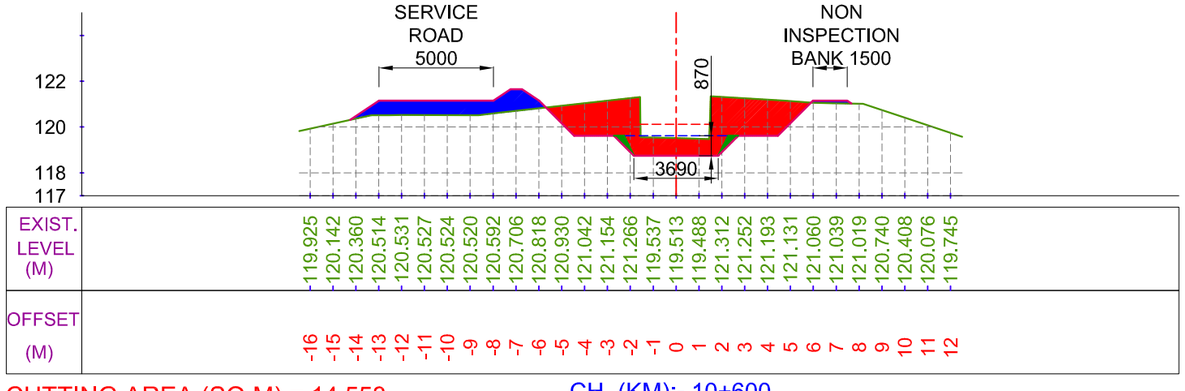
CH. (KM):- 10+500
DESIGNED BED LEVEL = 119.380 M




| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 119.602 | 119.666 | 119.729 | 119.793 | 119.872 | 120.255 | 120.534 | 120.555 | 120.576 | 120.550 | 120.360 | 120.170 | 119.730 | 118.932 | 118.917 | 118.904 | 118.891 | 119.030 | 119.926 | 120.358 | 120.657 | 120.661 | 120.598 | 120.175 | | |
| OFFSET (M) | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |

CUTTING AREA (SQ.M) = 3.245
FILLING AREA (SQ.M) = 3.930

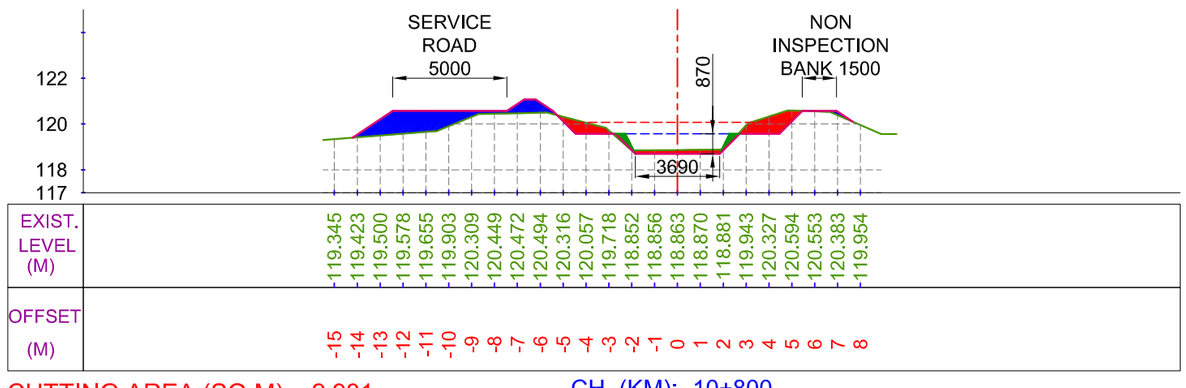
CH. (KM):- 10+700
DESIGNED BED LEVEL = 118.725 M




| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 119.925 | 120.142 | 120.360 | 120.514 | 120.531 | 120.527 | 120.524 | 120.520 | 120.592 | 120.706 | 120.818 | 120.930 | 121.042 | 121.154 | 121.266 | 119.537 | 119.513 | 119.488 | 121.312 | 121.252 | 121.193 | 121.131 | 121.060 | 121.039 | 121.019 | 120.740 | 120.408 | 120.076 | 119.745 |
| OFFSET (M) | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

CUTTING AREA (SQ.M) = 14.558
FILLING AREA (SQ.M) = 5.188

CH. (KM):- 10+600
DESIGNED BED LEVEL = 118.747 M




| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 119.345 | 119.423 | 119.500 | 119.578 | 119.655 | 119.903 | 120.309 | 120.449 | 120.472 | 120.494 | 120.316 | 120.057 | 119.718 | 118.852 | 118.856 | 118.863 | 118.870 | 118.881 | 119.943 | 120.327 | 120.594 | 120.553 | 120.383 | 119.954 | | |
| OFFSET (M) | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |

CUTTING AREA (SQ.M) = 2.981
FILLING AREA (SQ.M) = 4.812

CH. (KM):- 10+800
DESIGNED BED LEVEL = 118.703 M

## LEGEND

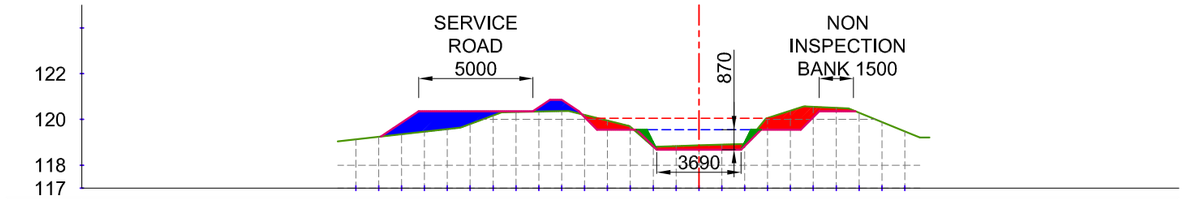
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

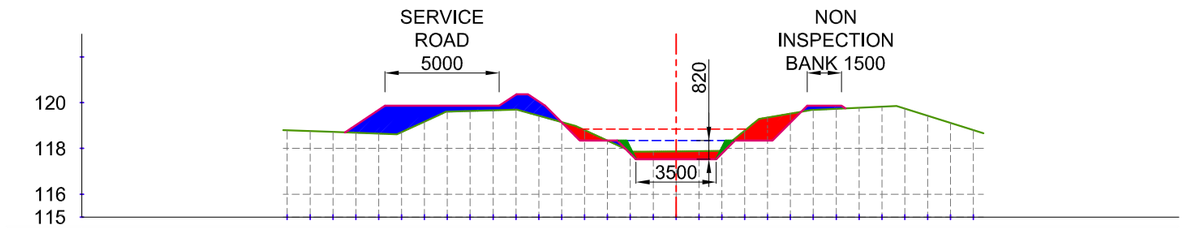
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 27 of 51 |

# X SECTION OF MAHUARY SUB DY.



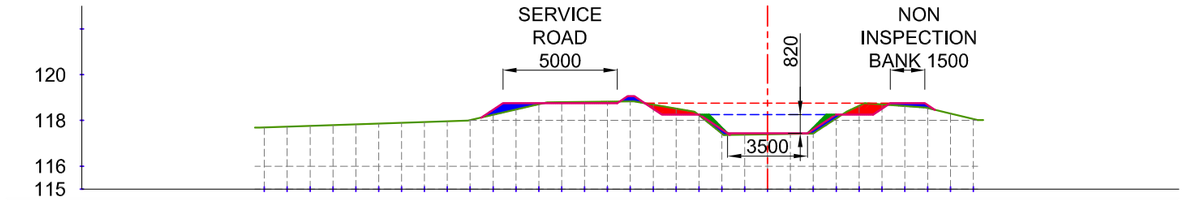

| | | |

# X SECTION OF MAHUARY SUB DY.



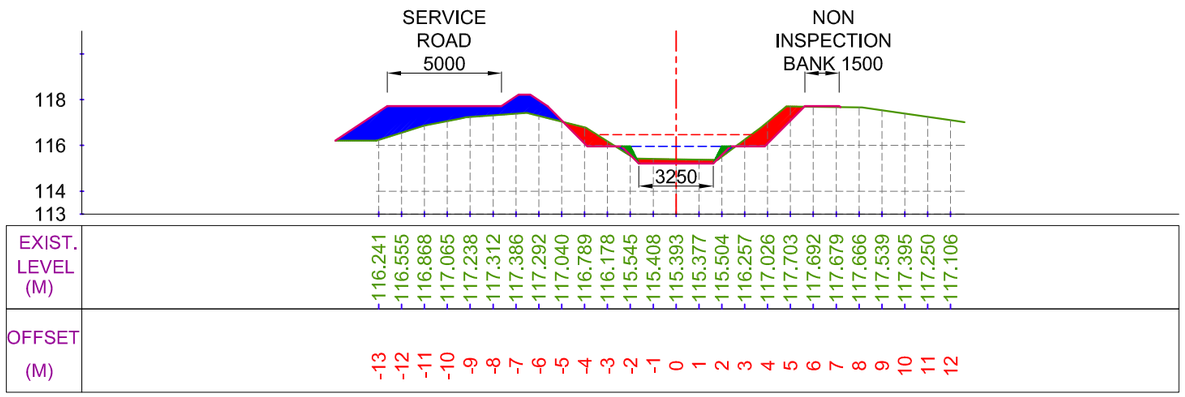

| | | |

# X SECTION OF MAHUARY SUB DY.



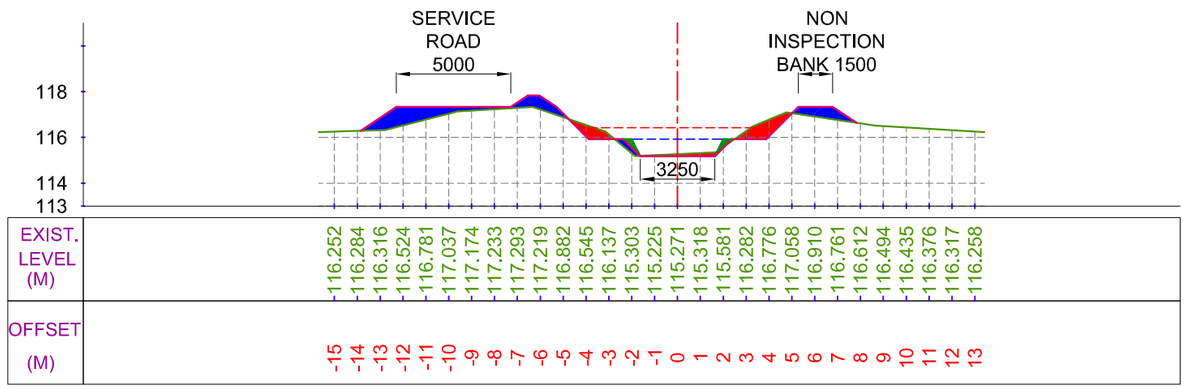

| | | |

# X SECTION OF MAHUARY SUB DY.



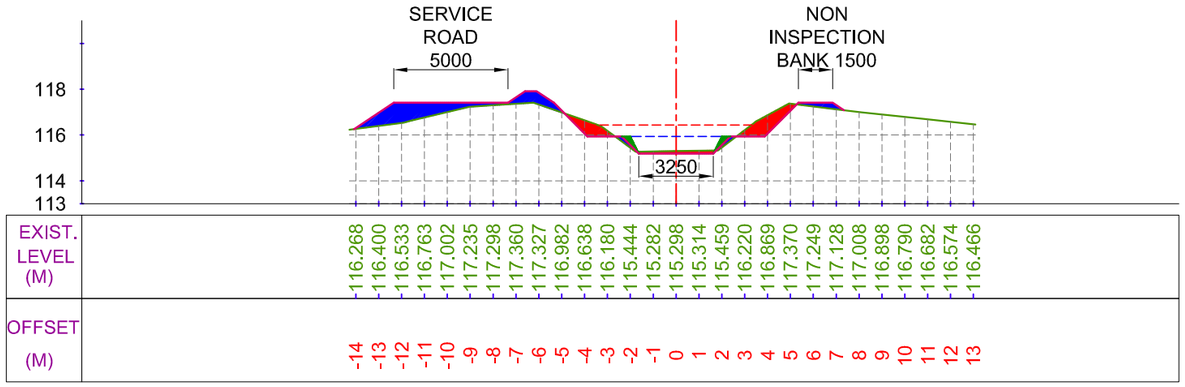

CUTTING AREA (SQ.M) = 3.226
FILLING AREA (SQ.M) = 7.105

CH. (KM):- 12+100
DESIGNED BED LEVEL = 115.214 M



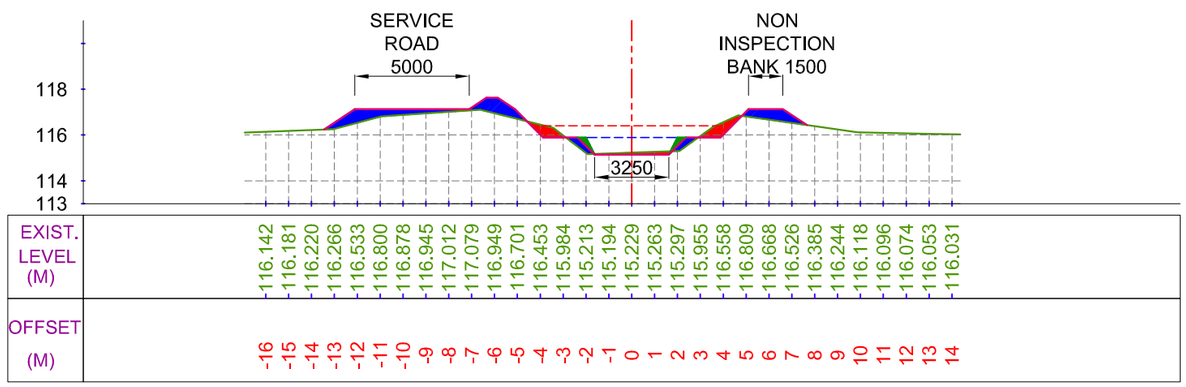

CUTTING AREA (SQ.M) = 2.147
FILLING AREA (SQ.M) = 4.602

CH. (KM):- 12+300
DESIGNED BED LEVEL = 115.170 M




CUTTING AREA (SQ.M) = 2.423
FILLING AREA (SQ.M) = 4.351

CH. (KM):- 12+200
DESIGNED BED LEVEL = 115.192 M




CUTTING AREA (SQ.M) = 1.411
FILLING AREA (SQ.M) = 4.357

CH. (KM):- 12+400
DESIGNED BED LEVEL = 115.147 M

## LEGEND

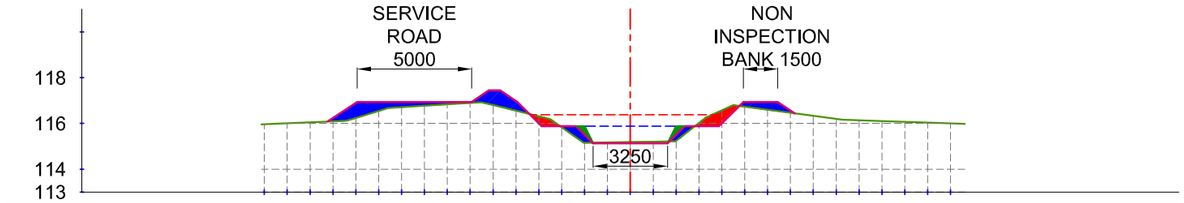
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 31 of 51 |

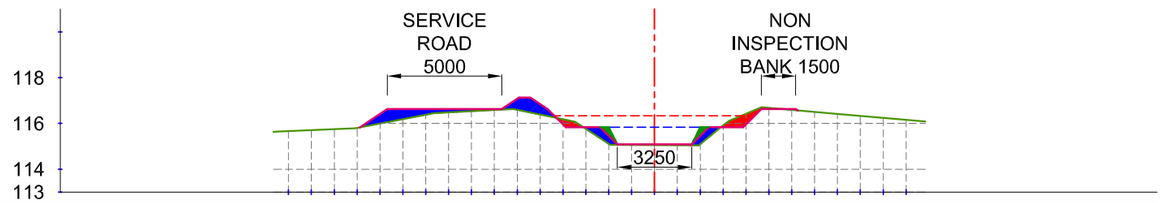
# X SECTION OF MAHUARY SUB DY.




| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 115.961 | 116.004 | 116.046 | 116.089 | 116.241 | 116.546 | 116.709 | 116.772 | 116.834 | 116.897 | 116.800 | 116.557 | 116.313 | 115.834 | 115.149 | 115.167 | 115.185 | 115.203 | 115.235 | 116.016 | 116.569 | 116.730 | 116.597 | 116.463 | 116.329 | 116.195 | 116.136 | 116.104 | 116.071 | 116.039 | 116.007 |
| OFFSET (M) | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |

CUTTING AREA (SQ.M) = 1.225
FILLING AREA (SQ.M) = 3.998

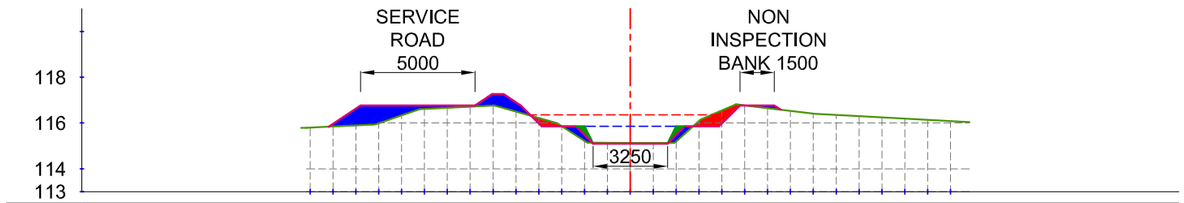
CH. (KM):- 12+500
DESIGNED BED LEVEL = 115.125 M




| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 115.659 | 115.704 | 115.748 | 115.803 | 115.993 | 116.184 | 116.374 | 116.477 | 116.531 | 116.585 | 116.592 | 116.386 | 116.180 | 115.762 | 115.106 | 115.057 | 115.051 | 115.045 | 115.095 | 115.909 | 116.423 | 116.679 | 116.589 | 116.498 | 116.409 | 116.323 | 116.237 | 116.151 | | | |
| OFFSET (M) | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | | |

CUTTING AREA (SQ.M) = 0.806
FILLING AREA (SQ.M) = 3.154

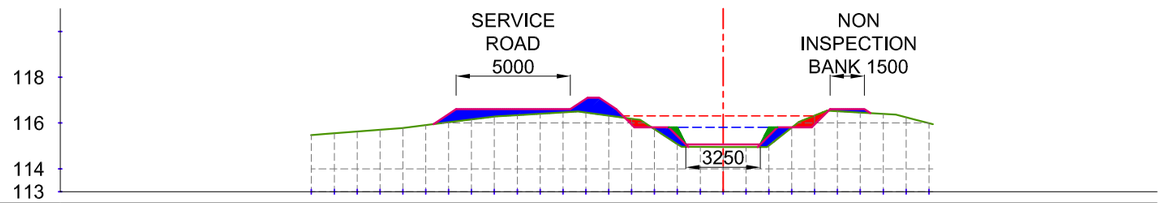
CH. (KM):- 12+700
DESIGNED BED LEVEL = 115.081 M




| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 115.800 | 115.848 | 115.897 | 115.988 | 116.335 | 116.619 | 116.669 | 116.719 | 116.768 | 116.500 | 116.219 | 115.865 | 115.219 | 115.136 | 115.133 | 115.130 | 115.196 | 116.088 | 116.552 | 116.771 | 116.652 | 116.533 | 116.414 | 116.354 | 116.299 | 116.244 | 116.189 | 116.134 | 116.080 | | |
| OFFSET (M) | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | |

CUTTING AREA (SQ.M) = 1.124
FILLING AREA (SQ.M) = 3.910

CH. (KM):- 12+600
DESIGNED BED LEVEL = 115.103 M




| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 115.474 | 115.551 | 115.629 | 115.707 | 115.787 | 115.911 | 116.035 | 116.159 | 116.283 | 116.345 | 116.404 | 116.463 | 116.456 | 116.322 | 116.188 | 115.728 | 115.077 | 114.954 | 114.951 | 114.949 | 115.011 | 115.804 | 116.329 | 116.517 | 116.458 | 116.398 | 116.252 | 115.997 | | | |
| OFFSET (M) | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | |

CUTTING AREA (SQ.M) = 0.665
FILLING AREA (SQ.M) = 3.913

CH. (KM):- 12+800
DESIGNED BED LEVEL = 115.059 M

## LEGEND

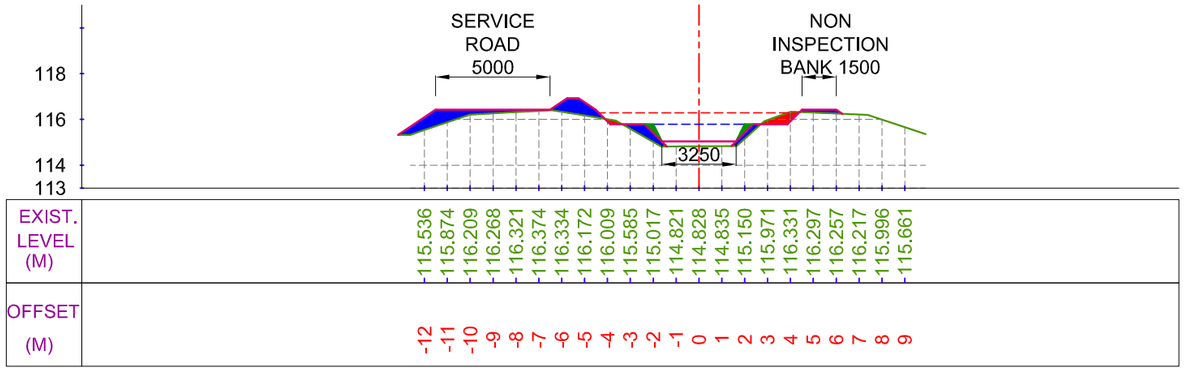
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

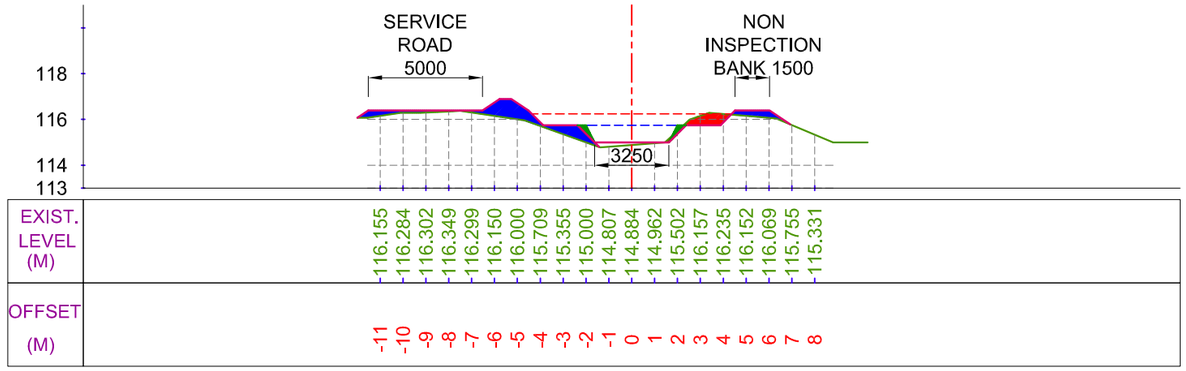
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 32 of 51 |

# X SECTION OF MAHUARY SUB DY.



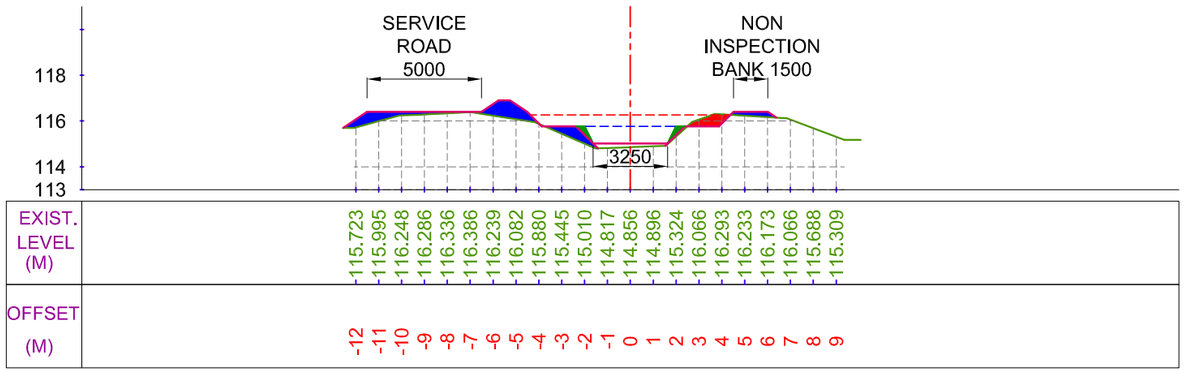

CUTTING AREA (SQ.M) = 0.568
FILLING AREA (SQ.M) = 3.889

CH. (KM):- 12+900
DESIGNED BED LEVEL = 115.036 M



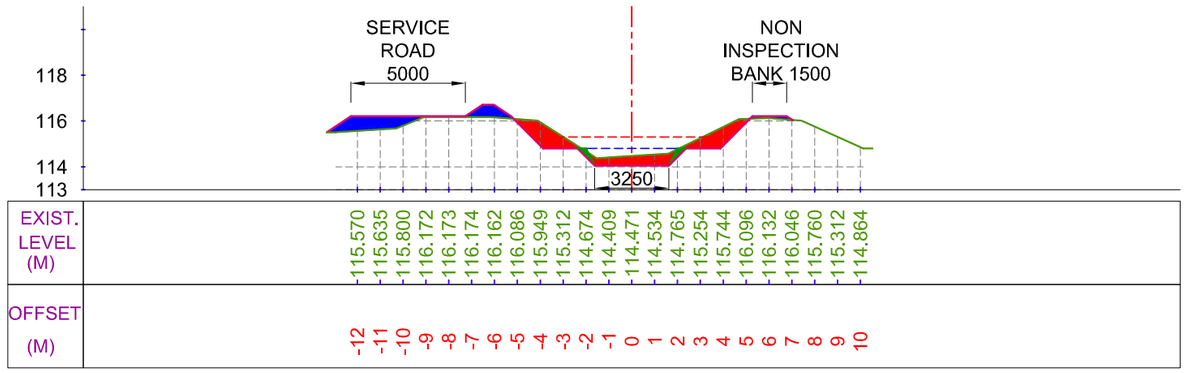

CUTTING AREA (SQ.M) = 0.777
FILLING AREA (SQ.M) = 3.385

CH. (KM):- 13+100
DESIGNED BED LEVEL = 114.992 M




CUTTING AREA (SQ.M) = 0.632
FILLING AREA (SQ.M) = 3.392

CH. (KM):- 13+000
DESIGNED BED LEVEL = 115.014 M




CUTTING AREA (SQ.M) = 4.583
FILLING AREA (SQ.M) = 2.853

CH. (KM):- 13+200
DESIGNED BED LEVEL = 114.056 M

## LEGEND

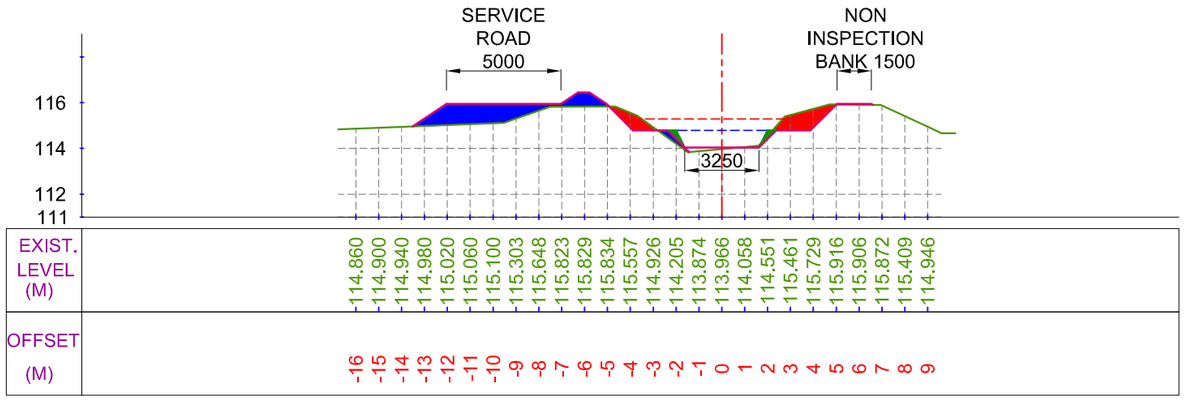
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

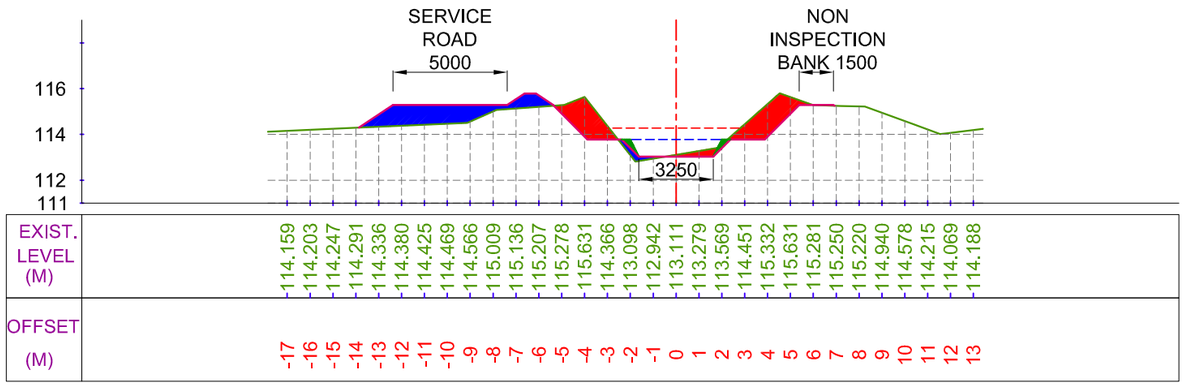
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 33 of 51 |

# X SECTION OF MAHUARY SUB DY.



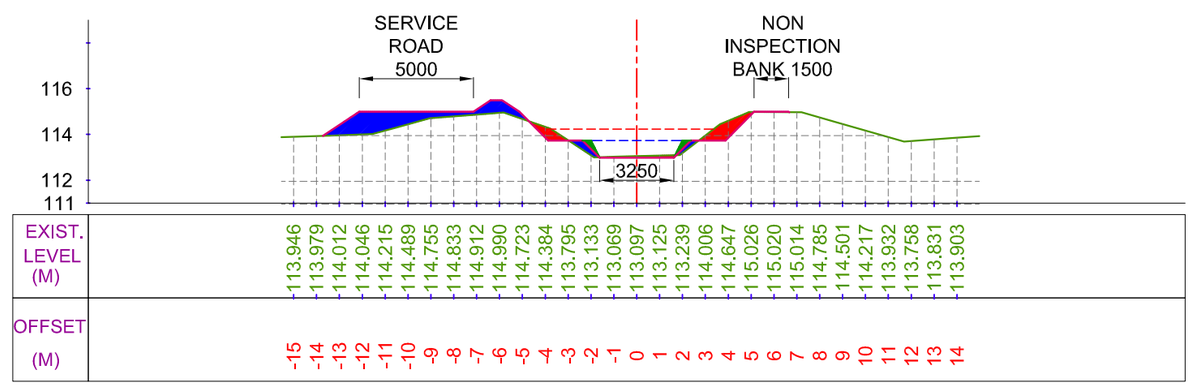

| | | |

# X SECTION OF MAHUARY SUB DY.



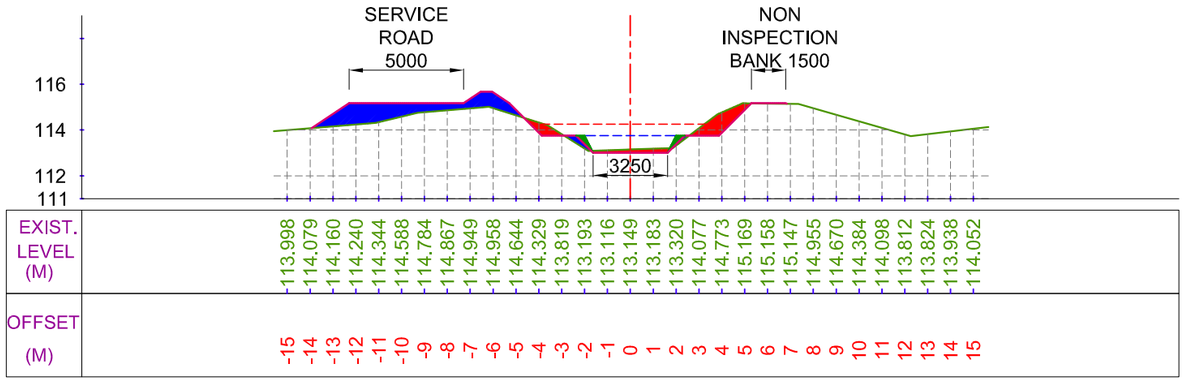

CUTTING AREA (SQ.M) = 5.678
FILLING AREA (SQ.M) = 5.347

CH. (KM):- 13+700
DESIGNED BED LEVEL = 113.031 M



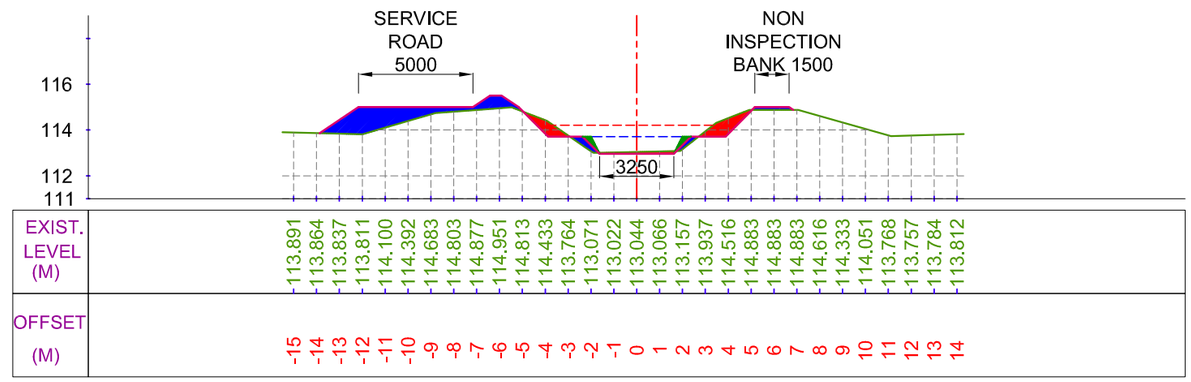

CUTTING AREA (SQ.M) = 1.756
FILLING AREA (SQ.M) = 4.789

CH. (KM):- 13+900
DESIGNED BED LEVEL = 112.986 M




CUTTING AREA (SQ.M) = 2.361
FILLING AREA (SQ.M) = 5.254

CH. (KM):- 13+800
DESIGNED BED LEVEL = 113.008 M




CUTTING AREA (SQ.M) = 1.898
FILLING AREA (SQ.M) = 5.260

CH. (KM):- 14+000
DESIGNED BED LEVEL = 112.964 M

## LEGEND

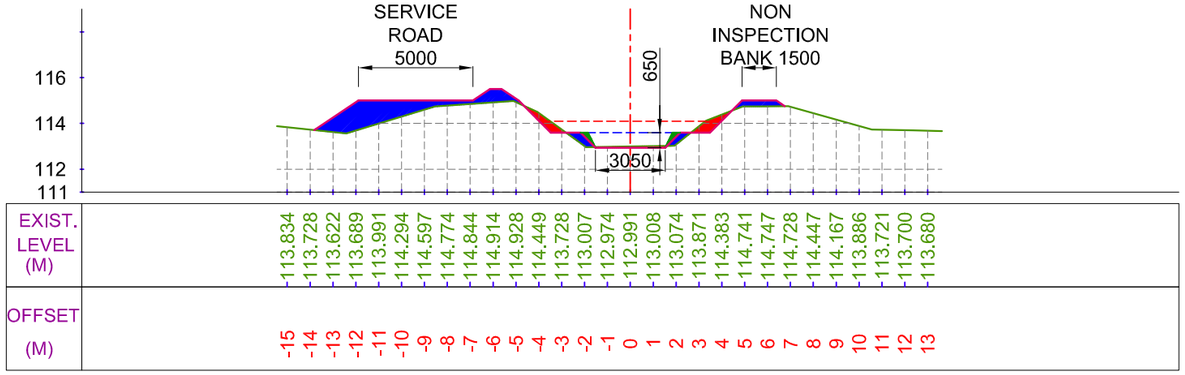
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

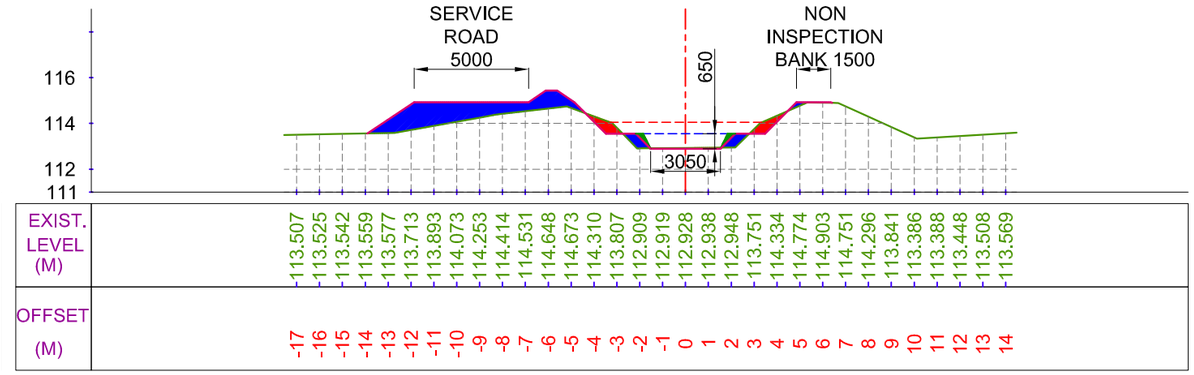
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 35 of 51 |

# X SECTION OF MAHUARY SUB DY.



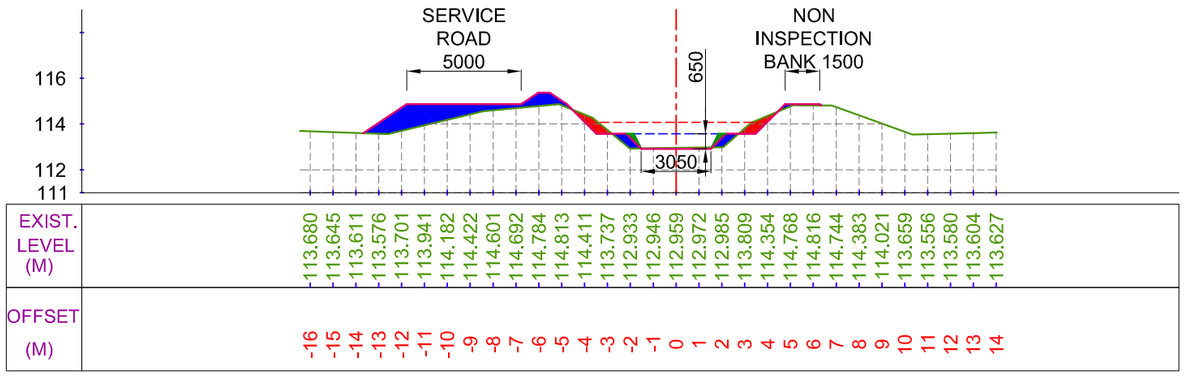

CUTTING AREA (SQ.M) = 1.183
FILLING AREA (SQ.M) = 6.140

CH. (KM):- 14+100
DESIGNED BED LEVEL = 112.942 M



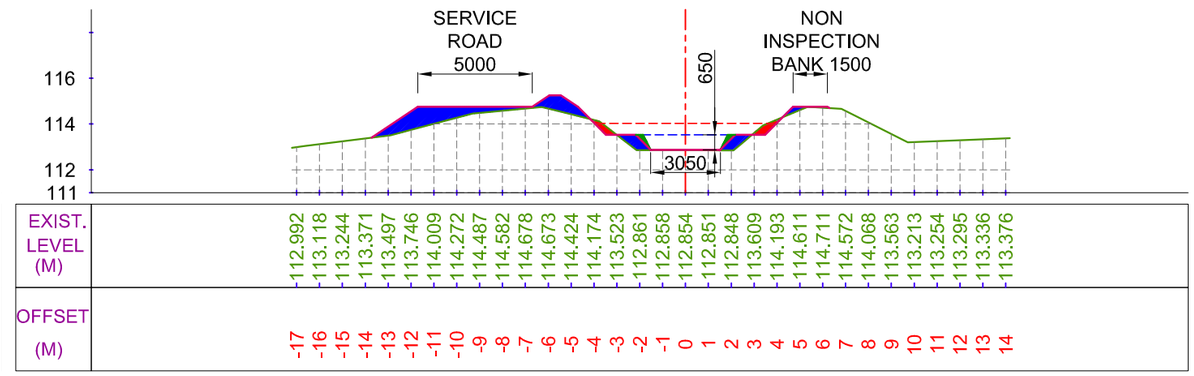

CUTTING AREA (SQ.M) = 1.094
FILLING AREA (SQ.M) = 7.174

CH. (KM):- 14+300
DESIGNED BED LEVEL = 112.897 M




CUTTING AREA (SQ.M) = 1.149
FILLING AREA (SQ.M) = 5.522

CH. (KM):- 14+200
DESIGNED BED LEVEL = 112.919 M




CUTTING AREA (SQ.M) = 0.552
FILLING AREA (SQ.M) = 5.089

CH. (KM):- 14+400
DESIGNED BED LEVEL = 112.875 M

## LEGEND

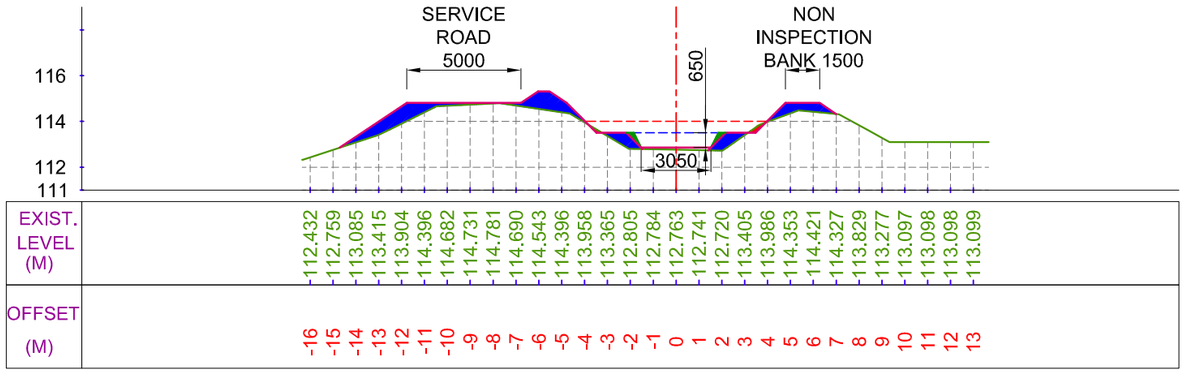
| | | |
|---|---|---|
| CUT AREA | EXISTING BED LINE | |
| | F.S.L. | |
| FILL AREA | DESIGNED BED LINE | |
| | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

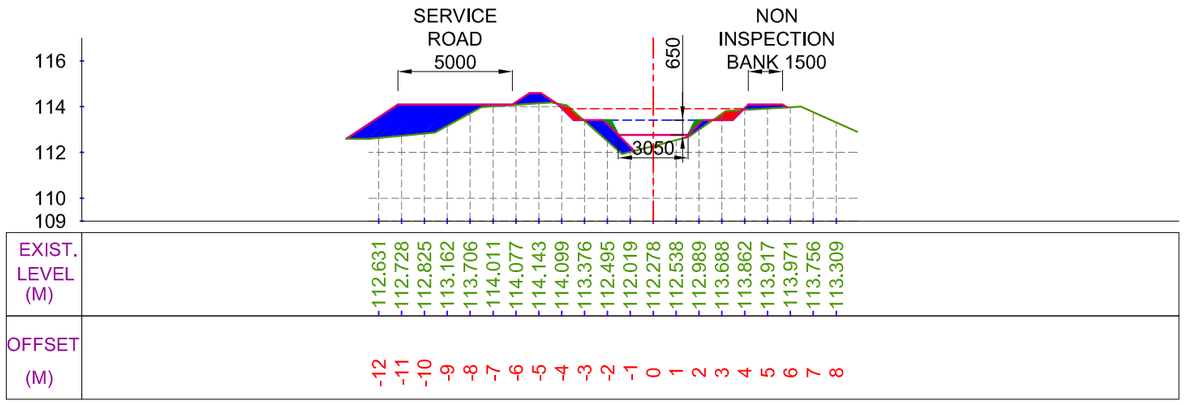
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- |

# X SECTION OF MAHUARY SUB DY.



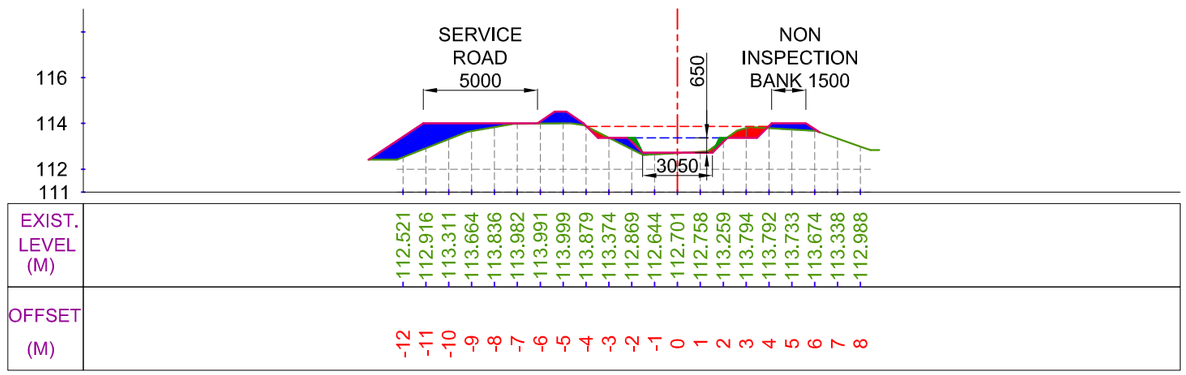

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# X SECTION OF MAHUARY SUB DY.



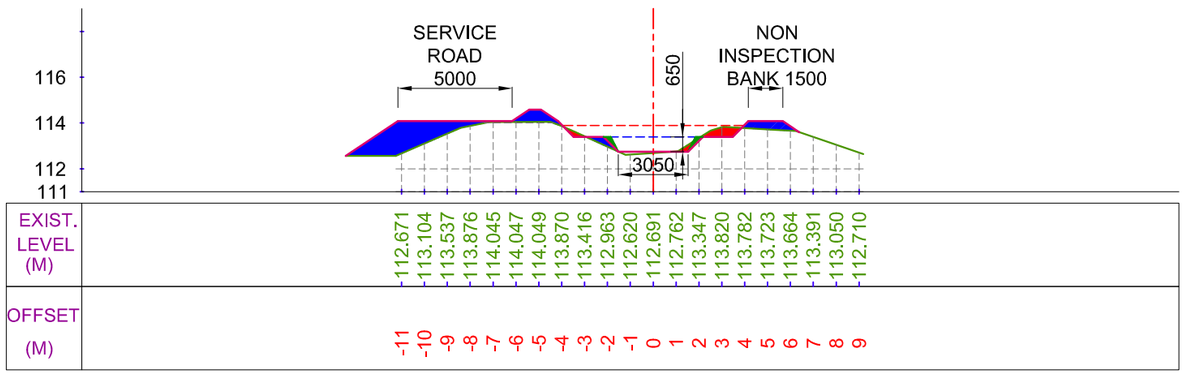

CUTTING AREA (SQ.M) = 0.587
FILLING AREA (SQ.M) = 7.381

CH. (KM):- 14+900
DESIGNED BED LEVEL = 112.764 M



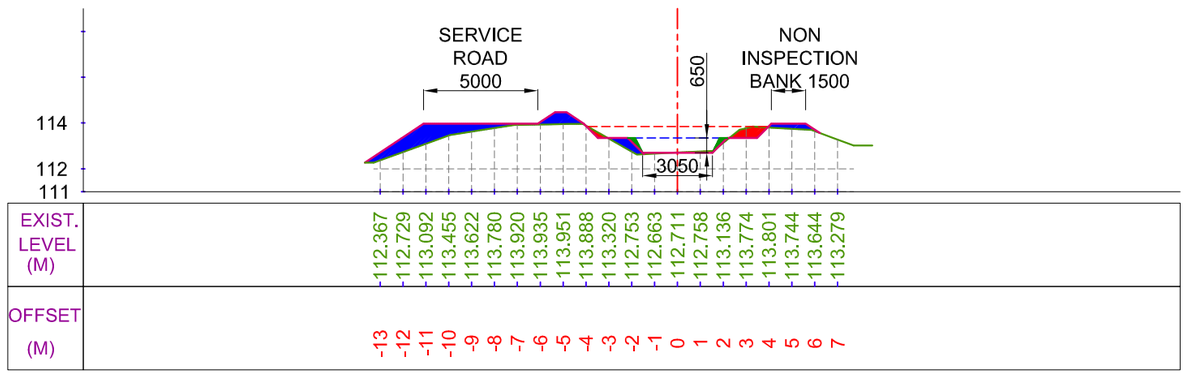

CUTTING AREA (SQ.M) = 0.724
FILLING AREA (SQ.M) = 5.147

CH. (KM):- 15+100
DESIGNED BED LEVEL = 112.719 M




CUTTING AREA (SQ.M) = 0.751
FILLING AREA (SQ.M) = 6.063

CH. (KM):- 15+000
DESIGNED BED LEVEL = 112.742 M




CUTTING AREA (SQ.M) = 0.727
FILLING AREA (SQ.M) = 4.539

CH. (KM):- 15+200
DESIGNED BED LEVEL = 112.697 M

## LEGEND

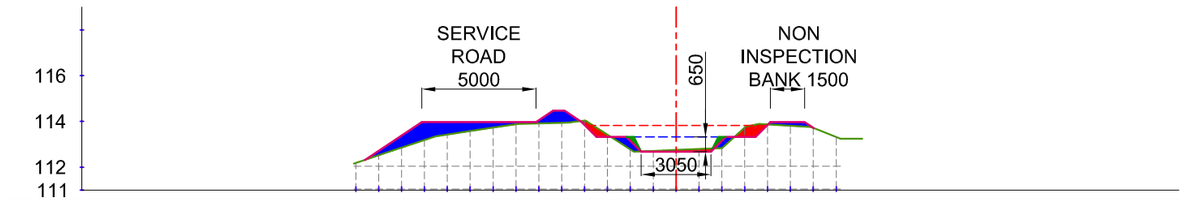
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

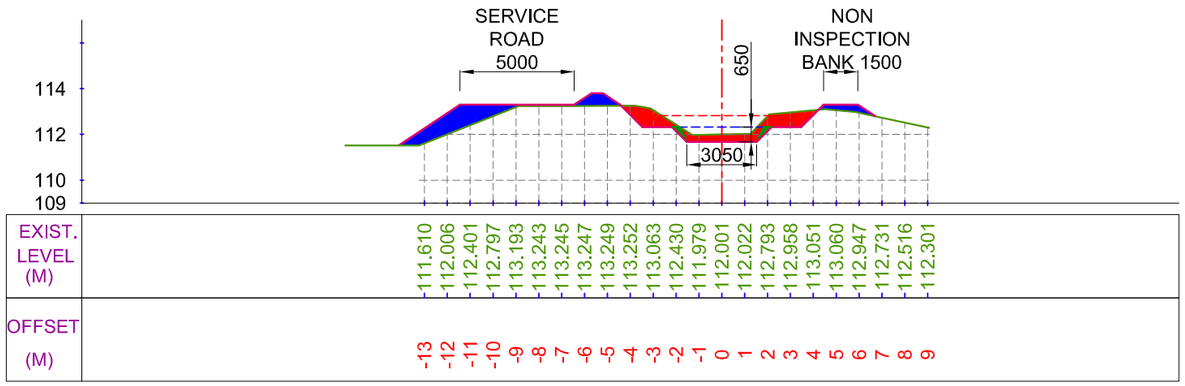
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- |

# X SECTION OF MAHUARY SUB DY.



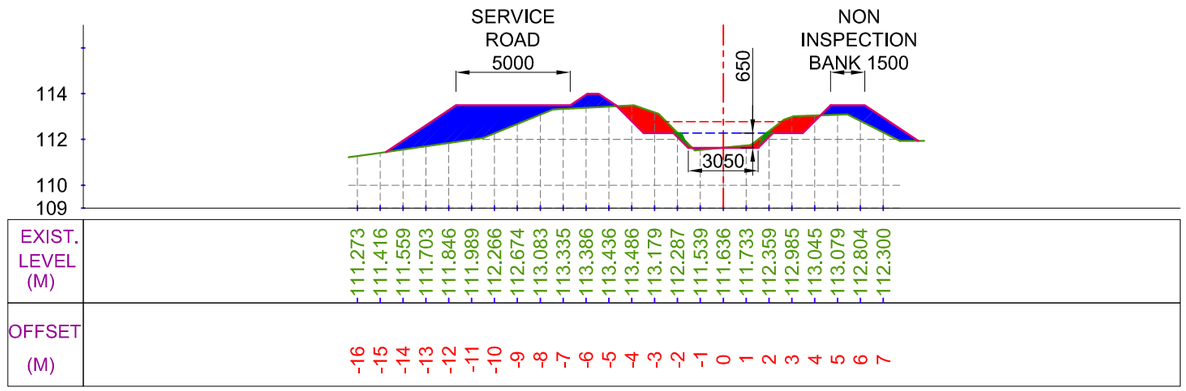

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# X SECTION OF MAHUARY SUB DY.



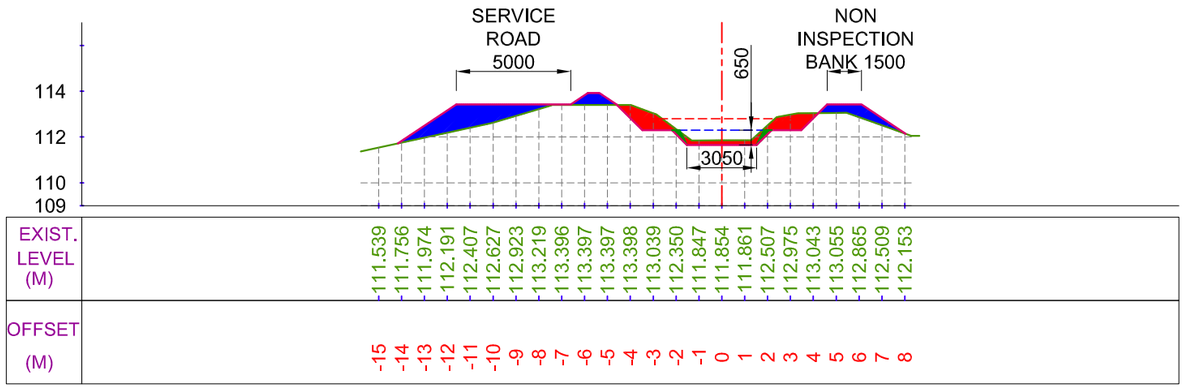

CUTTING AREA (SQ.M) = 3.755
FILLING AREA (SQ.M) = 4.599

CH. (KM):- 15+700
DESIGNED BED LEVEL = 111.672 M



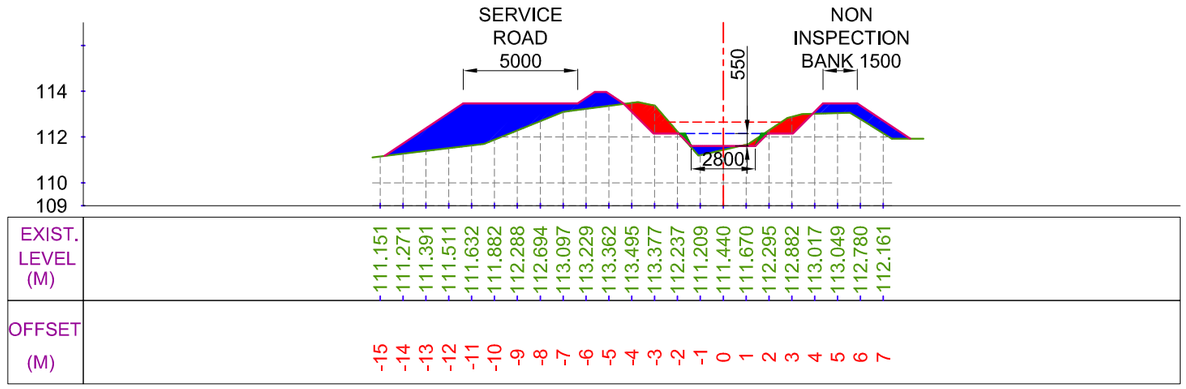

CUTTING AREA (SQ.M) = 2.990
FILLING AREA (SQ.M) = 9.771

CH. (KM):- 15+900
DESIGNED BED LEVEL = 111.628 M




CUTTING AREA (SQ.M) = 3.322
FILLING AREA (SQ.M) = 6.119

CH. (KM):- 15+800
DESIGNED BED LEVEL = 111.650 M




CUTTING AREA (SQ.M) = 2.548
FILLING AREA (SQ.M) = 12.023

CH. (KM):- 16+000
DESIGNED BED LEVEL = 111.605 M

## LEGEND

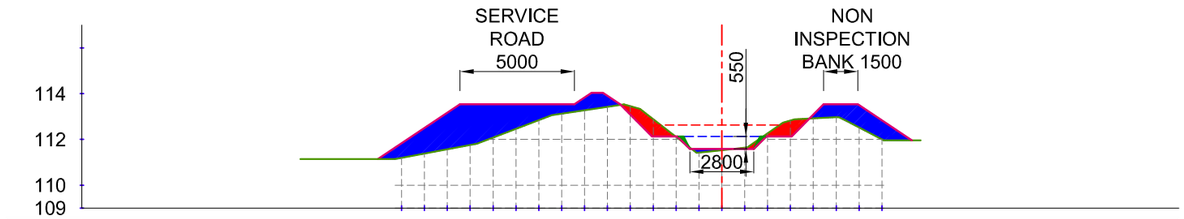
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

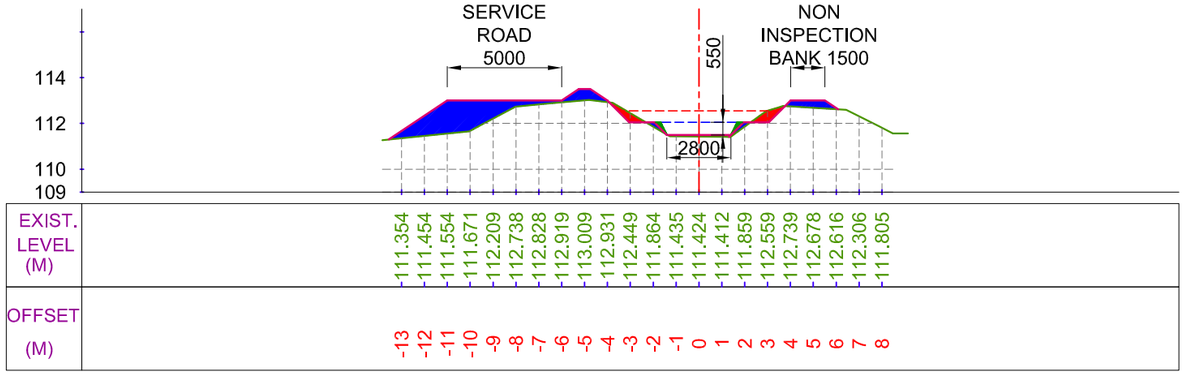
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|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 40 of 51 |

# X SECTION OF MAHUARY SUB DY.



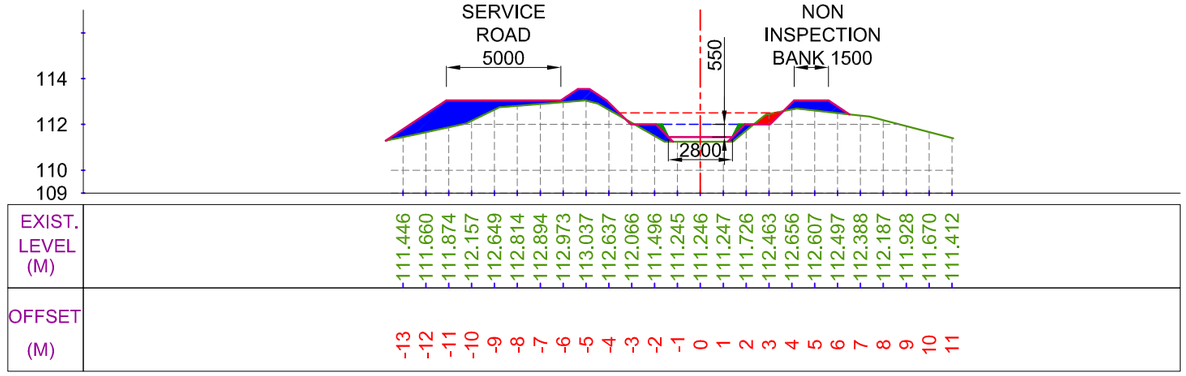

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# X SECTION OF MAHUARY SUB DY.



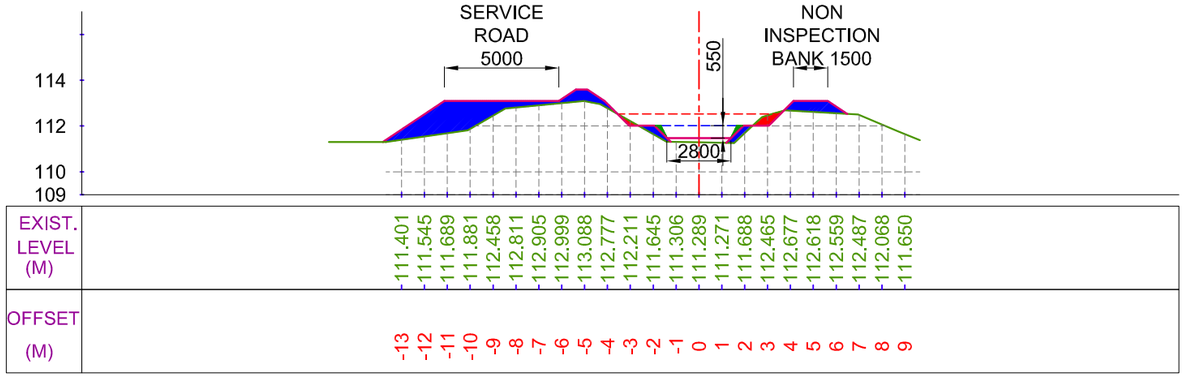

CUTTING AREA (SQ.M) = 0.802
FILLING AREA (SQ.M) = 6.630

CH. (KM):- 16+500
DESIGNED BED LEVEL = 111.494 M



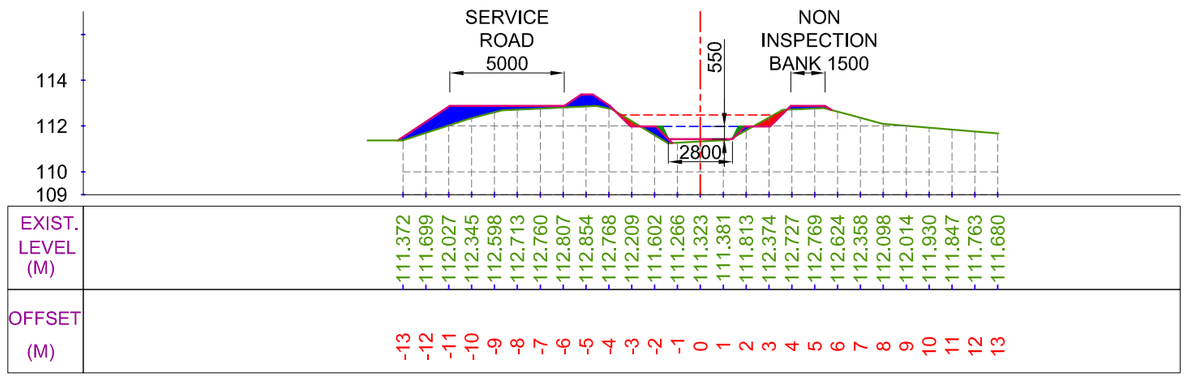

CUTTING AREA (SQ.M) = 0.357
FILLING AREA (SQ.M) = 6.657

CH. (KM):- 16+700
DESIGNED BED LEVEL = 111.450 M




CUTTING AREA (SQ.M) = 0.439
FILLING AREA (SQ.M) = 7.653

CH. (KM):- 16+600
DESIGNED BED LEVEL = 111.472 M




CUTTING AREA (SQ.M) = 0.486
FILLING AREA (SQ.M) = 3.870

CH. (KM):- 16+800
DESIGNED BED LEVEL = 111.428 M

## LEGEND

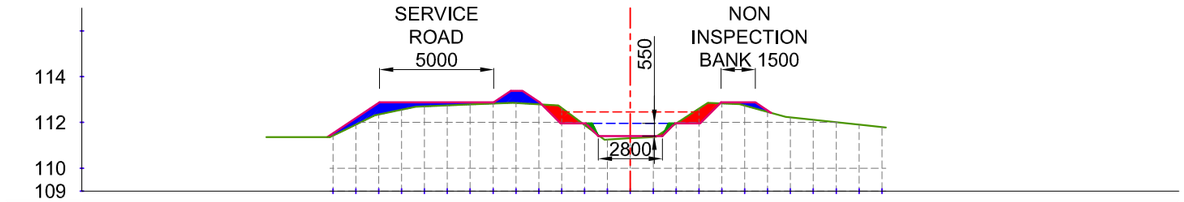
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 42 of 51 |

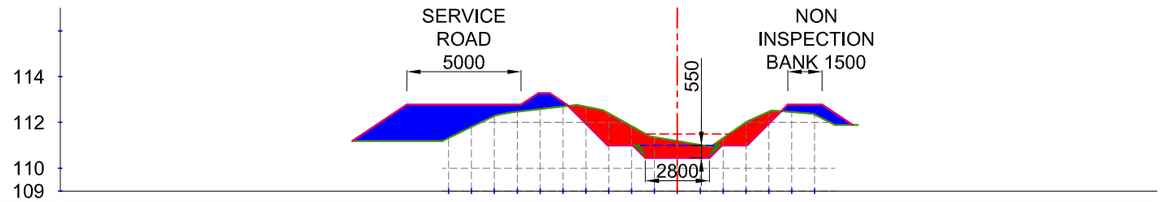
# X SECTION OF MAHUARY SUB DY.




| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 111.420 | 111.905 | 112.346 | 112.556 | 112.703 | 112.743 | 112.783 | 112.823 | 112.849 | 112.789 | 112.628 | 111.889 | 111.253 | 111.309 | 111.366 | 111.948 | 112.600 | 112.830 | 112.740 | 112.460 | 112.217 | 112.112 | 112.008 | 111.904 | 111.800 |
| OFFSET (M) | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

CUTTING AREA (SQ.M) = 1.396
FILLING AREA (SQ.M) = 2.559

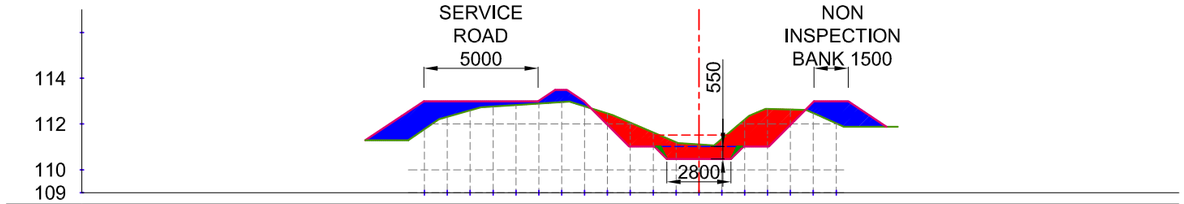
CH. (KM):- 16+900
DESIGNED BED LEVEL = 111.405 M




| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 111.318 | 111.801 | 112.284 | 112.467 | 112.580 | 112.694 | 112.686 | 112.391 | 111.835 | 111.356 | 111.189 | 111.022 | 111.314 | 112.010 | 112.470 | 112.451 | 112.338 | | | | | |
| OFFSET (M) | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | | | | | |

CUTTING AREA (SQ.M) = 6.868
FILLING AREA (SQ.M) = 9.316

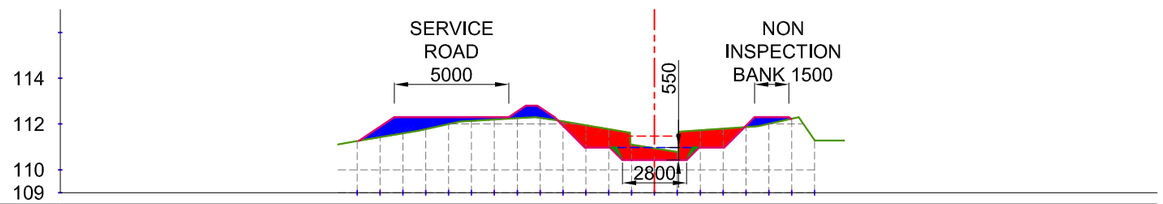
CH. (KM):- 17+100
DESIGNED BED LEVEL = 110.447 M




| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 111.772 | 112.316 | 112.602 | 112.770 | 112.831 | 112.893 | 112.955 | 112.770 | 112.460 | 112.058 | 111.631 | 111.203 | 111.105 | 111.349 | 112.195 | 112.666 | 112.638 | 112.476 | 112.031 | | | |
| OFFSET (M) | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | | | |

CUTTING AREA (SQ.M) = 7.730
FILLING AREA (SQ.M) = 7.270

CH. (KM):- 17+000
DESIGNED BED LEVEL = 110.469 M




| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 111.255 | 111.425 | 111.594 | 111.777 | 111.994 | 112.133 | 112.192 | 112.250 | 112.266 | 112.120 | 111.951 | 111.781 | 111.098 | 110.942 | 110.783 | 111.731 | 111.799 | 111.866 | 112.013 | 112.231 | 111.289 | |
| OFFSET (M) | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |

CUTTING AREA (SQ.M) = 5.707
FILLING AREA (SQ.M) = 3.506

CH. (KM):- 17+200
DESIGNED BED LEVEL = 110.425 M

## LEGEND

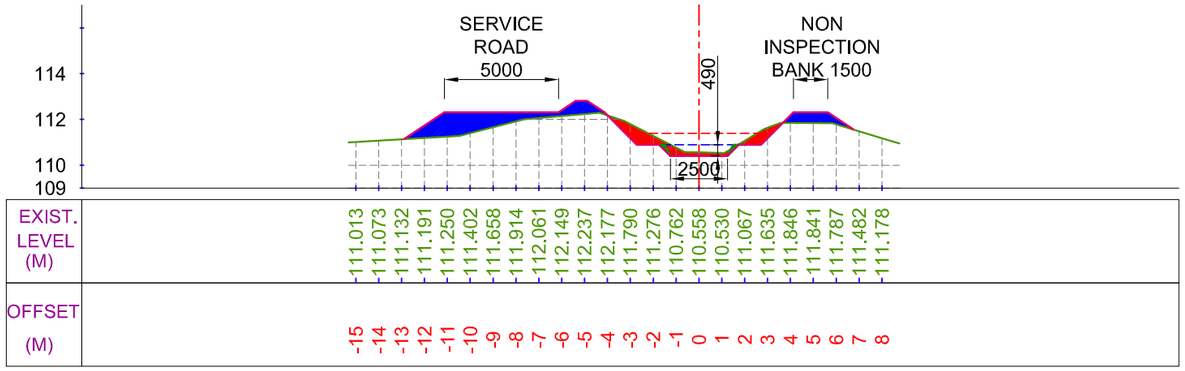
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

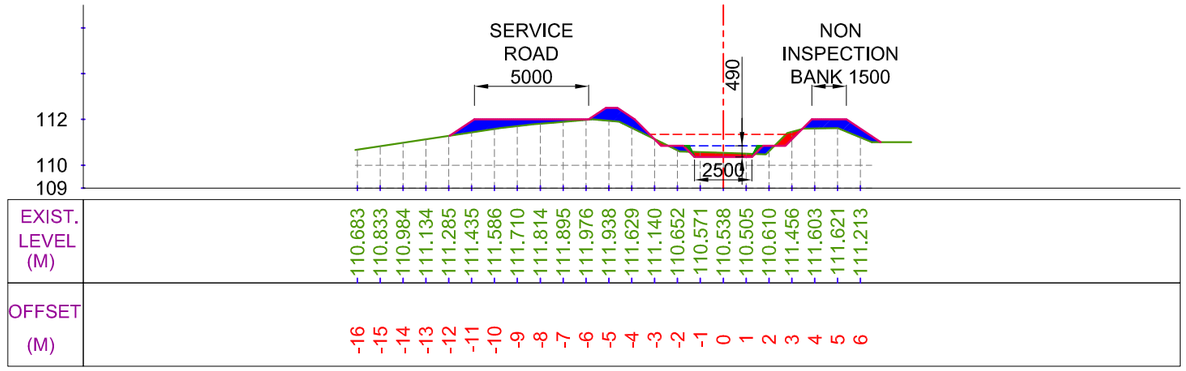
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 43 of 51 |

# X SECTION OF MAHUARY SUB DY.



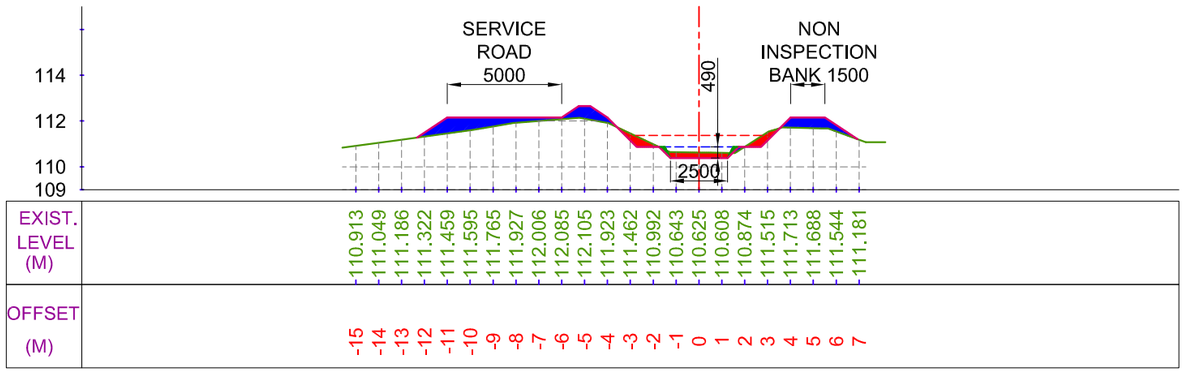

CUTTING AREA (SQ.M) = 2.260
FILLING AREA (SQ.M) = 5.686

CH. (KM):- 17+300
DESIGNED BED LEVEL = 110.403 M



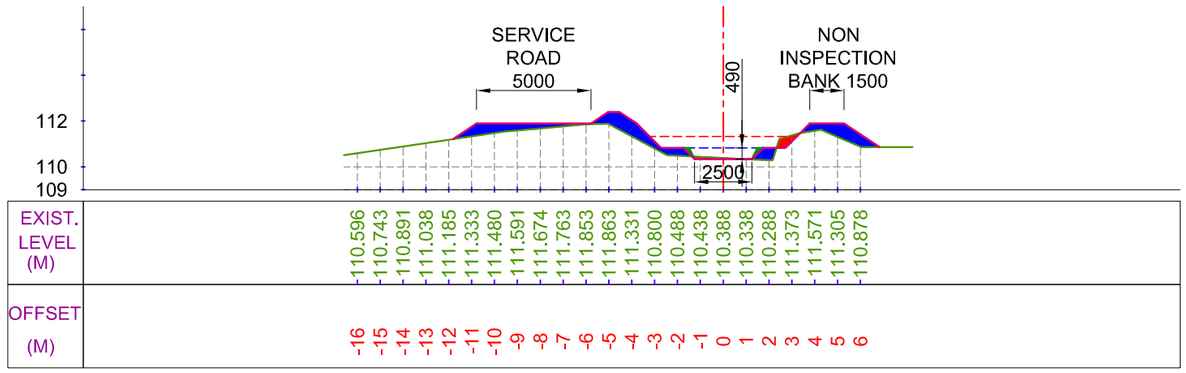

CUTTING AREA (SQ.M) = 0.824
FILLING AREA (SQ.M) = 4.126

CH. (KM):- 17+500
DESIGNED BED LEVEL = 110.358 M




CUTTING AREA (SQ.M) = 1.461
FILLING AREA (SQ.M) = 4.158

CH. (KM):- 17+400
DESIGNED BED LEVEL = 110.380 M




CUTTING AREA (SQ.M) = 0.425
FILLING AREA (SQ.M) = 5.217

CH. (KM):- 17+600
DESIGNED BED LEVEL = 110.336 M

## LEGEND

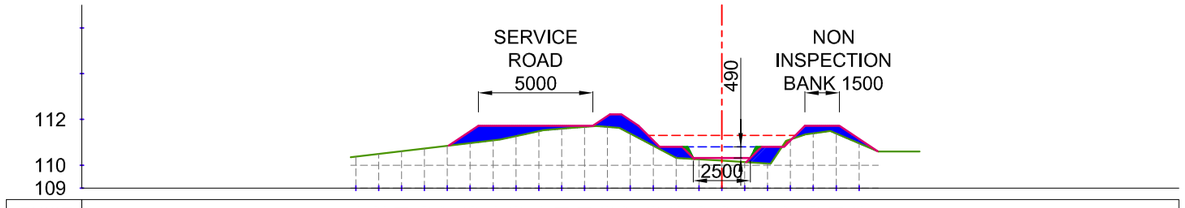
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

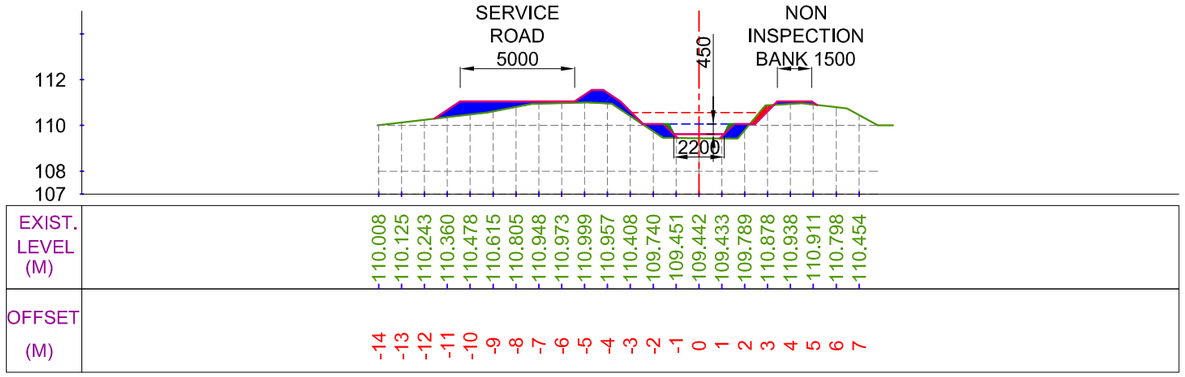
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 44 of 51 |

# X SECTION OF MAHUARY SUB DY.



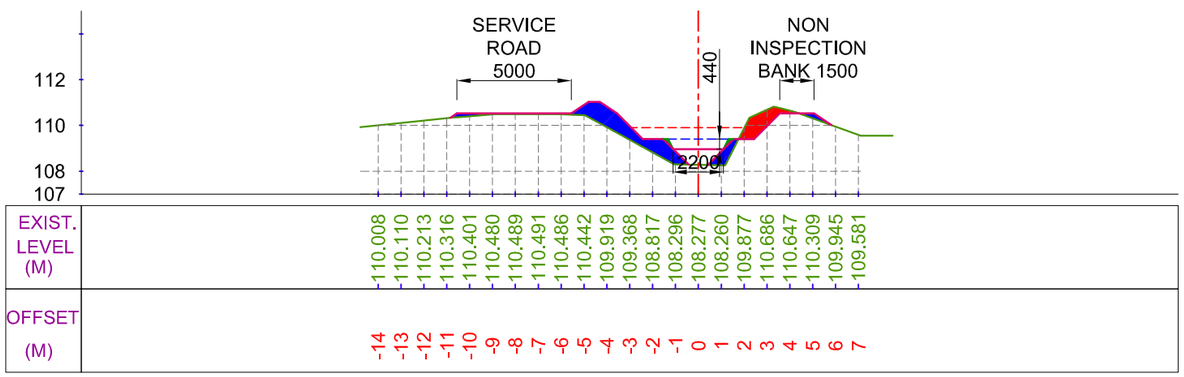

| | | |

# X SECTION OF MAHUARY SUB DY.



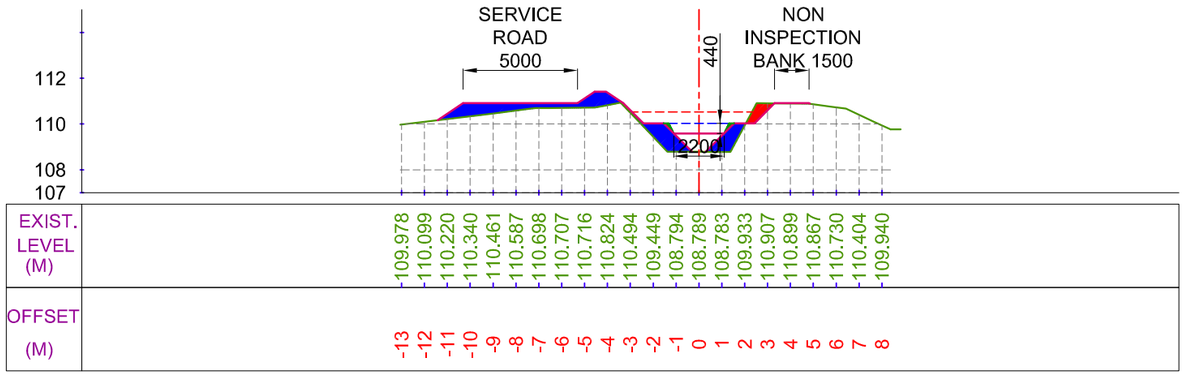

CUTTING AREA (SQ.M) = 0.237
FILLING AREA (SQ.M) = 3.853

CH. (KM):- 18+100
DESIGNED BED LEVEL = 109.614 M



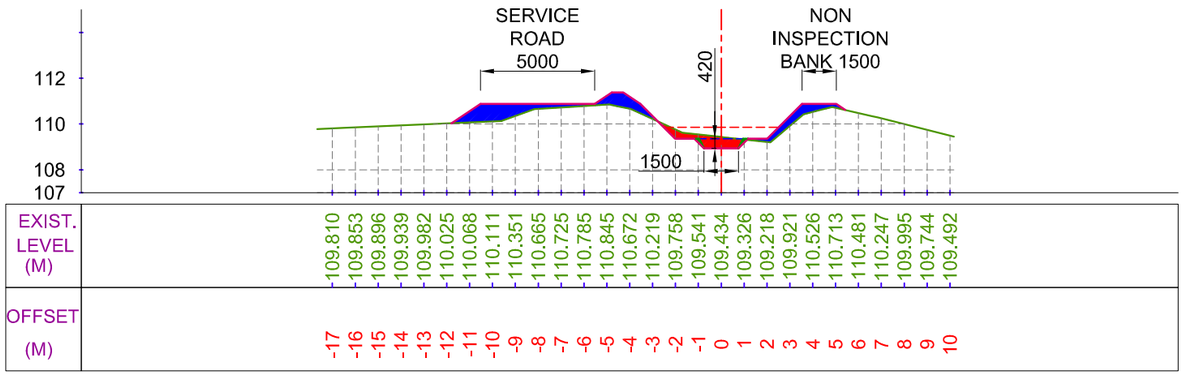

CUTTING AREA (SQ.M) = 1.315
FILLING AREA (SQ.M) = 4.069

CH. (KM):- 18+300
DESIGNED BED LEVEL = 108.957 M




CUTTING AREA (SQ.M) = 0.509
FILLING AREA (SQ.M) = 5.288

CH. (KM):- 18+200
DESIGNED BED LEVEL = 109.591 M




CUTTING AREA (SQ.M) = 1.295
FILLING AREA (SQ.M) = 4.440

CH. (KM):- 18+400
DESIGNED BED LEVEL = 108.934 M

## LEGEND

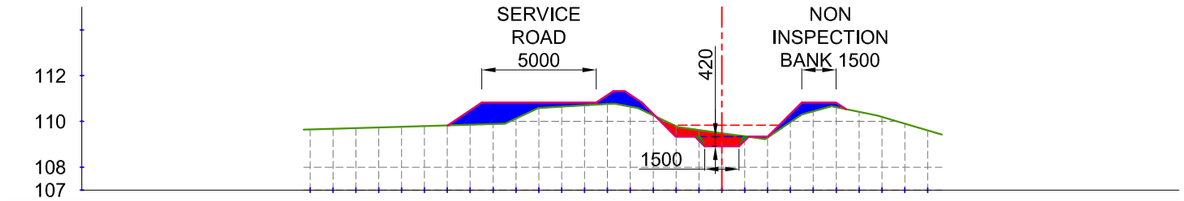
| | | |
|---|---|---|
| CUT AREA | EXISTING BED LINE | |
| | F.S.L. | |
| FILL AREA | DESIGNED BED LINE | |
| | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

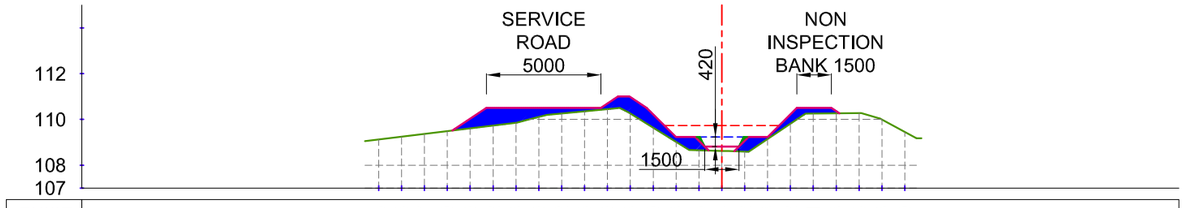
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 46 of 51 |

# X SECTION OF MAHUARY SUB DY.



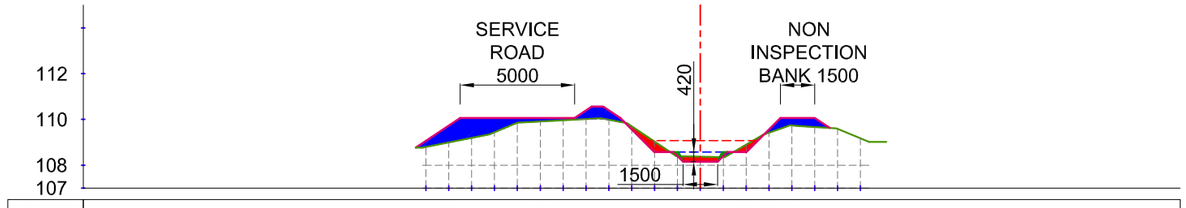

| | | |

# X SECTION OF MAHUARY SUB DY.



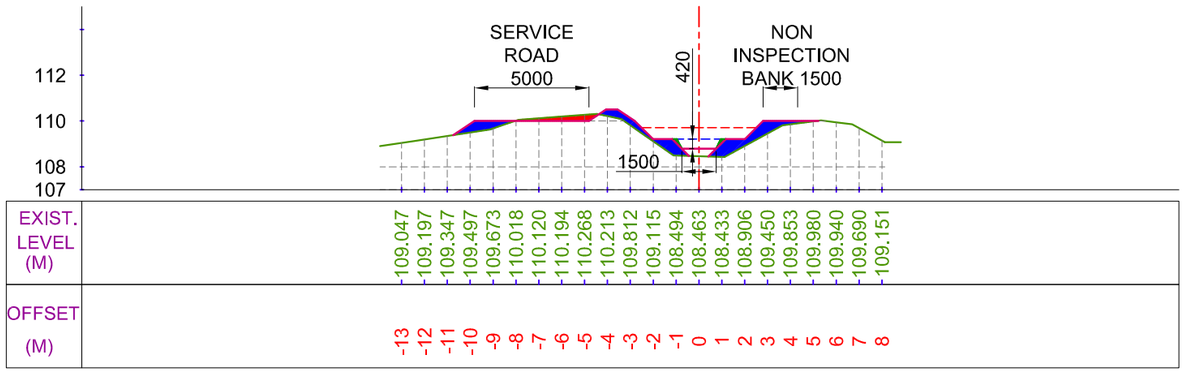

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 6.168

CH. (KM):- 18+900
DESIGNED BED LEVEL = 108.812 M



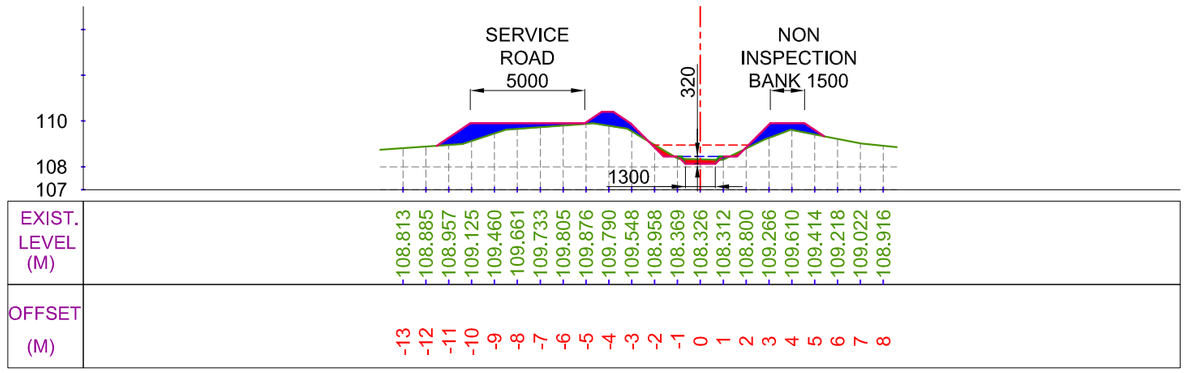

CUTTING AREA (SQ.M) = 1.063
FILLING AREA (SQ.M) = 4.650

CH. (KM):- 19+100
DESIGNED BED LEVEL = 108.153 M




CUTTING AREA (SQ.M) = 0.560
FILLING AREA (SQ.M) = 3.567

CH. (KM):- 19+000
DESIGNED BED LEVEL = 108.788 M




CUTTING AREA (SQ.M) = 0.490
FILLING AREA (SQ.M) = 4.086

CH. (KM):- 19+200
DESIGNED BED LEVEL = 108.129 M

## LEGEND

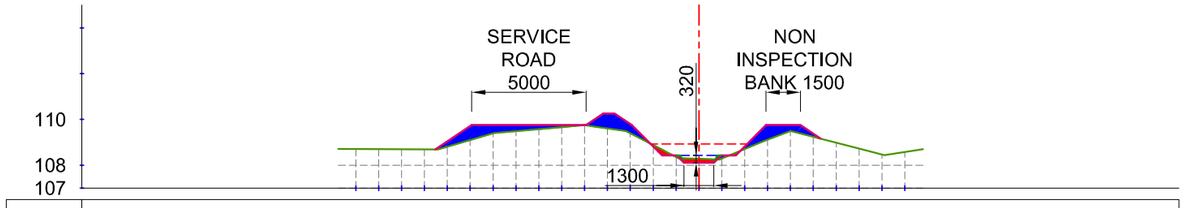
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

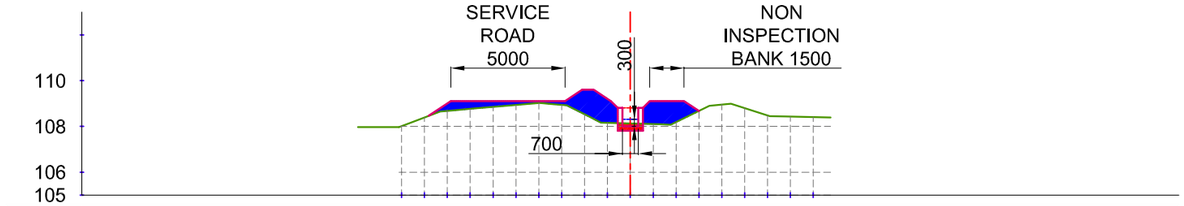
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RIGHT MAIN CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ XSEC- 48 of 51 |

# X SECTION OF MAHUARY SUB DY.



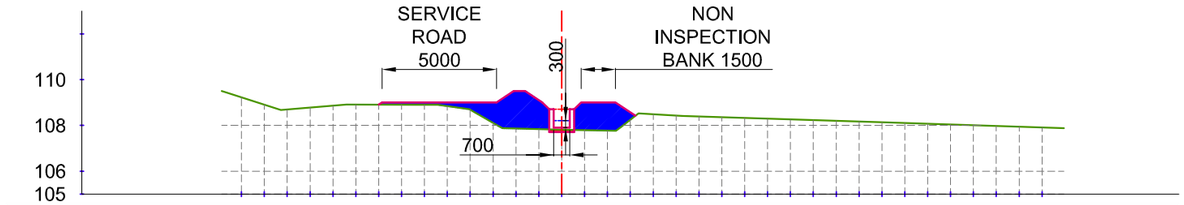

| | | |

# X SECTION OF MAHUARY SUB DY.




| | | |

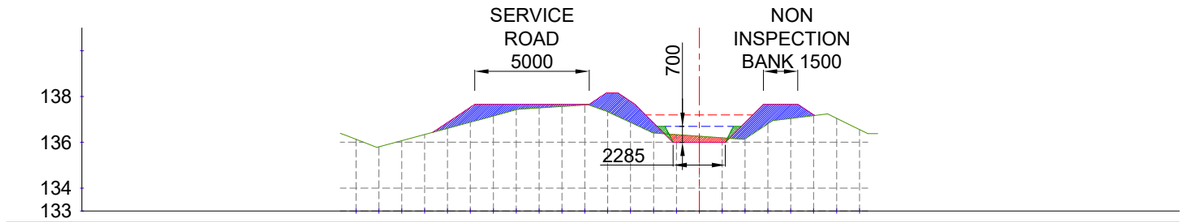
# X SECTION OF MAHUARY SUB DY.




| | | |

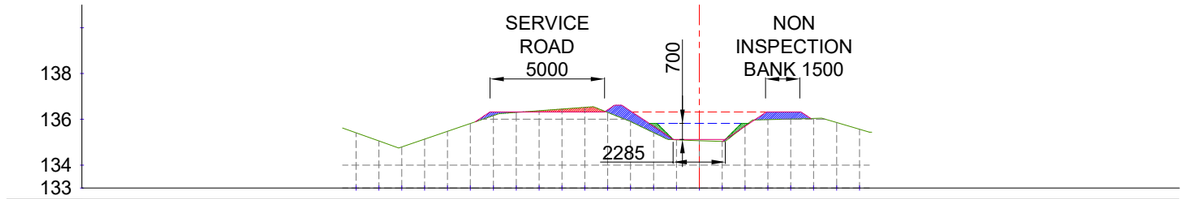
# *BARIAWA MINOR*

# X SECTION OF BARIAWA MINOR



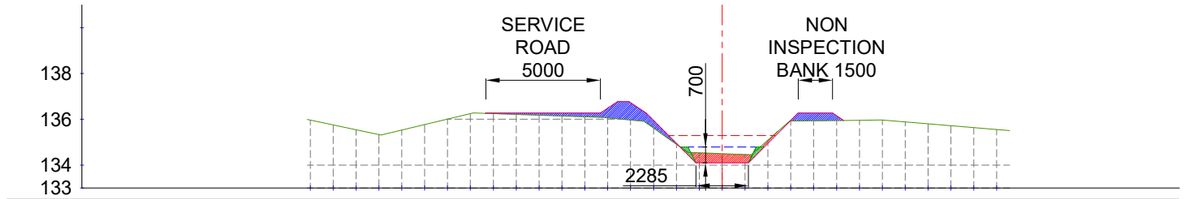

| | | |

# X SECTION OF BARIAWA MINOR



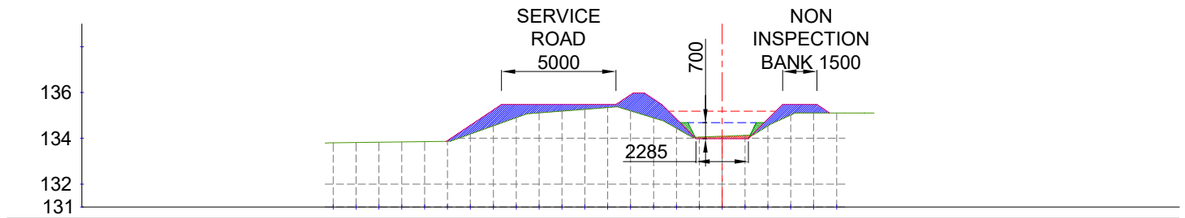

| | | |

# X SECTION OF BARIAWA MINOR



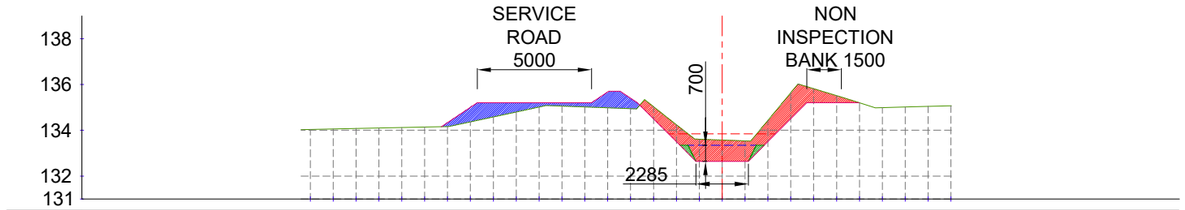

| | | |

# X SECTION OF BARIAWA MINOR



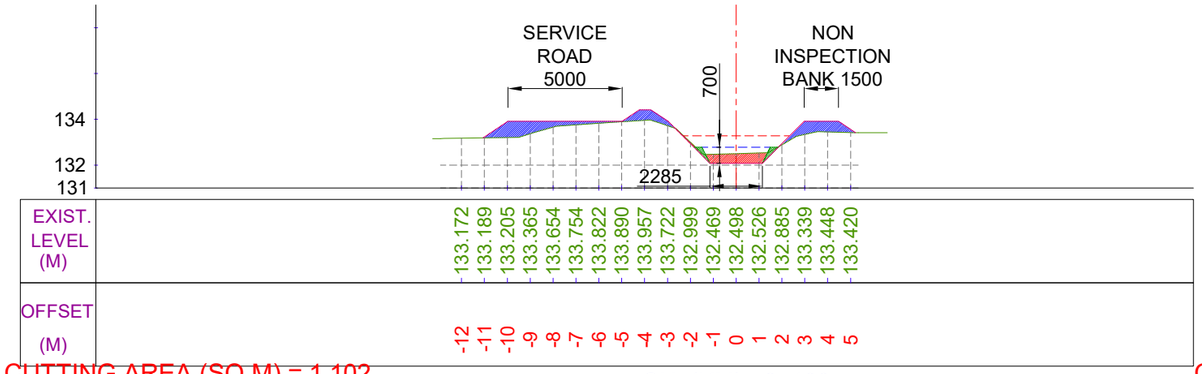

| | | |

# X SECTION OF BARIAWA MINOR



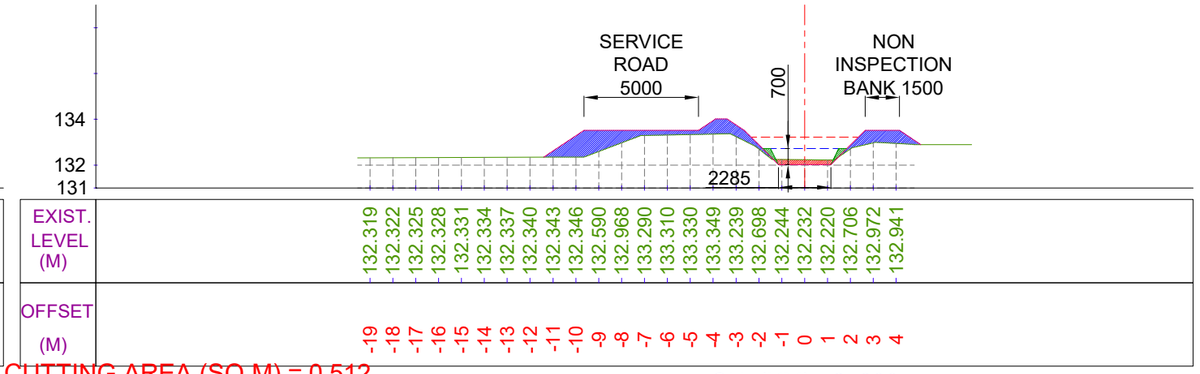

| | | |

# X SECTION OF BARIAWA MINOR



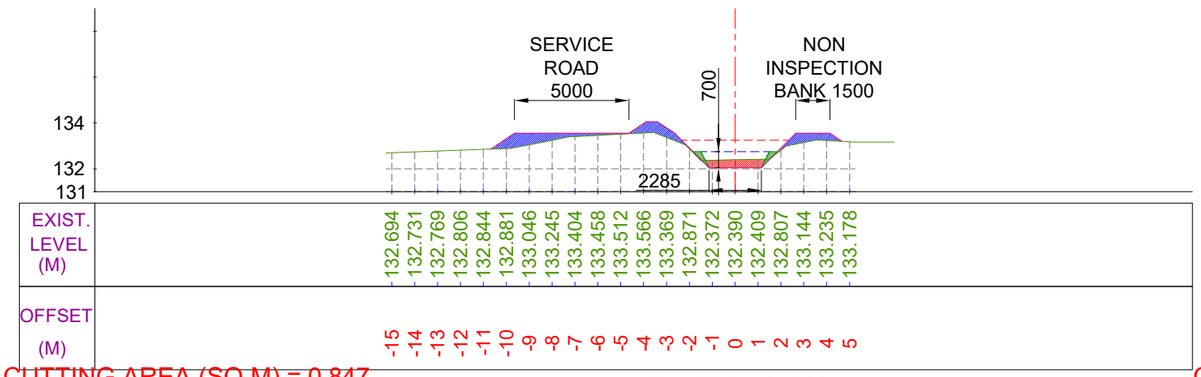

CUTTING AREA (SQ.M) = 1.102
FILLING AREA (SQ.M) = 3.627

CH. (KM):- 2+100
DESIGNED BED LEVEL = 132.075 M



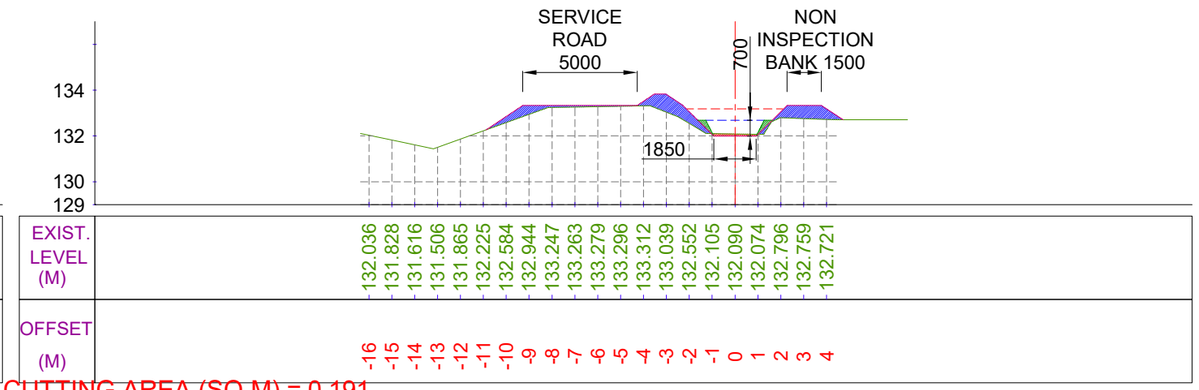

CUTTING AREA (SQ.M) = 0.512
FILLING AREA (SQ.M) = 6.012

CH. (KM):- 2+300
DESIGNED BED LEVEL = 132.018 M




CUTTING AREA (SQ.M) = 0.847
FILLING AREA (SQ.M) = 3.118

CH. (KM):- 2+200
DESIGNED BED LEVEL = 132.046 M




CUTTING AREA (SQ.M) = 0.191
FILLING AREA (SQ.M) = 3.902

CH. (KM):- 2+400
DESIGNED BED LEVEL = 131.989 M

## LEGEND

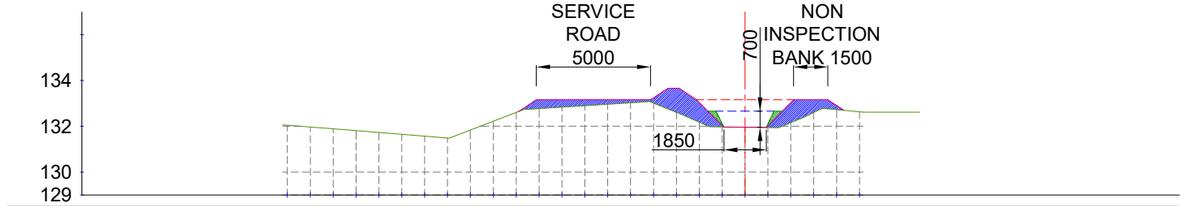
| | | |
|---|---|---|
| CUT AREA | | EXISTING BED LINE |
| | | F.S.L. |
| FILL AREA | | DESIGNED BED LINE |
| | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

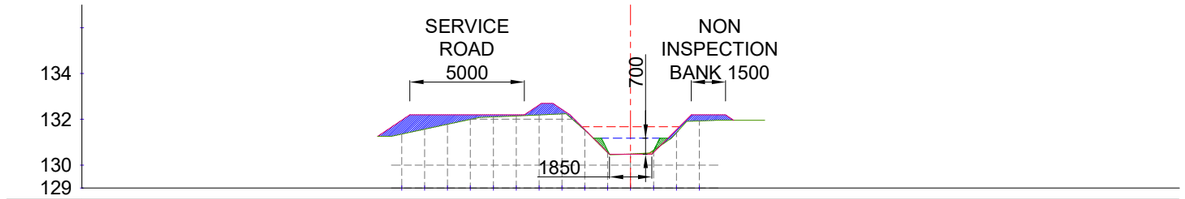
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF BARIAWA MINOR (OFFTAKE FROM RD - 0+975 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC- |

# X SECTION OF BARIAWA MINOR




| | | |

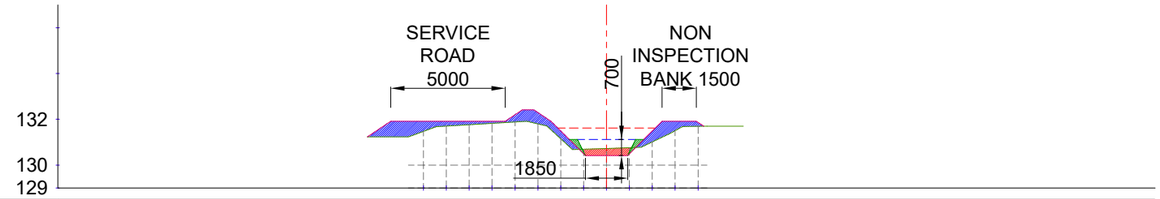
# X SECTION OF BARIAWA MINOR




| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 131.353 | 131.566 | 131.779 | 131.992 | 132.107 | 132.148 | 132.189 | 132.230 | 131.520 | 130.538 | 130.489 | 130.644 | 131.408 | 131.930 |
| OFFSET (M) | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 |

CUTTING AREA (SQ.M) = 0.044
FILLING AREA (SQ.M) = 3.351

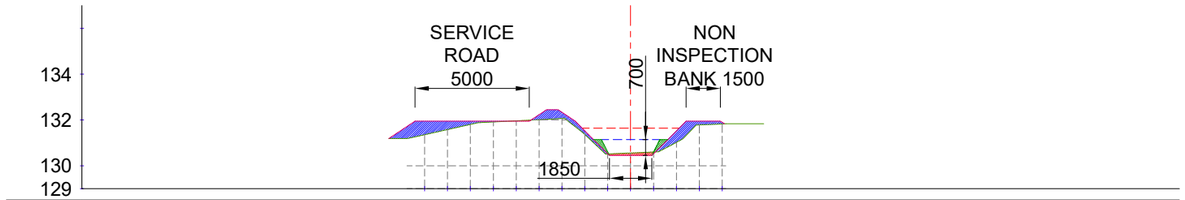
CH. (KM):- 2+900
DESIGNED BED LEVEL = 130.474 M




| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 131.469 | 131.699 | 131.759 | 131.820 | 131.880 | 131.796 | 131.148 | 130.691 | 130.725 | 130.759 | 131.006 | 131.501 | 131.691 |
| OFFSET (M) | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

CUTTING AREA (SQ.M) = 0.618
FILLING AREA (SQ.M) = 4.142

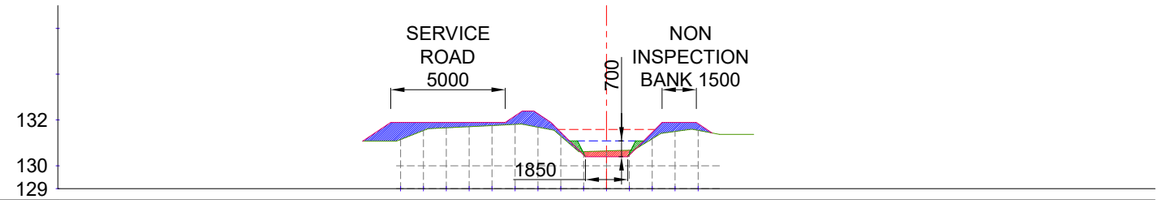
CH. (KM):- 3+100
DESIGNED BED LEVEL = 130.417 M




| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 131.357 | 131.582 | 131.806 | 131.915 | 131.964 | 132.014 | 132.063 | 131.365 | 130.515 | 130.558 | 130.601 | 131.022 | 131.786 | 131.826 |
| OFFSET (M) | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

CUTTING AREA (SQ.M) = 0.238
FILLING AREA (SQ.M) = 3.064

CH. (KM):- 3+000
DESIGNED BED LEVEL = 130.446 M




| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 131.141 | 131.537 | 131.656 | 131.706 | 131.756 | 131.807 | 131.686 | 131.301 | 130.619 | 130.647 | 130.675 | 131.183 | 131.497 | 131.548 |
| OFFSET (M) | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

CUTTING AREA (SQ.M) = 0.512
FILLING AREA (SQ.M) = 4.128

CH. (KM):- 3+200
DESIGNED BED LEVEL = 130.389 M

## LEGEND

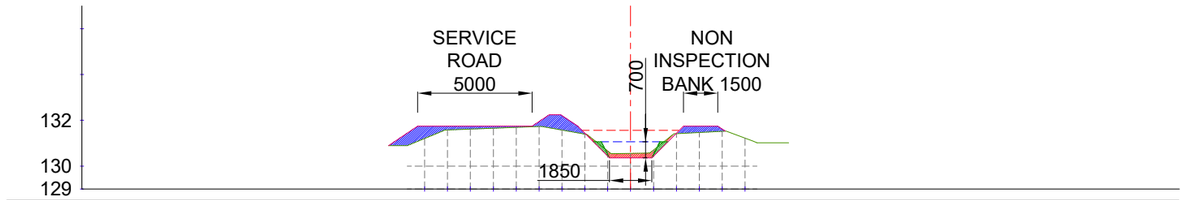
| | |
|---|---|
| CUT AREA | EXISTING BED LINE |
| | F.S.L. |
| FILL AREA | DESIGNED BED LINE |
| | H.G. LINE |

Prepared by :-

WAPCOS LTD.

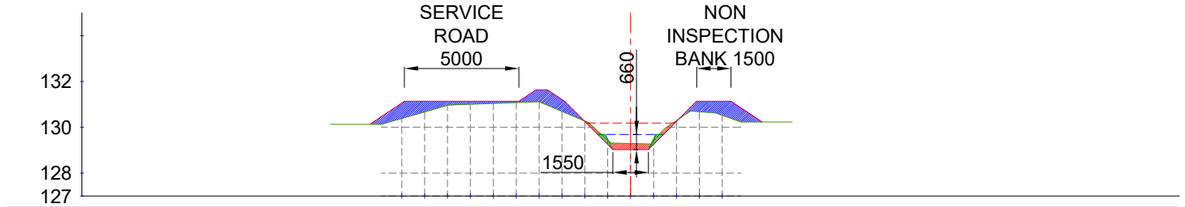
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF BARIAWA MINOR (OFFTAKE FROM RD - 0+975 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC- 8 of 18 |

# X SECTION OF BARIAWA MINOR



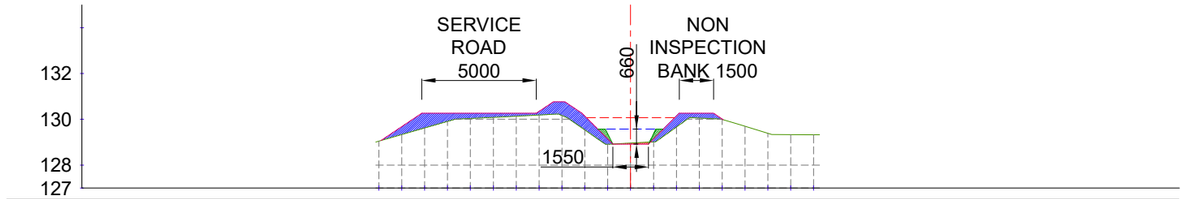

| | | |

# X SECTION OF BARIAWA MINOR




| | | |

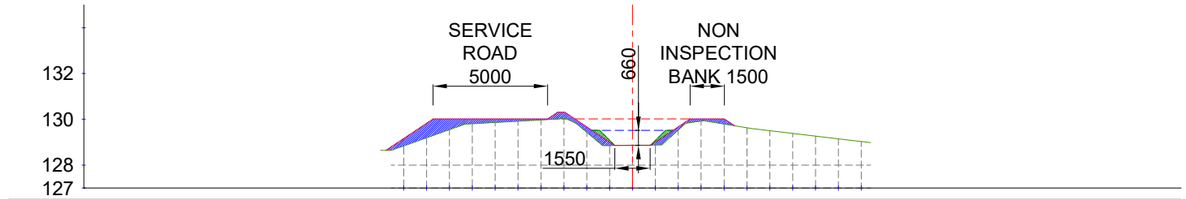
# X SECTION OF BARIAWA MINOR




| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 129.048 | 129.335 | 129.621 | 129.908 | 130.038 | 130.087 | 130.136 | 130.185 | 130.161 | 129.531 | 128.903 | 128.956 | 129.010 | 129.657 | 130.050 | 129.997 | 129.690 | 129.383 | 129.329 | 129.325 |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

CUTTING AREA (SQ.M) = 0.071
FILLING AREA (SQ.M) = 4.290

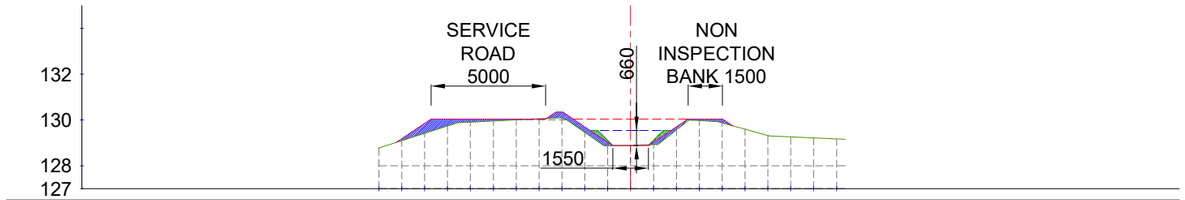
CH. (KM):- 4+100
DESIGNED BED LEVEL = 128.912 M




| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 128.838 | 129.192 | 129.545 | 129.803 | 129.859 | 129.916 | 129.972 | 130.028 | 129.435 | 128.851 | 128.865 | 128.878 | 129.527 | 129.920 | 129.795 | 129.629 | 129.501 | 129.382 | 129.264 | 129.145 | 129.026 |
| OFFSET (M) | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

CUTTING AREA (SQ.M) = 0.017
FILLING AREA (SQ.M) = 3.142

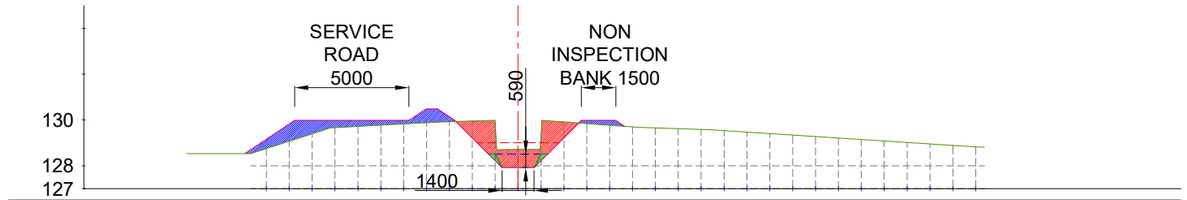
CH. (KM):- 4+300
DESIGNED BED LEVEL = 128.854 M




| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 128.774 | 129.096 | 129.417 | 129.738 | 129.905 | 129.954 | 130.003 | 130.052 | 130.082 | 129.455 | 128.869 | 128.897 | 128.925 | 129.565 | 129.972 | 129.874 | 129.598 | 129.323 | 129.261 | 129.214 | 129.168 |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

CUTTING AREA (SQ.M) = 0.029
FILLING AREA (SQ.M) = 2.137

CH. (KM):- 4+200
DESIGNED BED LEVEL = 128.883 M




| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 128.750 | 129.073 | 129.397 | 129.669 | 129.722 | 129.775 | 129.828 | 129.881 | 129.922 | 129.951 | 129.892 | 128.710 | 129.313 | 129.915 | 129.843 | 129.771 | 129.699 | 129.655 | 129.623 | 129.590 | 129.537 | 129.473 | 129.408 | 129.344 | 129.279 | 129.214 | 129.150 | 129.085 | 129.021 | 128.956 | 128.891 | 128.827 |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

CUTTING AREA (SQ.M) = 4.357
FILLING AREA (SQ.M) = 3.809

CH. (KM):- 4+400
DESIGNED BED LEVEL = 127.912 M

## LEGEND

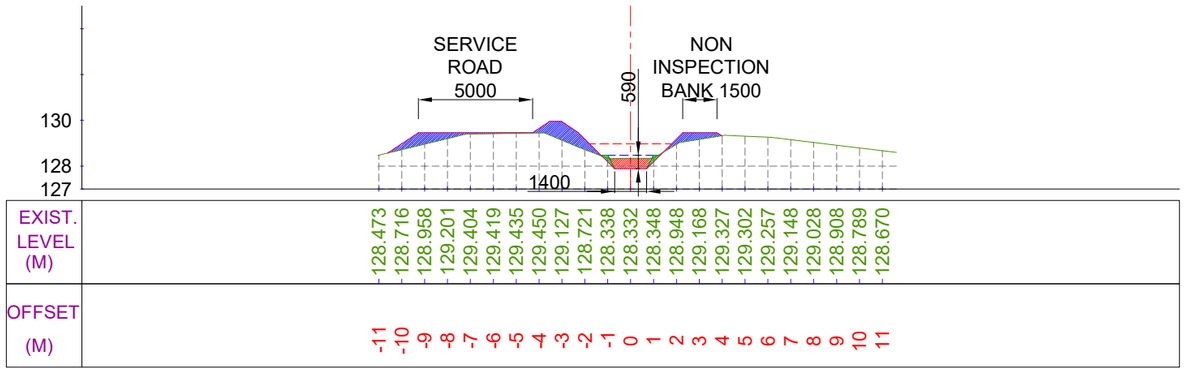
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

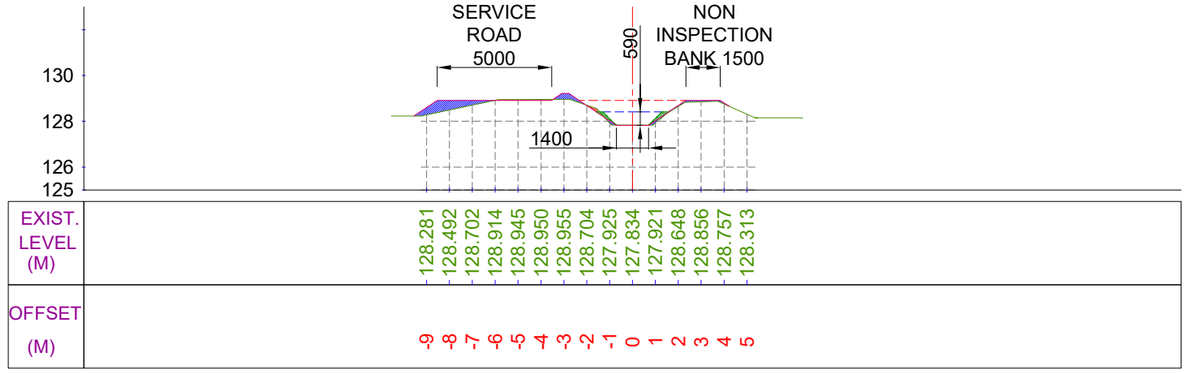
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF BARIAWA MINOR (OFFTAKE FROM RD - 0+975 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC- 11 of 18 |

# X SECTION OF BARIAWA MINOR



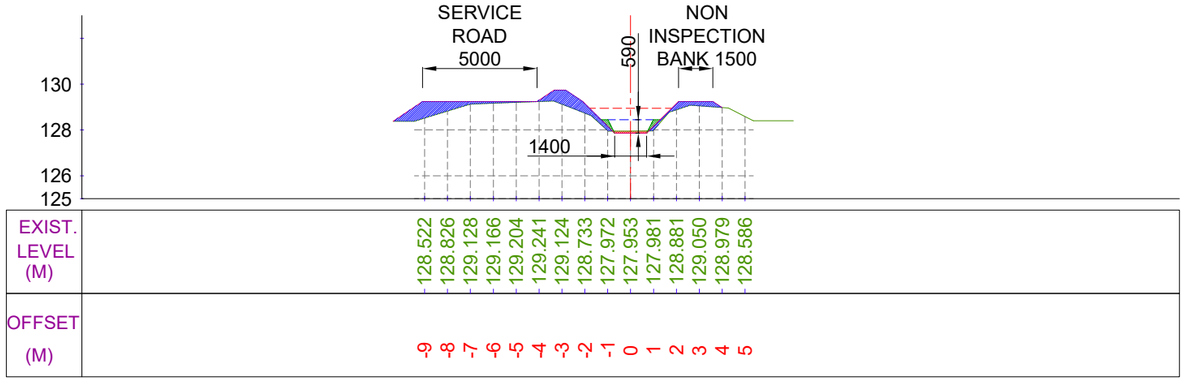

CUTTING AREA (SQ.M) = 0.735
FILLING AREA (SQ.M) = 3.219

CH. (KM):- 4+500
DESIGNED BED LEVEL = 127.883 M



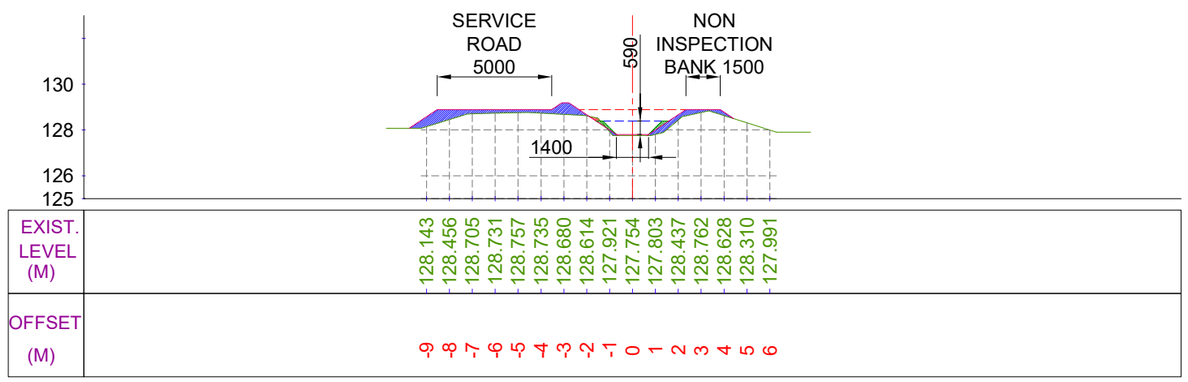

CUTTING AREA (SQ.M) = 0.128
FILLING AREA (SQ.M) = 1.431

CH. (KM):- 4+700
DESIGNED BED LEVEL = 127.826 M




CUTTING AREA (SQ.M) = 0.143
FILLING AREA (SQ.M) = 3.396

CH. (KM):- 4+600
DESIGNED BED LEVEL = 127.855 M




CUTTING AREA (SQ.M) = 0.039
FILLING AREA (SQ.M) = 2.757

CH. (KM):- 4+800
DESIGNED BED LEVEL = 127.798 M

## LEGEND

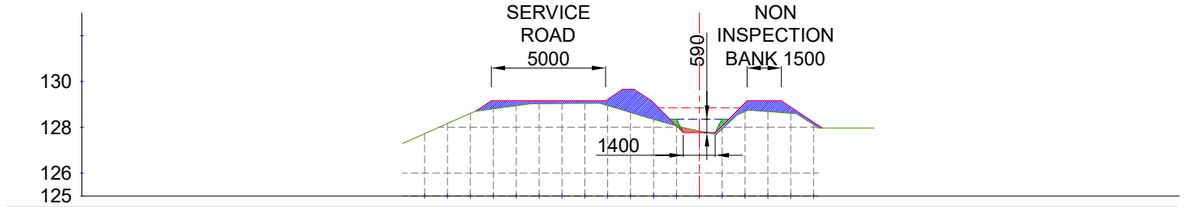
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

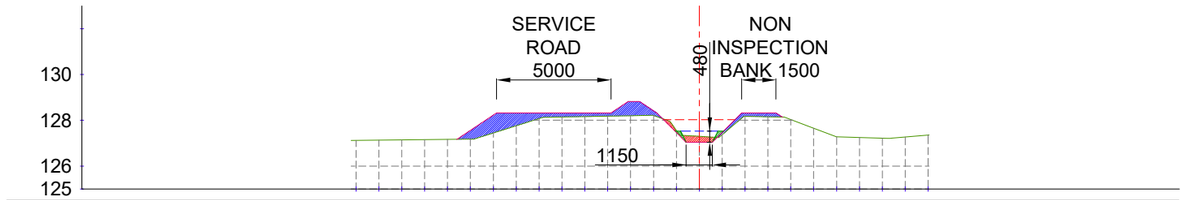
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF BARIAWA MINOR (OFFTAKE FROM RD - 0+975 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC- |

# X SECTION OF BARIAWA MINOR



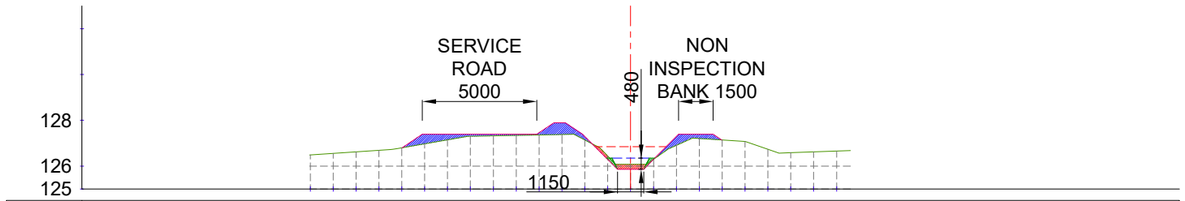

| | | |

# X SECTION OF BARIAWA MINOR



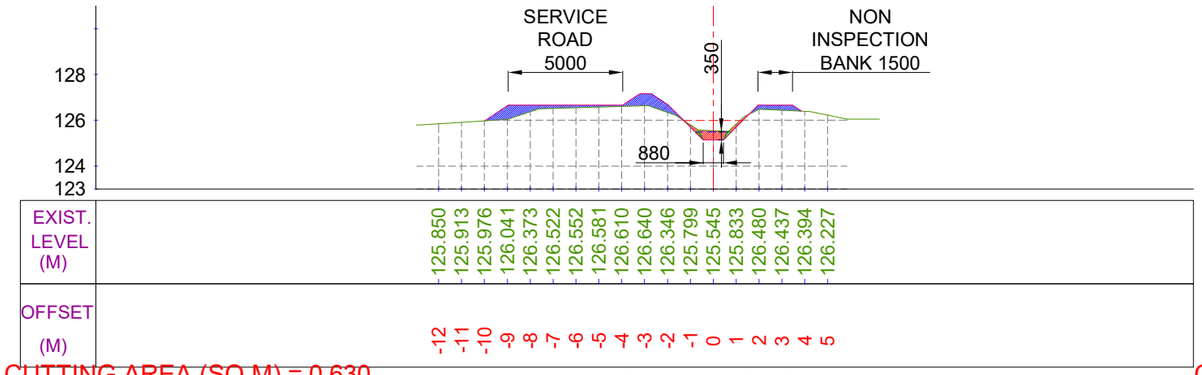

| | | |

# X SECTION OF BARIAWA MINOR



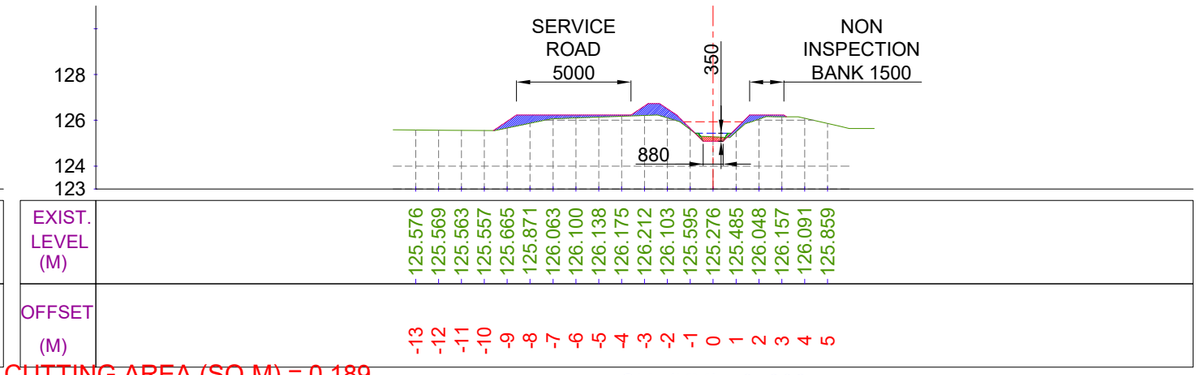

| | | |

# X SECTION OF BARIAWA MINOR



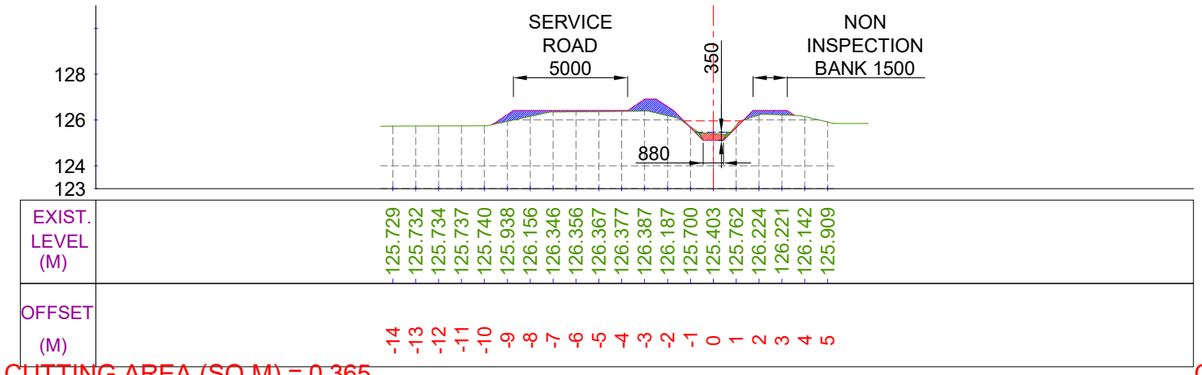

CUTTING AREA (SQ.M) = 0.630
FILLING AREA (SQ.M) = 2.491

CH. (KM):- 6+100
DESIGNED BED LEVEL = 125.139 M



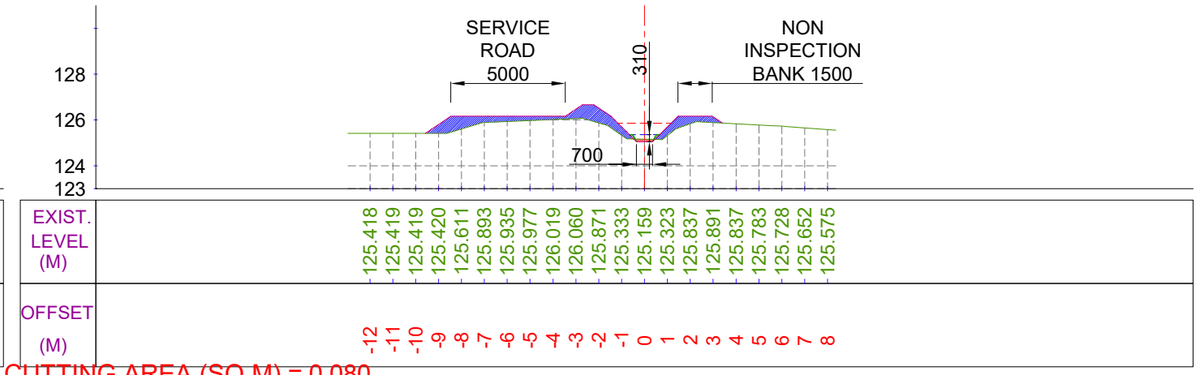

CUTTING AREA (SQ.M) = 0.189
FILLING AREA (SQ.M) = 2.328

CH. (KM):- 6+300
DESIGNED BED LEVEL = 125.082 M




CUTTING AREA (SQ.M) = 0.365
FILLING AREA (SQ.M) = 1.993

CH. (KM):- 6+200
DESIGNED BED LEVEL = 125.111 M




CUTTING AREA (SQ.M) = 0.080
FILLING AREA (SQ.M) = 4.030

CH. (KM):- 6+400
DESIGNED BED LEVEL = 125.053 M

## LEGEND

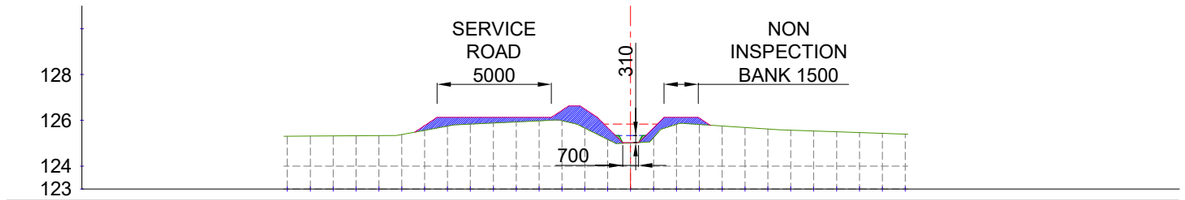
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF BARIAWA MINOR (OFFTAKE FROM RD - 0+975 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC- |

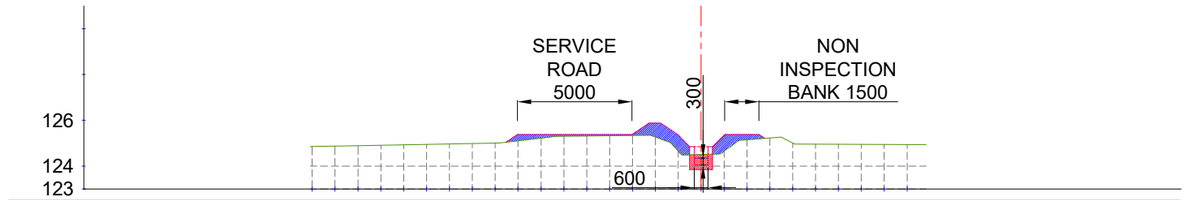
# X SECTION OF BARIAWA MINOR




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 125.305 | 125.311 | 125.318 | 125.325 | 125.332 | 125.380 | 125.561 | 125.744 | 125.831 | 125.880 | 125.929 | 125.979 | 125.981 | 125.660 | 125.161 | 125.011 | 125.239 | 125.820 | 125.813 | 125.748 | 125.684 | 125.619 | 125.569 | 125.533 | 125.498 | 125.462 | 125.426 | 125.390 |
| OFFSET (M) | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 4.263

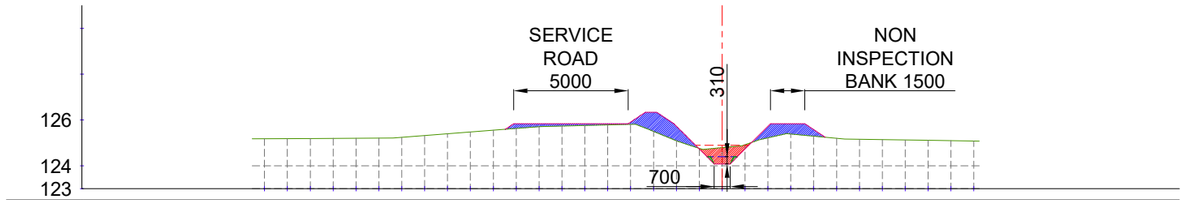
CH. (KM):- 6+500
DESIGNED BED LEVEL = 125.023 M




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 124.853 | 124.871 | 124.890 | 124.908 | 124.927 | 124.946 | 124.964 | 124.983 | 125.001 | 125.105 | 125.222 | 125.305 | 125.317 | 125.328 | 125.340 | 125.269 | 124.651 | 124.504 | 124.642 | 125.150 | 125.227 | 125.004 | 124.955 | 124.951 | 124.948 | 124.944 | 124.941 |
| OFFSET (M) | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

CUTTING AREA (SQ.M) = 0.657
FILLING AREA (SQ.M) = 2.653

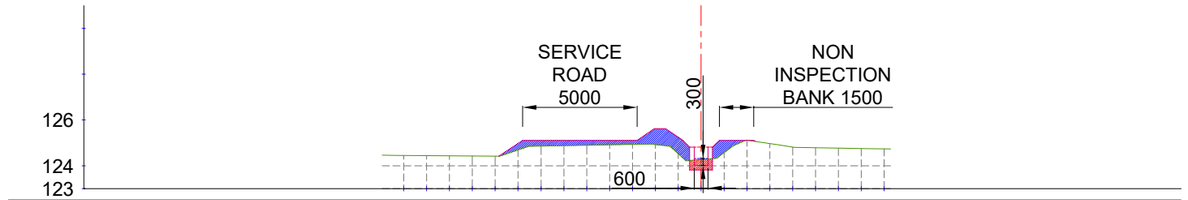
CH. (KM):- 6+700
DESIGNED BED LEVEL = 124.047 M




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 125.177 | 125.183 | 125.189 | 125.194 | 125.200 | 125.206 | 125.239 | 125.317 | 125.394 | 125.472 | 125.549 | 125.627 | 125.704 | 125.734 | 125.760 | 125.786 | 125.813 | 125.497 | 125.092 | 124.757 | 124.791 | 124.921 | 125.219 | 125.383 | 125.291 | 125.199 | 125.156 | 125.141 | 125.125 | 125.110 | 125.095 | 125.079 |
| OFFSET (M) | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

CUTTING AREA (SQ.M) = 0.990
FILLING AREA (SQ.M) = 3.375

CH. (KM):- 6+600
DESIGNED BED LEVEL = 124.079 M




| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 124.451 | 124.442 | 124.433 | 124.425 | 124.416 | 124.687 | 124.861 | 124.878 | 124.895 | 124.913 | 124.930 | 124.926 | 124.521 | 124.270 | 124.564 | 125.120 | 124.968 | 124.815 | 124.789 | 124.771 | 124.753 | 124.736 |
| OFFSET (M) | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

CUTTING AREA (SQ.M) = 0.456
FILLING AREA (SQ.M) = 3.294

CH. (KM):- 6+800
DESIGNED BED LEVEL = 124.014 M

## LEGEND

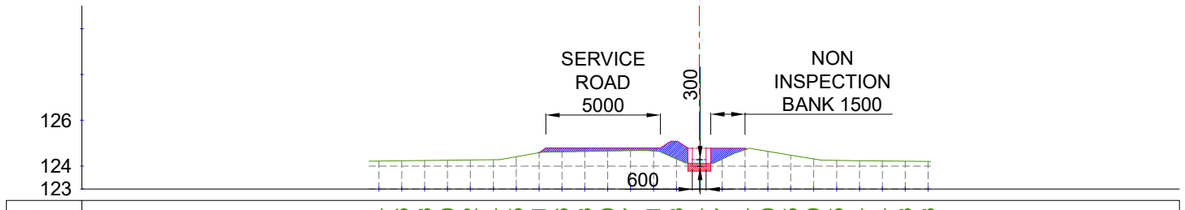
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF BARIAWA MINOR (OFFTAKE FROM RD - 0+975 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ XSEC- 17 of 18 |

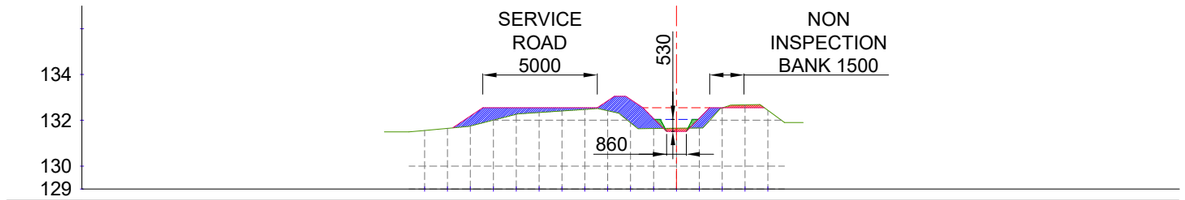
# X SECTION OF BARIAWA MINOR




| | | |

# *ITMA MINOR*

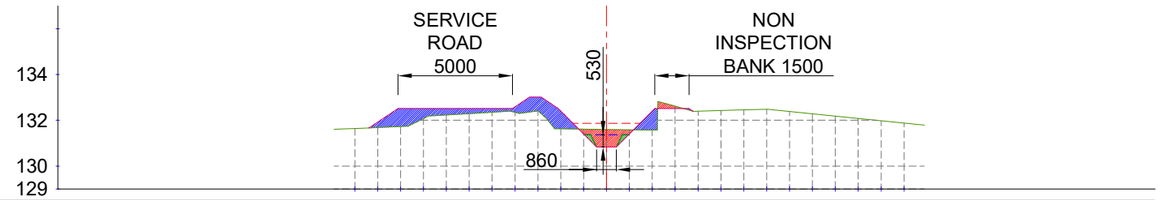
# X SECTION OF ITMA MINOR




| EXIST. LEVEL (M) | 131.558 | 131.650 | 131.755 | 132.008 | 132.261 | 132.340 | 132.408 | 132.477 | 132.415 | 131.895 | 131.640 | 131.650 | 131.659 | 132.534 | 132.671 | 132.427 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

CUTTING AREA (SQ.M) = 0.324
FILLING AREA (SQ.M) = 3.980

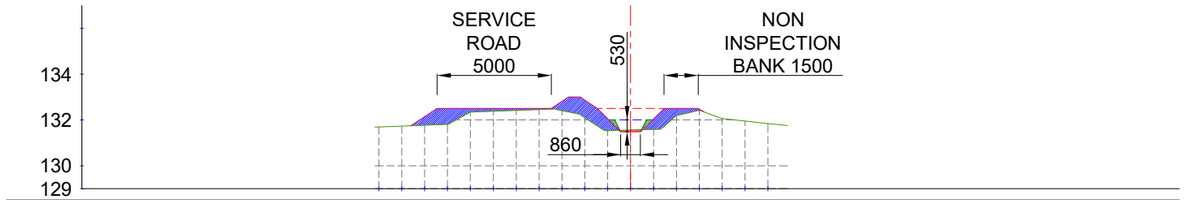
CH. (KM):- 0+100
DESIGNED BED LEVEL = 131.513 M




| EXIST. LEVEL (M) | 131.639 | 131.681 | 131.723 | 132.071 | 132.230 | 132.290 | 132.350 | 132.345 | 132.408 | 131.626 | 131.612 | 131.598 | 131.585 | 131.573 | 132.617 | 132.398 | 132.427 | 132.455 | 132.482 | 132.387 | 132.286 | 132.184 | 132.082 | 131.979 | 131.876 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

CUTTING AREA (SQ.M) = 1.275
FILLING AREA (SQ.M) = 4.396

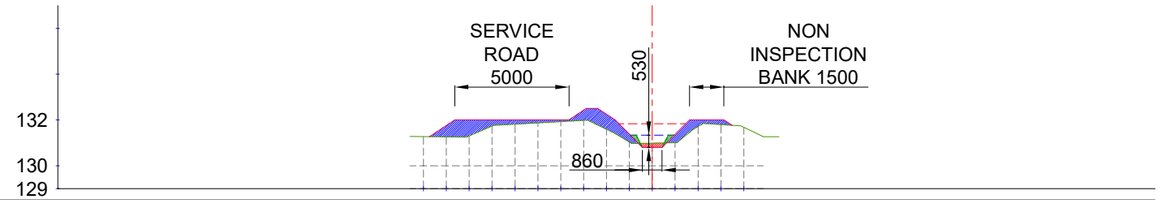
CH. (KM):- 0+300
DESIGNED BED LEVEL = 130.836 M




| EXIST. LEVEL (M) | 131.699 | 131.735 | 131.771 | 131.807 | 132.343 | 132.380 | 132.417 | 132.453 | 132.407 | 132.097 | 131.533 | 131.560 | 131.586 | 132.191 | 132.424 | 132.057 | 131.951 | 131.844 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

CUTTING AREA (SQ.M) = 0.073
FILLING AREA (SQ.M) = 4.081

CH. (KM):- 0+200
DESIGNED BED LEVEL = 131.479 M




| EXIST. LEVEL (M) | 131.270 | 131.259 | 131.307 | 131.734 | 131.816 | 131.870 | 131.925 | 131.979 | 131.598 | 131.034 | 130.989 | 131.007 | 131.715 | 131.798 | 131.676 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

CUTTING AREA (SQ.M) = 0.178
FILLING AREA (SQ.M) = 4.039

CH. (KM):- 0+400
DESIGNED BED LEVEL = 130.803 M

## LEGEND

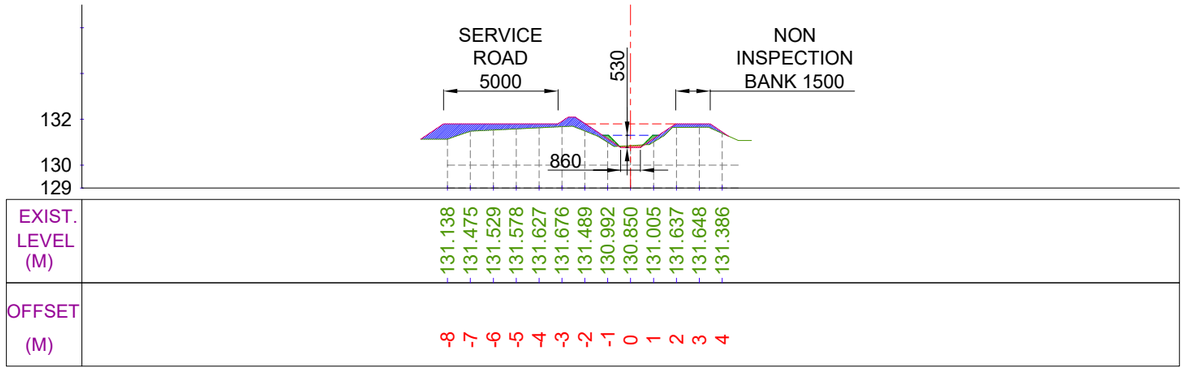
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

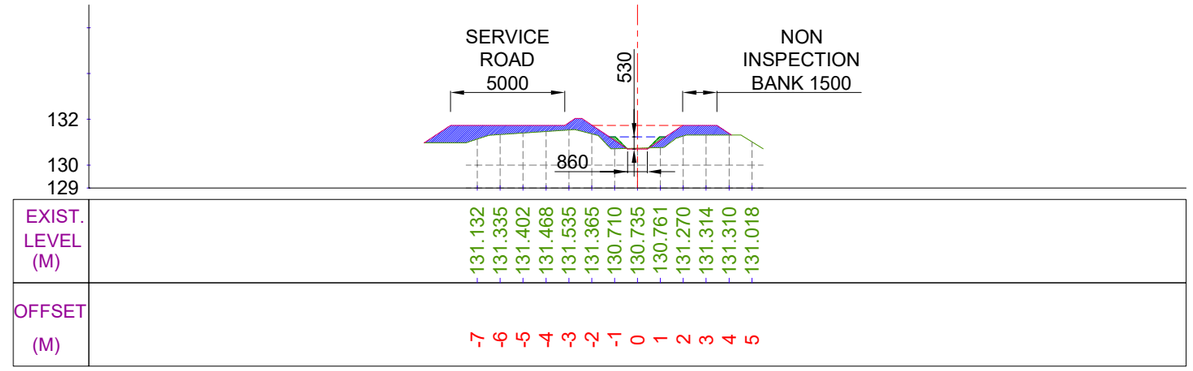
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- 1 of 12 |

# X SECTION OF ITMA MINOR



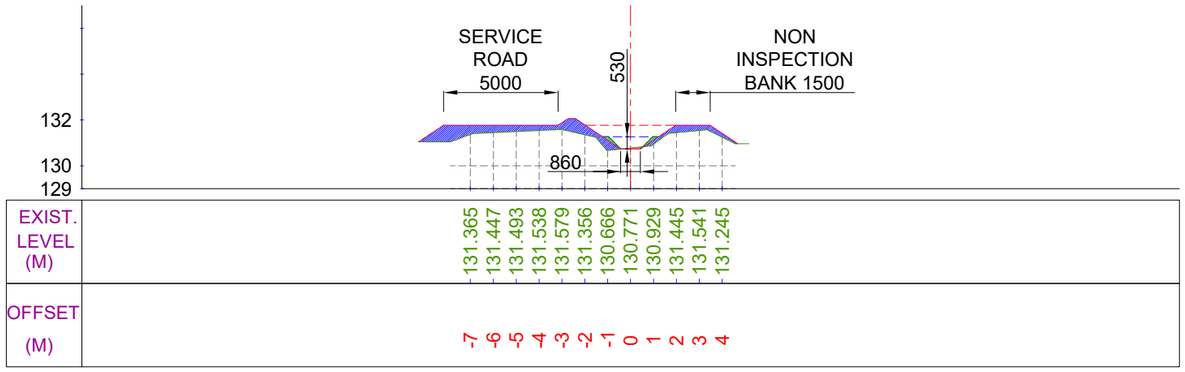

CUTTING AREA (SQ.M) = 0.077
FILLING AREA (SQ.M) = 2.957

CH. (KM):- 0+500
DESIGNED BED LEVEL = 130.769 M



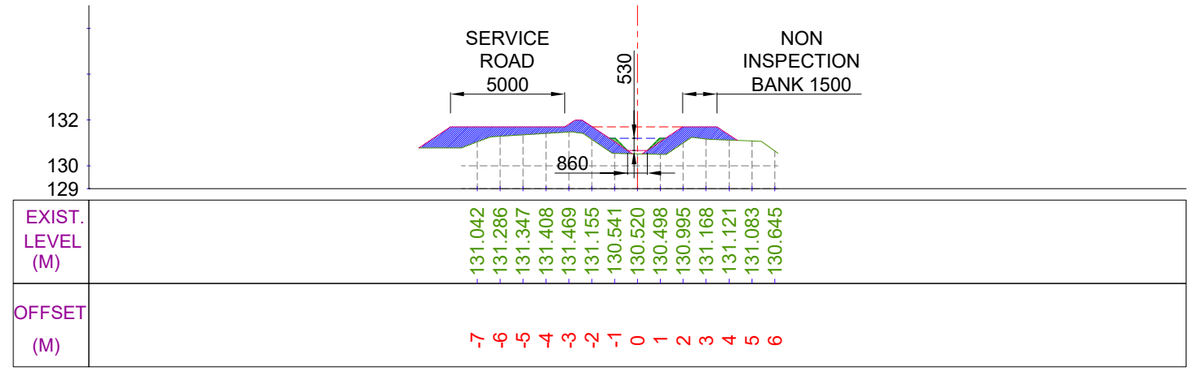

CUTTING AREA (SQ.M) = 0.029
FILLING AREA (SQ.M) = 4.839

CH. (KM):- 0+700
DESIGNED BED LEVEL = 130.703 M




CUTTING AREA (SQ.M) = 0.034
FILLING AREA (SQ.M) = 4.002

CH. (KM):- 0+600
DESIGNED BED LEVEL = 130.736 M




CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 6.337

CH. (KM):- 0+800
DESIGNED BED LEVEL = 130.669 M

## LEGEND

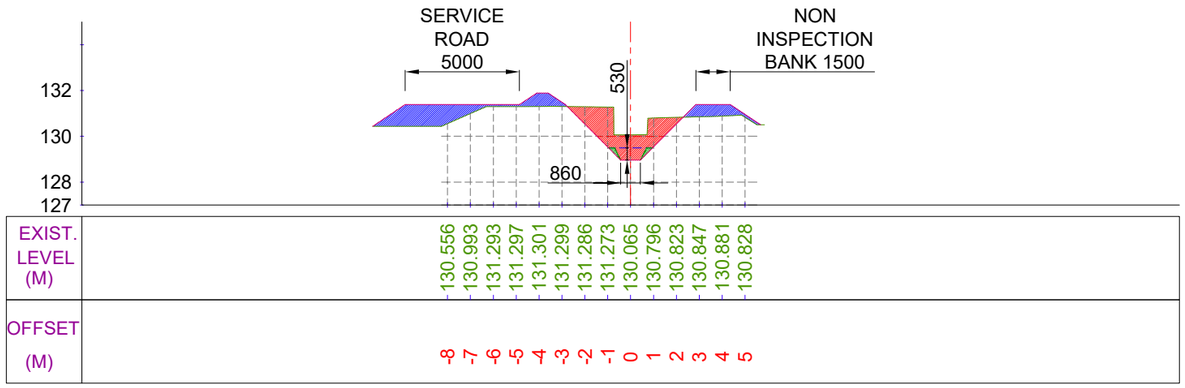
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

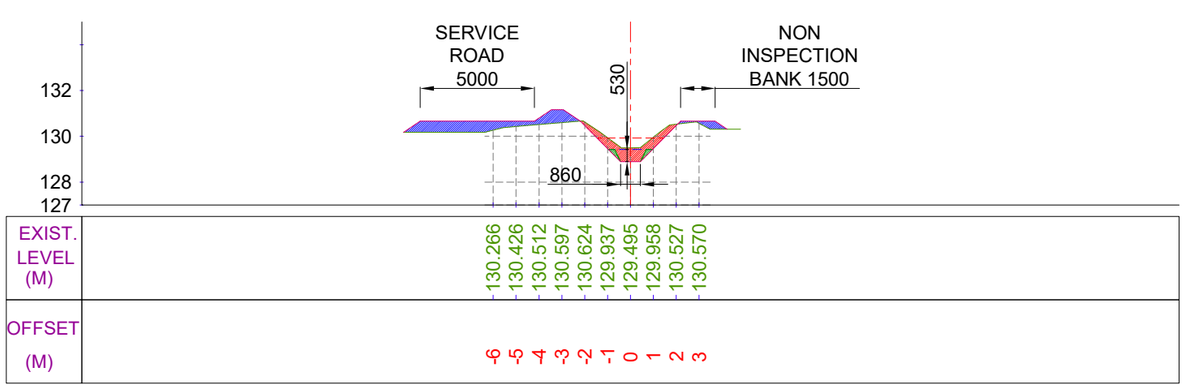
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- 2 of 12 |

# X SECTION OF ITMA MINOR



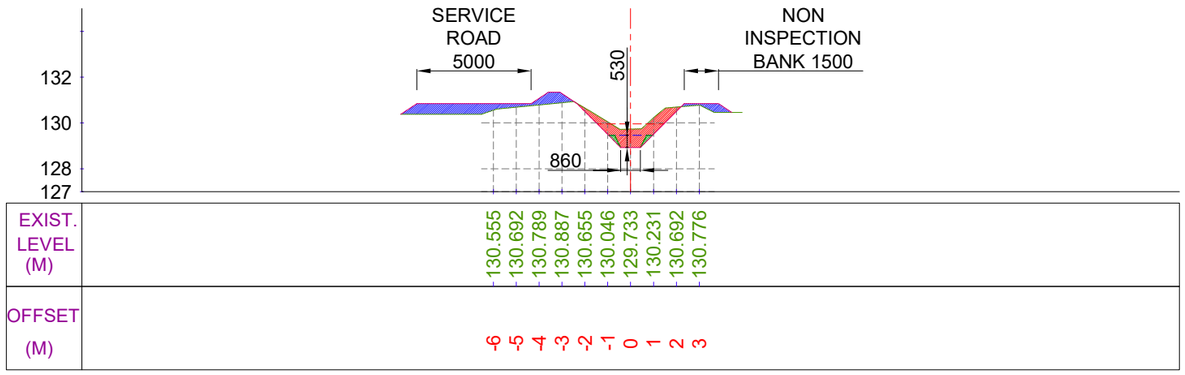

CUTTING AREA (SQ.M) = 4.620
FILLING AREA (SQ.M) = 5.302

CH. (KM):- 0+900
DESIGNED BED LEVEL = 128.960 M



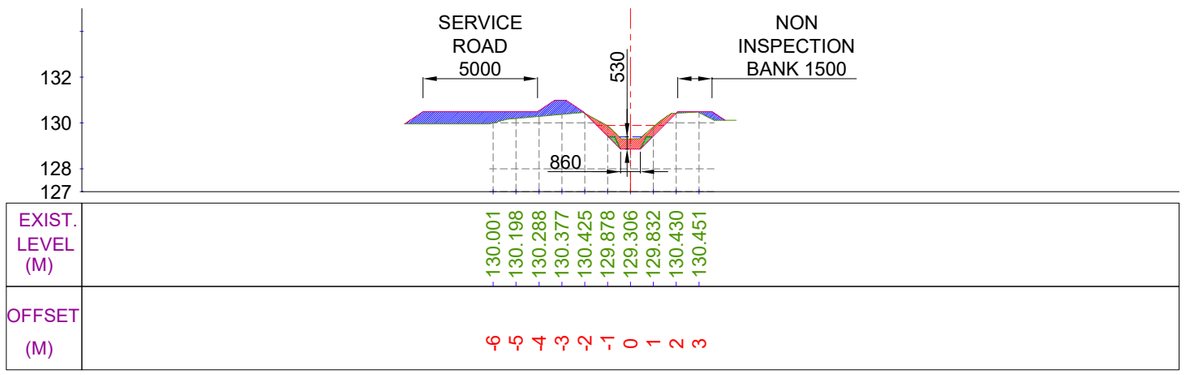

CUTTING AREA (SQ.M) = 1.705
FILLING AREA (SQ.M) = 3.255

CH. (KM):- 1+100
DESIGNED BED LEVEL = 128.893 M




CUTTING AREA (SQ.M) = 2.324
FILLING AREA (SQ.M) = 2.964

CH. (KM):- 1+000
DESIGNED BED LEVEL = 128.927 M




CUTTING AREA (SQ.M) = 1.255
FILLING AREA (SQ.M) = 3.611

CH. (KM):- 1+200
DESIGNED BED LEVEL = 128.860 M

## LEGEND

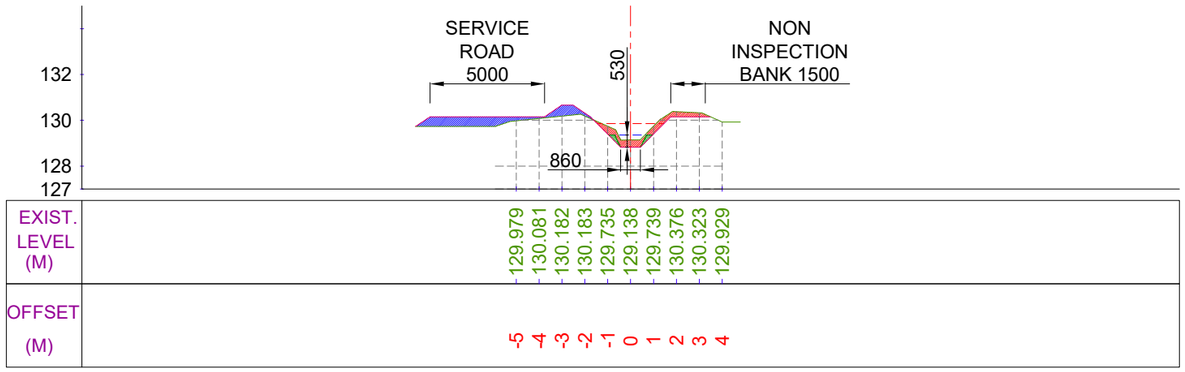
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

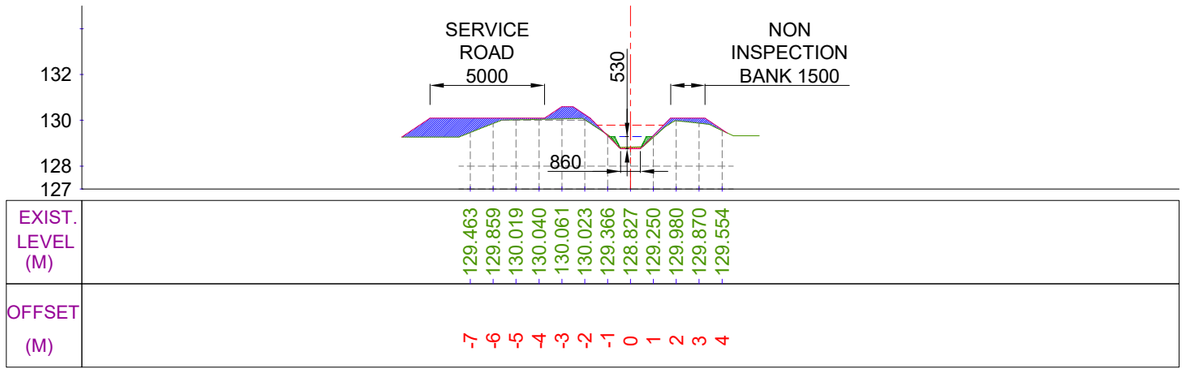
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- 3 of 12 |

# X SECTION OF ITMA MINOR



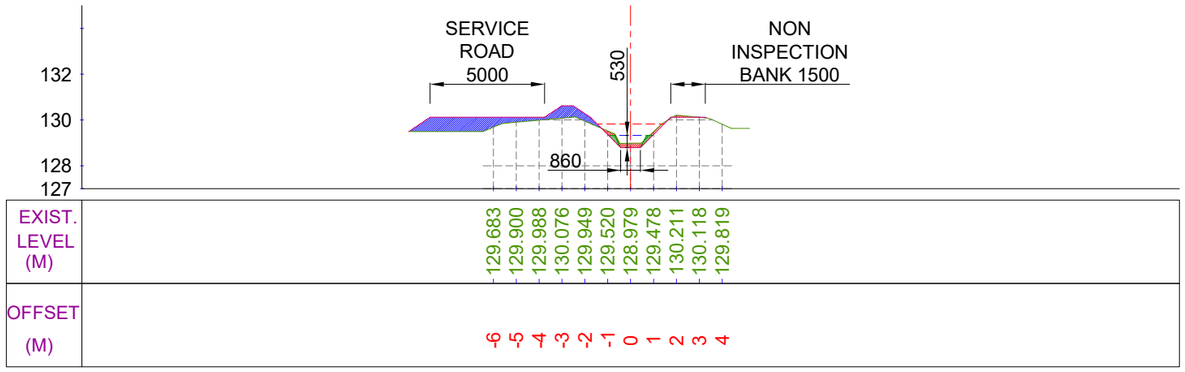

CUTTING AREA (SQ.M) = 1.185
FILLING AREA (SQ.M) = 2.342

CH. (KM):- 1+300
DESIGNED BED LEVEL = 128.827 M



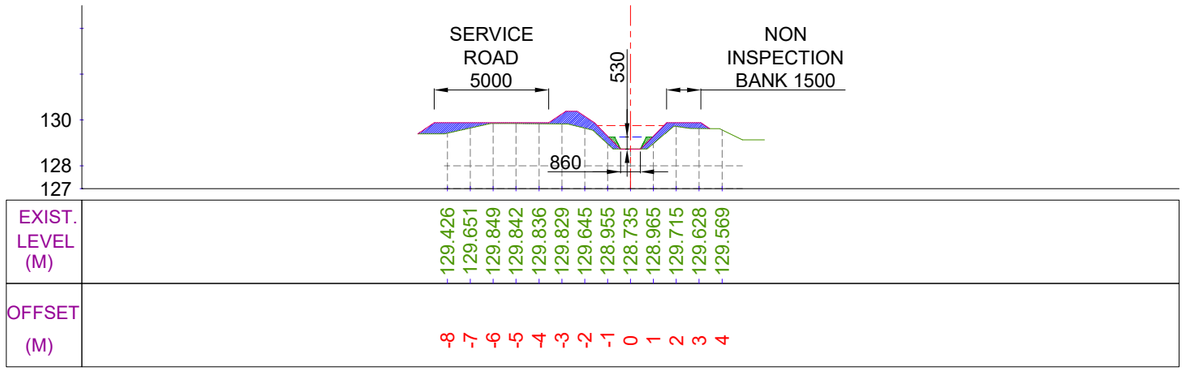

CUTTING AREA (SQ.M) = 0.065
FILLING AREA (SQ.M) = 3.777

CH. (KM):- 1+500
DESIGNED BED LEVEL = 128.760 M




CUTTING AREA (SQ.M) = 0.373
FILLING AREA (SQ.M) = 3.345

CH. (KM):- 1+400
DESIGNED BED LEVEL = 128.793 M




CUTTING AREA (SQ.M) = 0.007
FILLING AREA (SQ.M) = 2.944

CH. (KM):- 1+600
DESIGNED BED LEVEL = 128.727 M

## LEGEND

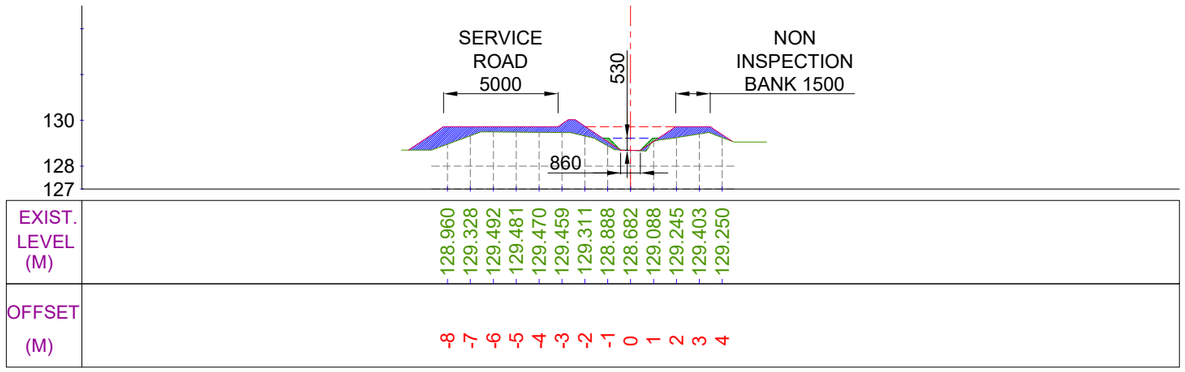
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

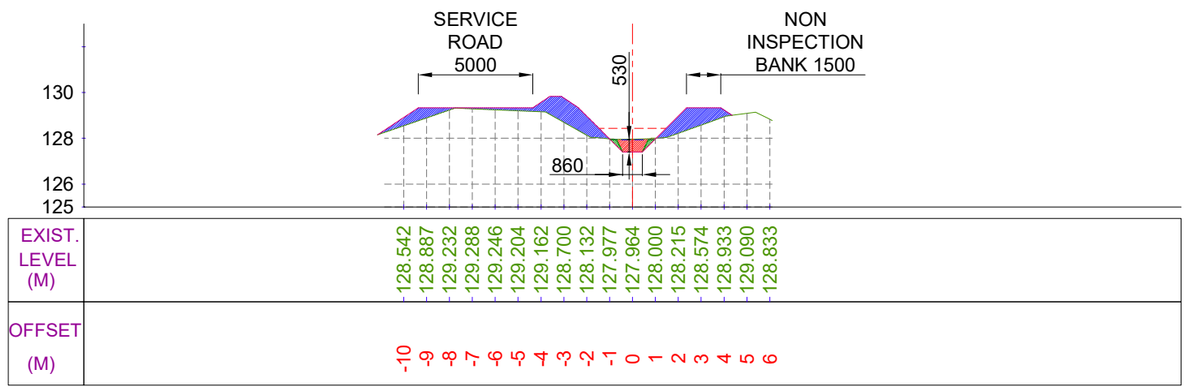
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|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- 4 of 12 |

# X SECTION OF ITMA MINOR



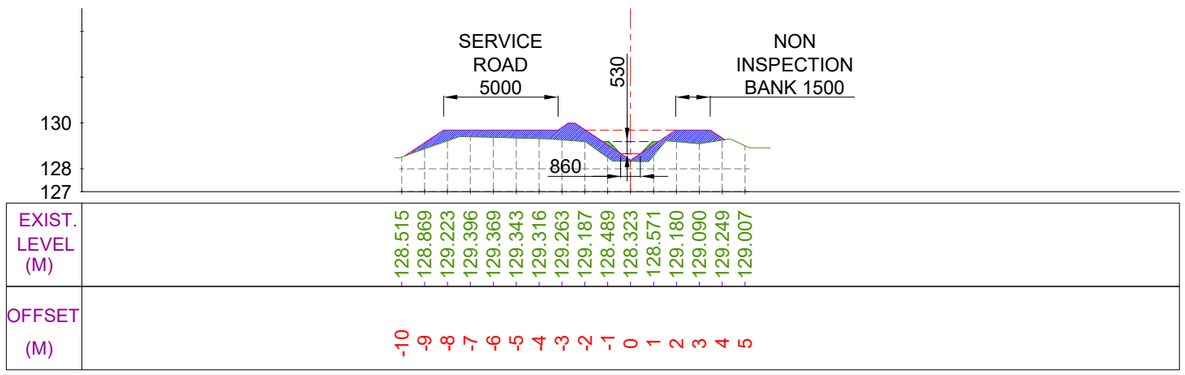

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 4.296

CH. (KM):- 1+700
DESIGNED BED LEVEL = 128.693 M



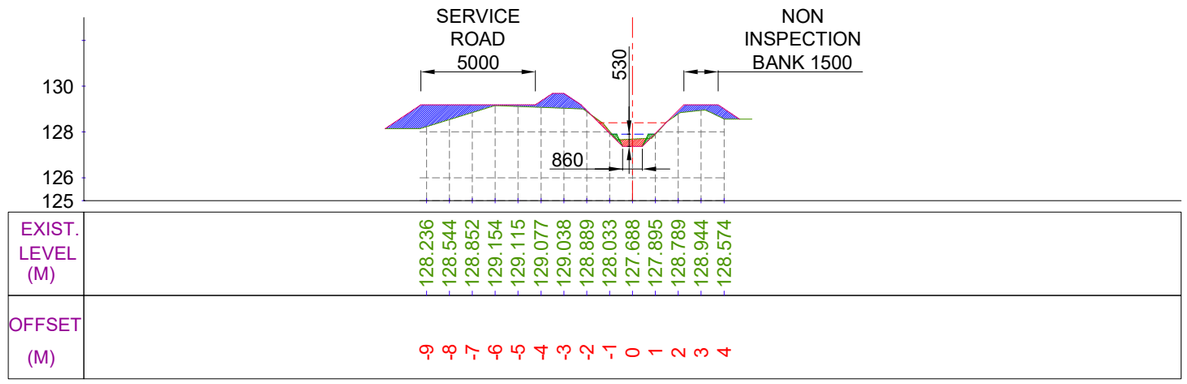

CUTTING AREA (SQ.M) = 0.657
FILLING AREA (SQ.M) = 5.557

CH. (KM):- 1+900
DESIGNED BED LEVEL = 127.407 M




CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 5.531

CH. (KM):- 1+800
DESIGNED BED LEVEL = 128.660 M




CUTTING AREA (SQ.M) = 0.398
FILLING AREA (SQ.M) = 4.427

CH. (KM):- 2+000
DESIGNED BED LEVEL = 127.373 M

## LEGEND

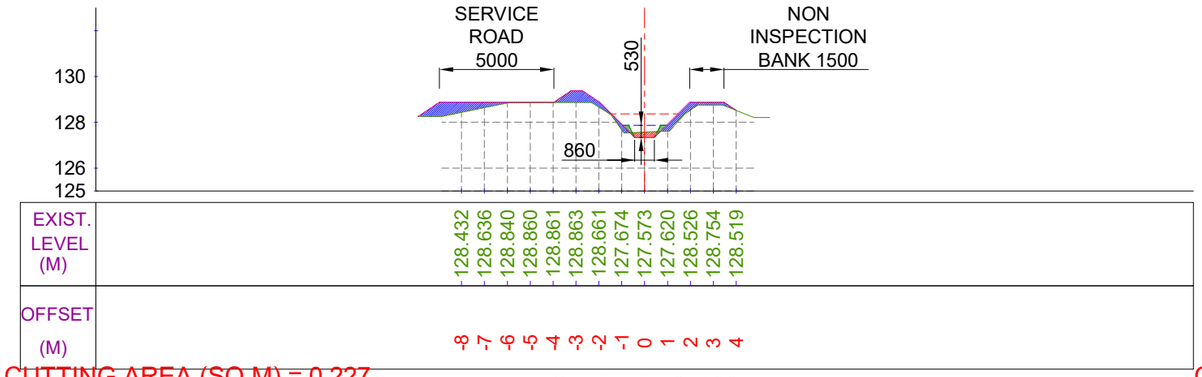
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

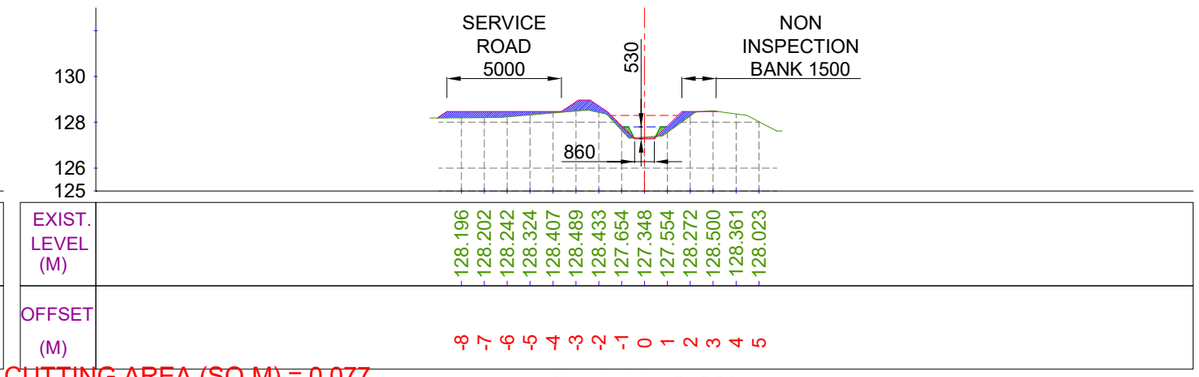
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|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- |

# X SECTION OF ITMA MINOR



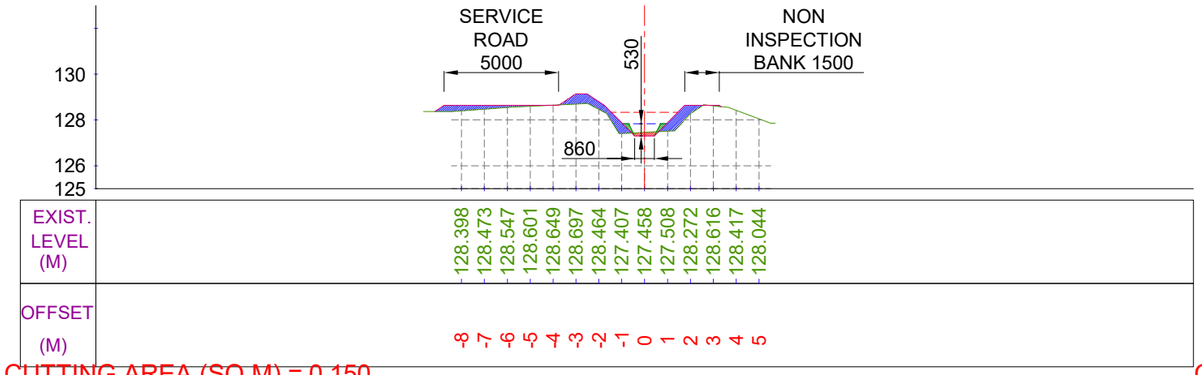

CUTTING AREA (SQ.M) = 0.227
FILLING AREA (SQ.M) = 2.840

CH. (KM):- 2+100
DESIGNED BED LEVEL = 127.340 M



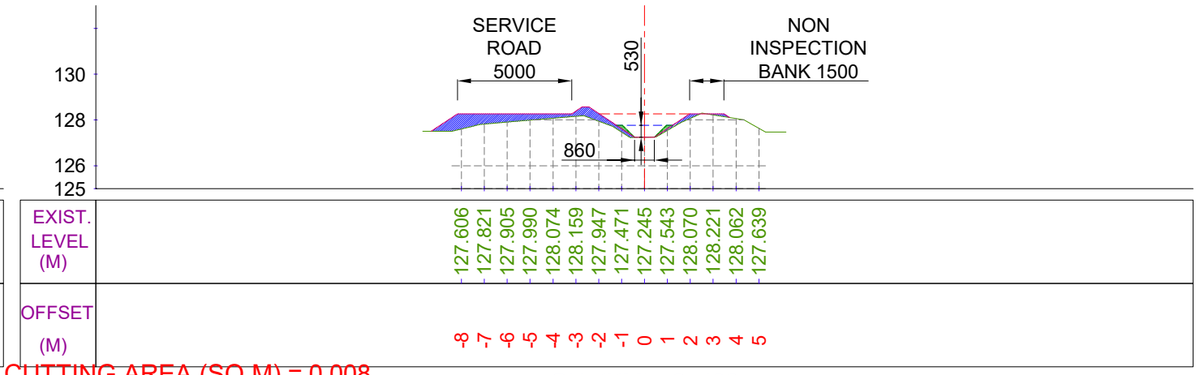

CUTTING AREA (SQ.M) = 0.077
FILLING AREA (SQ.M) = 2.400

CH. (KM):- 2+300
DESIGNED BED LEVEL = 127.273 M




CUTTING AREA (SQ.M) = 0.150
FILLING AREA (SQ.M) = 2.470

CH. (KM):- 2+200
DESIGNED BED LEVEL = 127.307 M




CUTTING AREA (SQ.M) = 0.008
FILLING AREA (SQ.M) = 3.158

CH. (KM):- 2+400
DESIGNED BED LEVEL = 127.240 M

## LEGEND

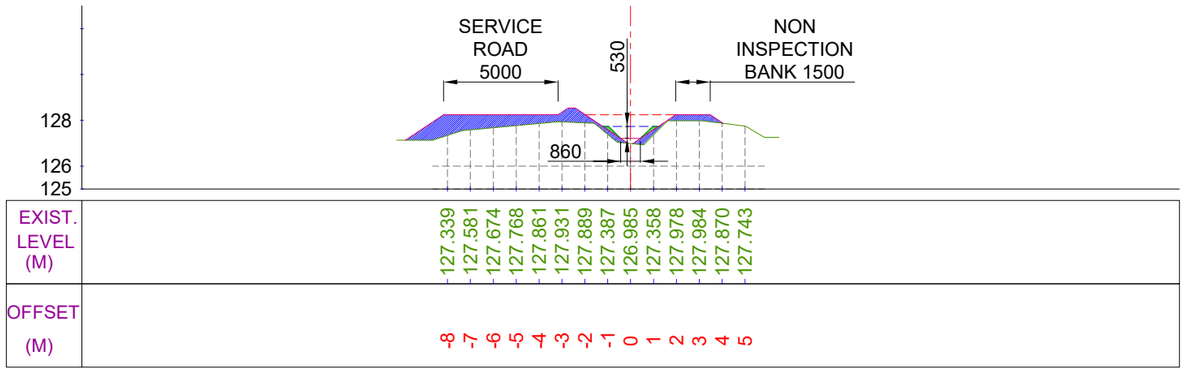
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

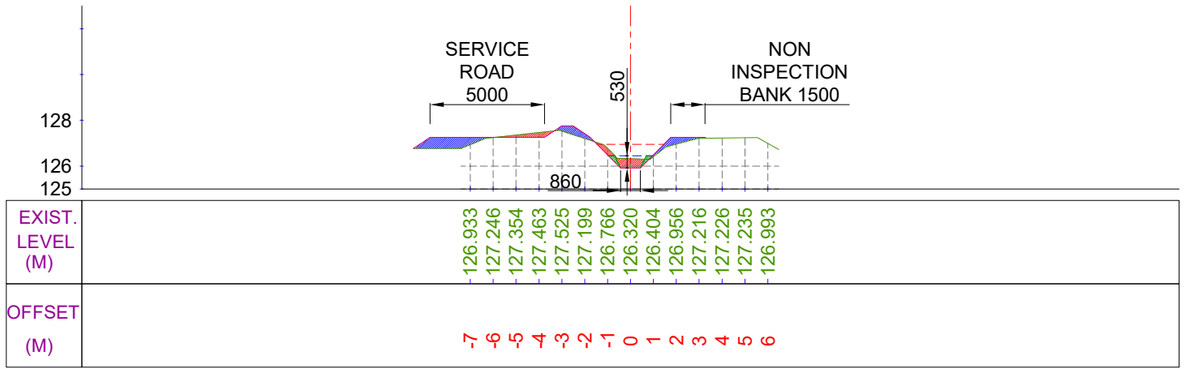
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|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- |

# X SECTION OF ITMA MINOR



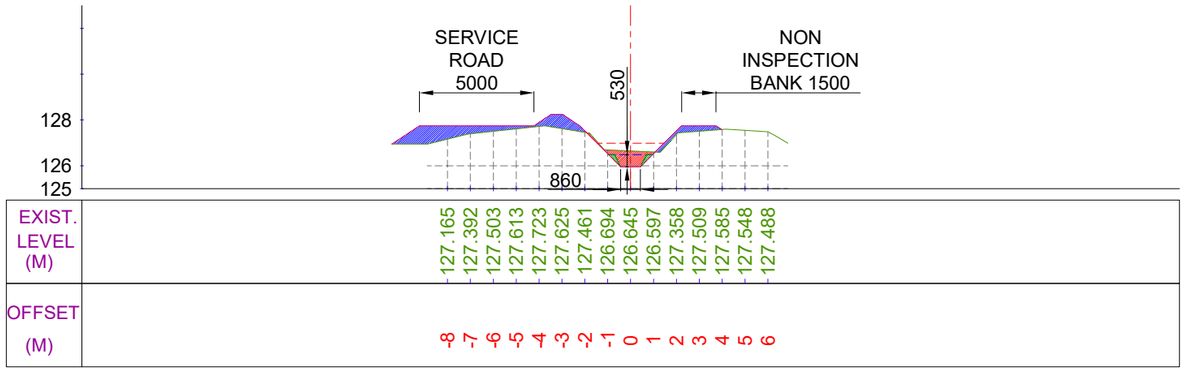

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 5.398

CH. (KM):- 2+500
DESIGNED BED LEVEL = 127.207 M



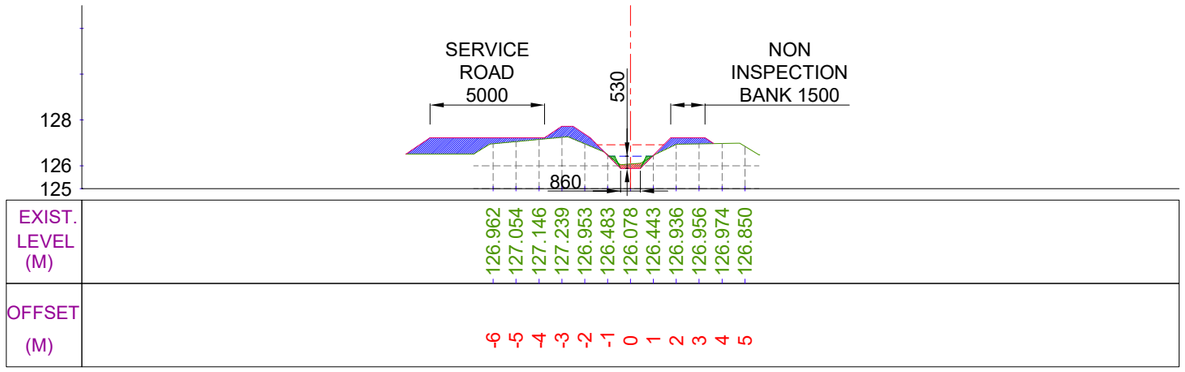

CUTTING AREA (SQ.M) = 0.895
FILLING AREA (SQ.M) = 1.908

CH. (KM):- 2+700
DESIGNED BED LEVEL = 125.920 M




CUTTING AREA (SQ.M) = 0.984
FILLING AREA (SQ.M) = 3.864

CH. (KM):- 2+600
DESIGNED BED LEVEL = 125.953 M




CUTTING AREA (SQ.M) = 0.193
FILLING AREA (SQ.M) = 3.958

CH. (KM):- 2+800
DESIGNED BED LEVEL = 125.887 M

## LEGEND

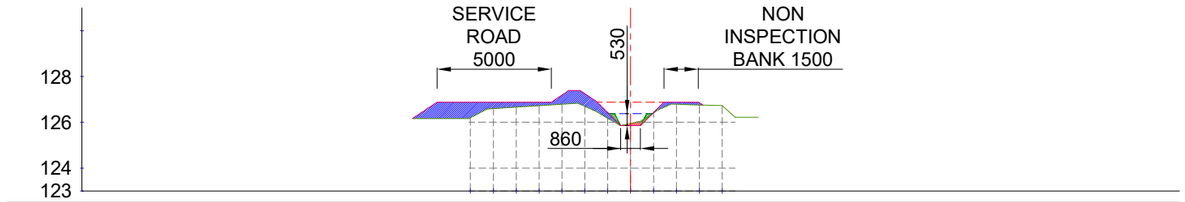
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- 7 of 12 |

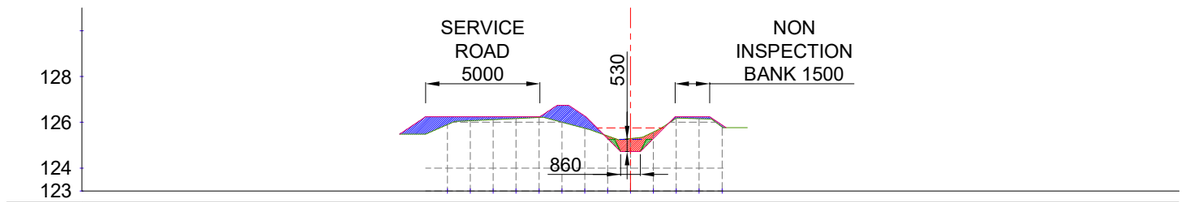
# X SECTION OF ITMA MINOR




| EXIST. LEVEL (M) | 126.198 | 126.595 | 126.660 | 126.724 | 126.789 | 126.695 | 126.177 | 125.949 | 126.409 | 126.787 | 126.757 | 126.725 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

CUTTING AREA (SQ.M) = 0.095
FILLING AREA (SQ.M) = 3.788

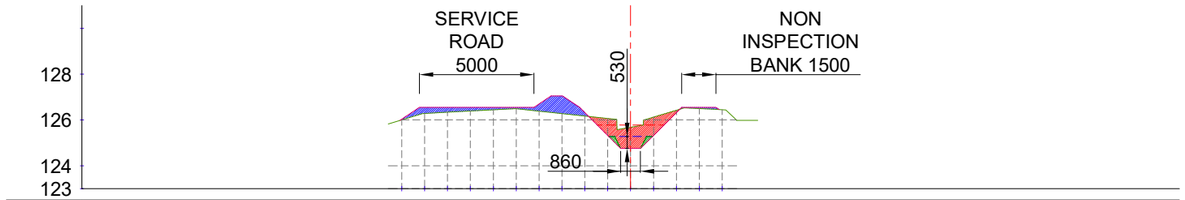
CH. (KM):- 2+900
DESIGNED BED LEVEL = 125.853 M




| EXIST. LEVEL (M) | 125.894 | 126.066 | 126.114 | 126.163 | 126.212 | 126.004 | 125.735 | 125.405 | 125.292 | 125.576 | 126.181 | 126.153 | 125.797 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

CUTTING AREA (SQ.M) = 0.870
FILLING AREA (SQ.M) = 3.028

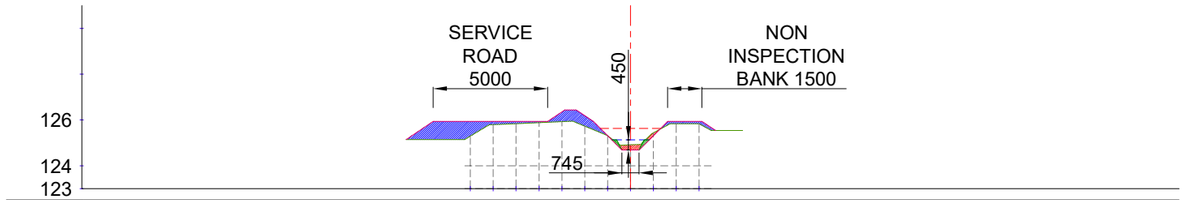
CH. (KM):- 3+100
DESIGNED BED LEVEL = 124.720 M




| EXIST. LEVEL (M) | 126.005 | 126.284 | 126.337 | 126.390 | 126.443 | 126.494 | 126.386 | 126.279 | 126.171 | 126.064 | 125.678 | 126.125 | 126.427 | 126.498 | 126.448 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

CUTTING AREA (SQ.M) = 2.462
FILLING AREA (SQ.M) = 2.186

CH. (KM):- 3+000
DESIGNED BED LEVEL = 124.753 M




| EXIST. LEVEL (M) | 125.291 | 125.794 | 125.838 | 125.882 | 125.926 | 125.731 | 125.313 | 124.911 | 125.440 | 125.835 | 125.827 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OFFSET (M) | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 |

CUTTING AREA (SQ.M) = 0.260
FILLING AREA (SQ.M) = 3.468

CH. (KM):- 3+200
DESIGNED BED LEVEL = 124.686 M

## LEGEND

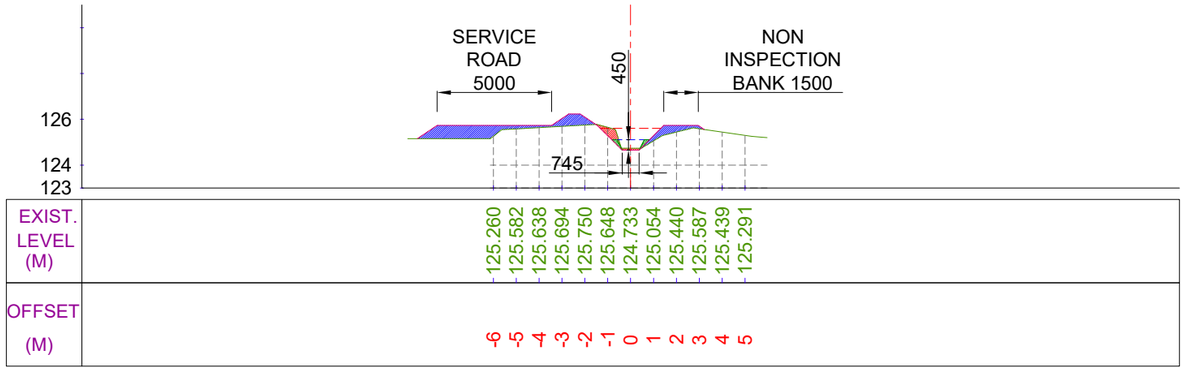
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

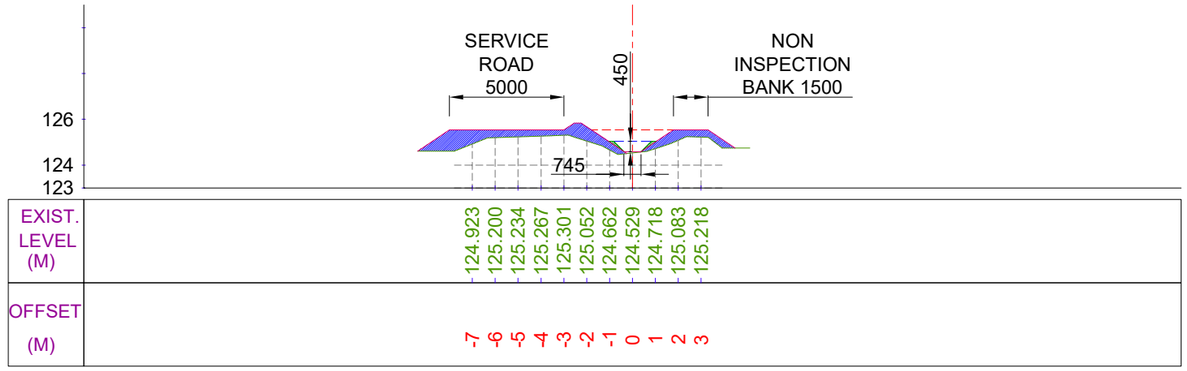
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- 8 of 12 |

# X SECTION OF ITMA MINOR



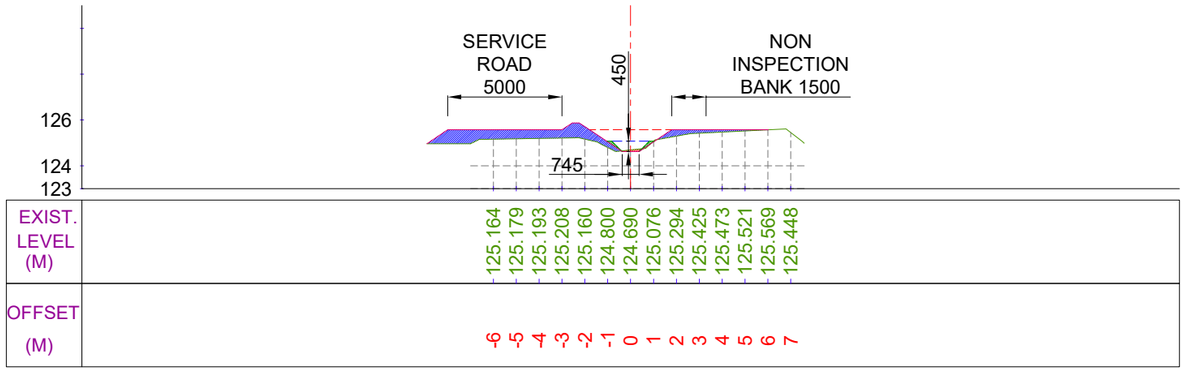

CUTTING AREA (SQ.M) = 0.357
FILLING AREA (SQ.M) = 3.289

CH. (KM):- 3+300
DESIGNED BED LEVEL = 124.653 M



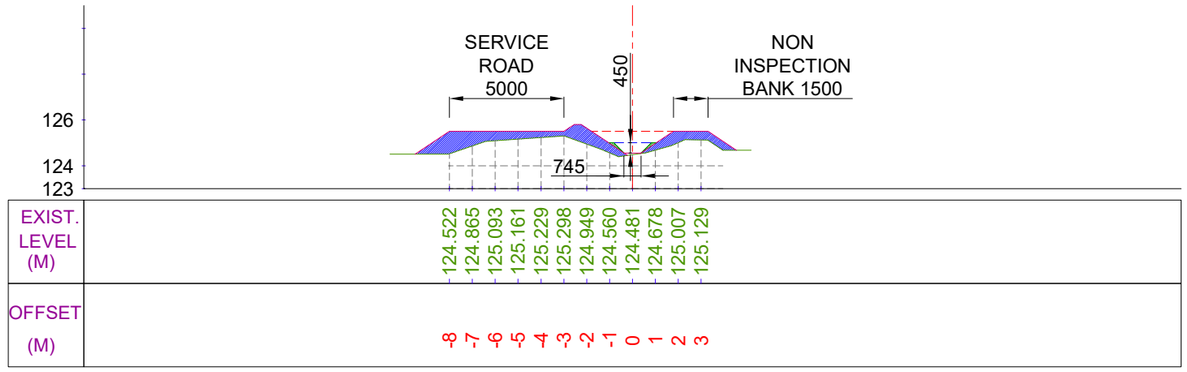

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 5.201

CH. (KM):- 3+500
DESIGNED BED LEVEL = 124.586 M




CUTTING AREA (SQ.M) = 0.063
FILLING AREA (SQ.M) = 4.077

CH. (KM):- 3+400
DESIGNED BED LEVEL = 124.620 M




CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 5.733

CH. (KM):- 3+600
DESIGNED BED LEVEL = 124.553 M

## LEGEND

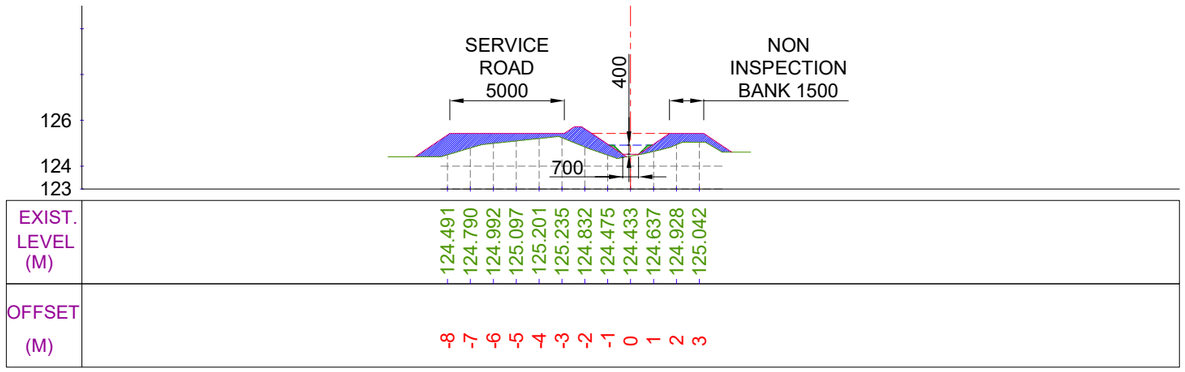
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

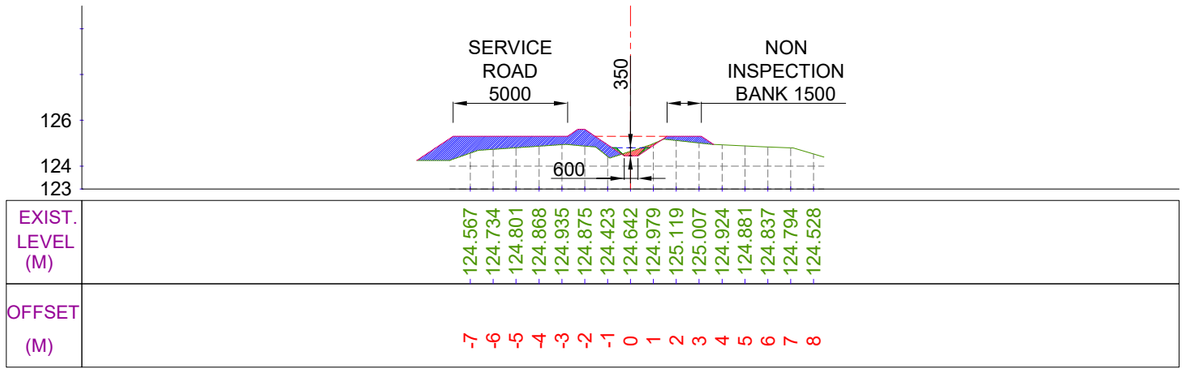
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- 9 of 12 |

# X SECTION OF ITMA MINOR



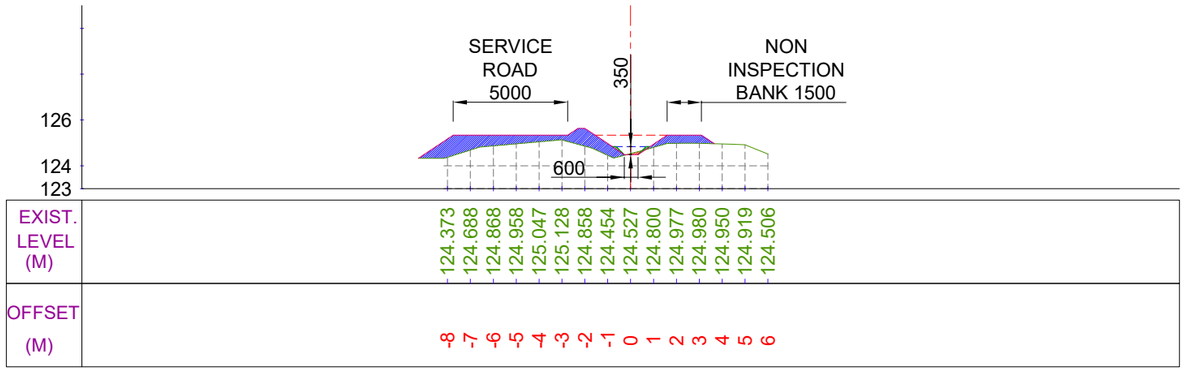

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 5.608

CH. (KM):- 3+700
DESIGNED BED LEVEL = 124.520 M



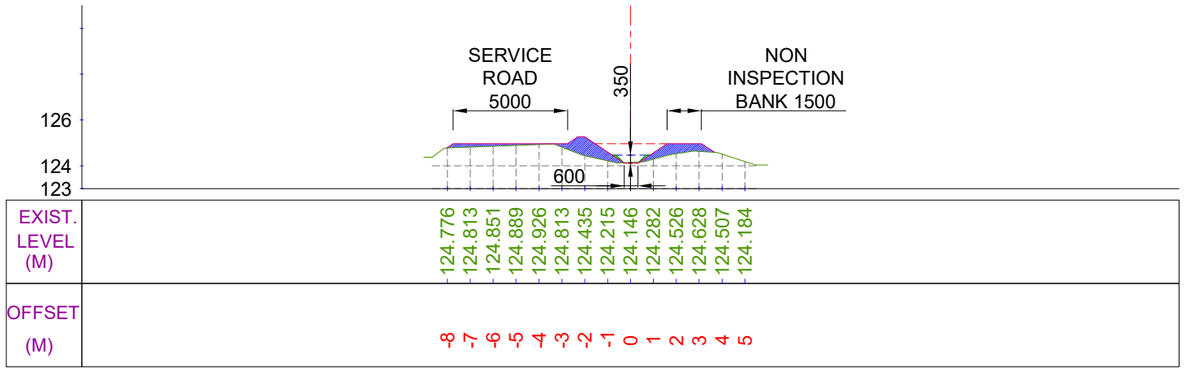

CUTTING AREA (SQ.M) = 0.224
FILLING AREA (SQ.M) = 5.213

CH. (KM):- 3+900
DESIGNED BED LEVEL = 124.453 M




CUTTING AREA (SQ.M) = 0.041
FILLING AREA (SQ.M) = 5.033

CH. (KM):- 3+800
DESIGNED BED LEVEL = 124.486 M




CUTTING AREA (SQ.M) = 0.021
FILLING AREA (SQ.M) = 2.769

CH. (KM):- 4+000
DESIGNED BED LEVEL = 124.115 M

## LEGEND

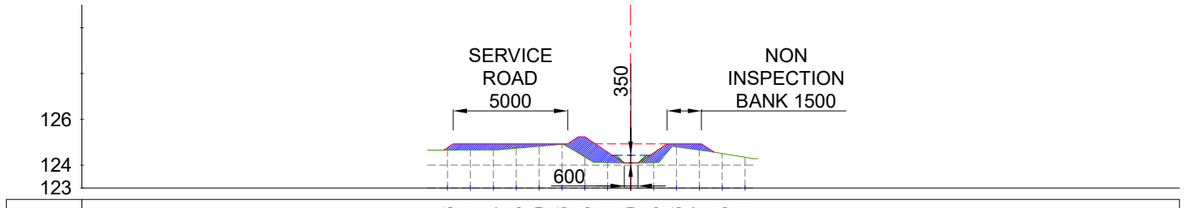
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

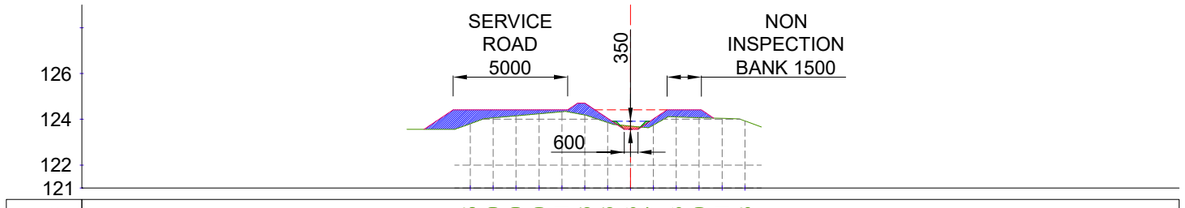
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- |

# X SECTION OF ITMA MINOR



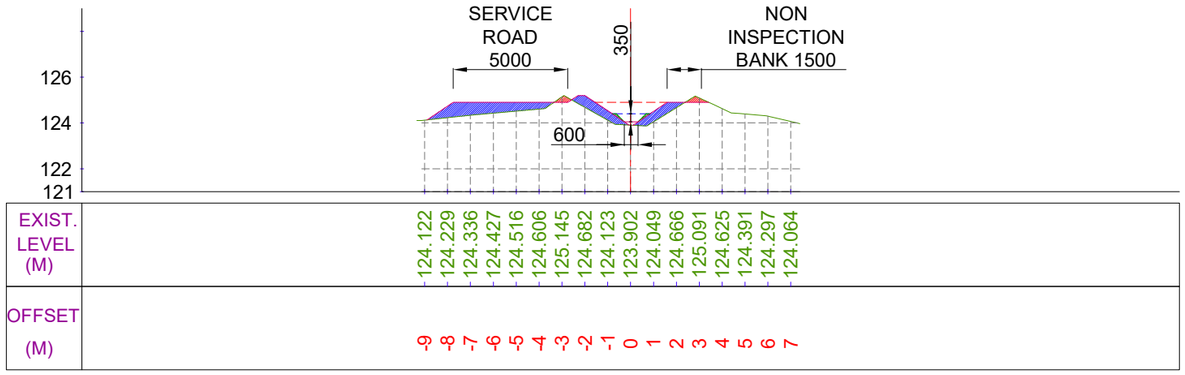

CUTTING AREA (SQ.M) = 0.012
FILLING AREA (SQ.M) = 3.139

CH. (KM):- 4+100
DESIGNED BED LEVEL = 124.081 M



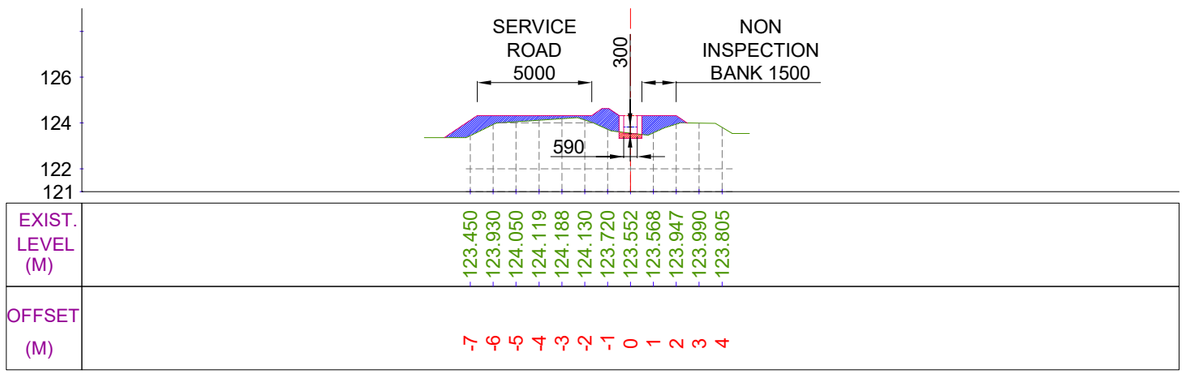

CUTTING AREA (SQ.M) = 0.108
FILLING AREA (SQ.M) = 3.694

CH. (KM):- 4+300
DESIGNED BED LEVEL = 123.558 M




CUTTING AREA (SQ.M) = 0.268
FILLING AREA (SQ.M) = 3.838

CH. (KM):- 4+200
DESIGNED BED LEVEL = 124.048 M




CUTTING AREA (SQ.M) = 0.226
FILLING AREA (SQ.M) = 3.870

CH. (KM):- 4+400
DESIGNED BED LEVEL = 123.524 M

## LEGEND

CUT AREA

FILL AREA

EXISTING BED LINE

F.S.L.

DESIGNED BED LINE

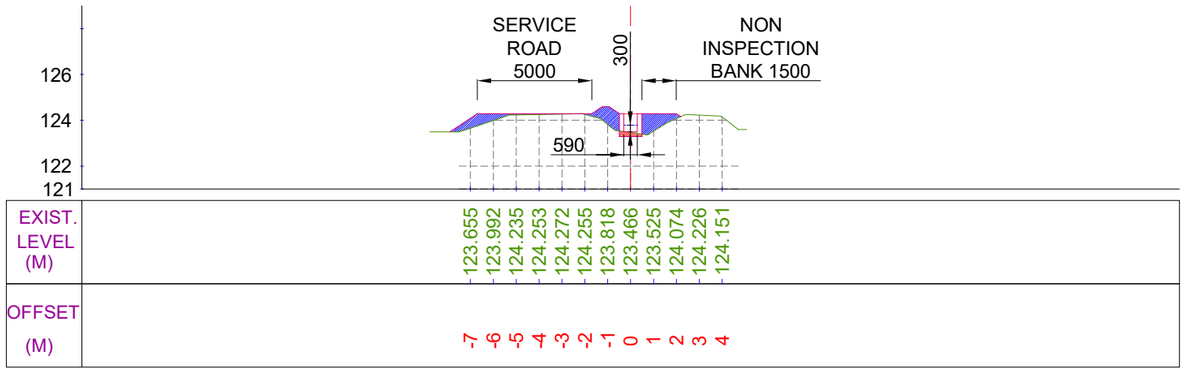
H.G. LINE

Prepared by :-

WAPCOS LTD.

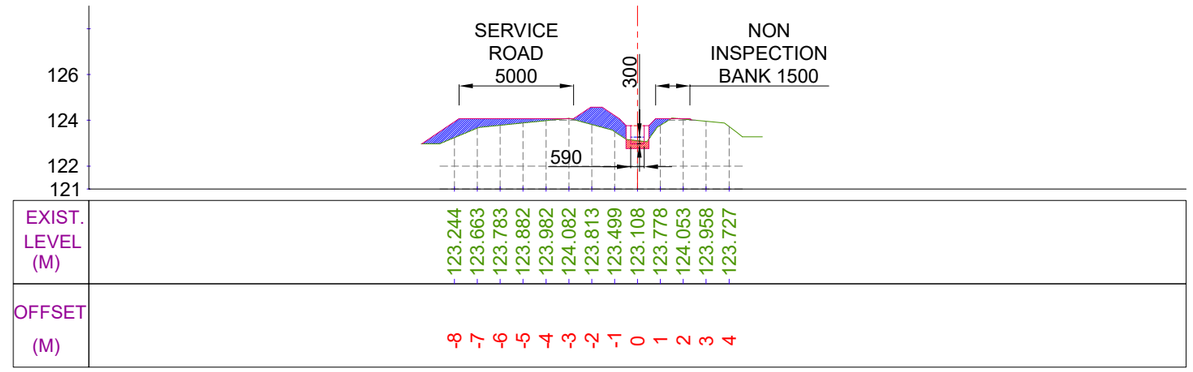
| | |
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| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- 11 of 12 |

# X SECTION OF ITMA MINOR



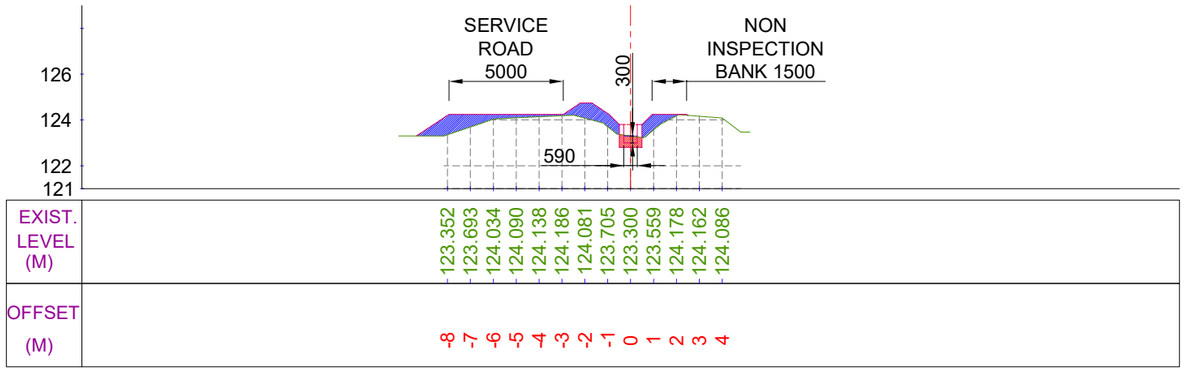

CUTTING AREA (SQ.M) = 0.173
FILLING AREA (SQ.M) = 2.582

CH. (KM):- 4+500
DESIGNED BED LEVEL = 123.491 M



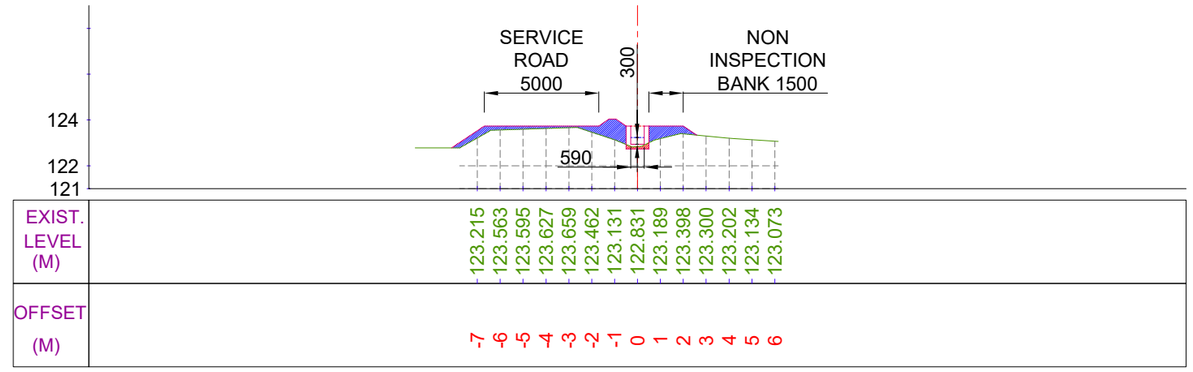

CUTTING AREA (SQ.M) = 0.351
FILLING AREA (SQ.M) = 3.706

CH. (KM):- 4+700
DESIGNED BED LEVEL = 122.967 M




CUTTING AREA (SQ.M) = 0.494
FILLING AREA (SQ.M) = 4.117

CH. (KM):- 4+600
DESIGNED BED LEVEL = 123.001 M




CUTTING AREA (SQ.M) = 0.138
FILLING AREA (SQ.M) = 2.858

CH. (KM):- 4+800
DESIGNED BED LEVEL = 122.934 M

## LEGEND

| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

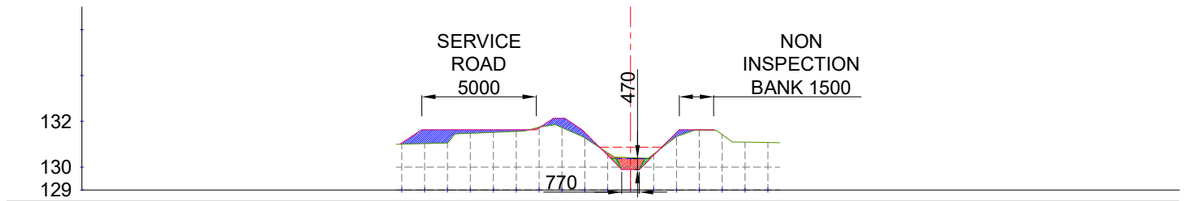
Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF ITMA MINOR (OFFTAKE FROM RD - 3+985 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ XSEC- 12 of 12 |

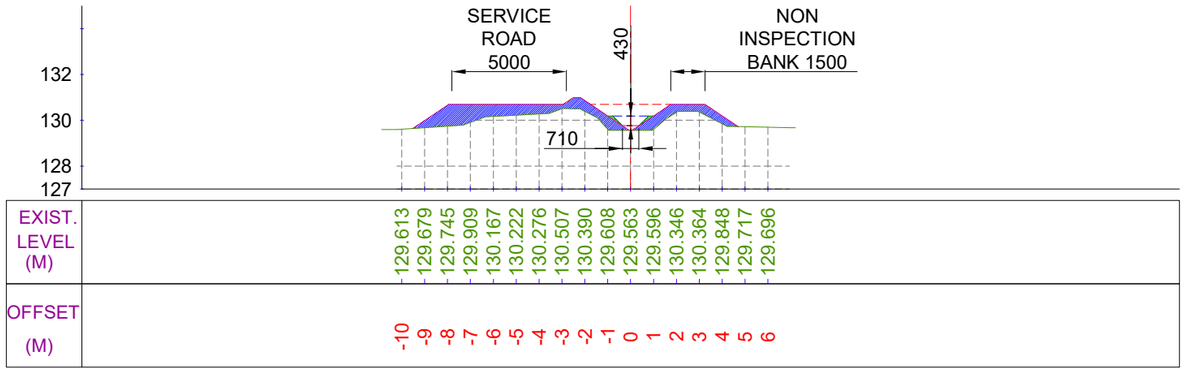
# *MALI MINOR*

# X SECTION OF MALI MINOR



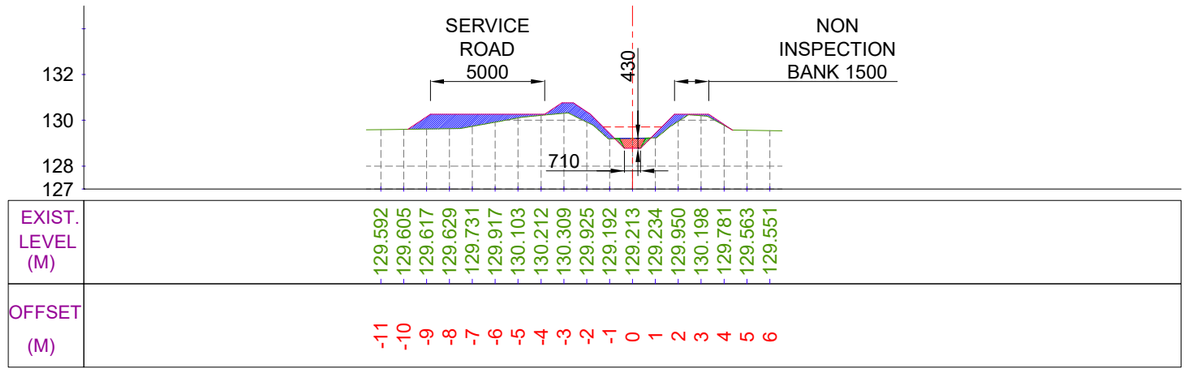

| | | |

# X SECTION OF MALI MINOR



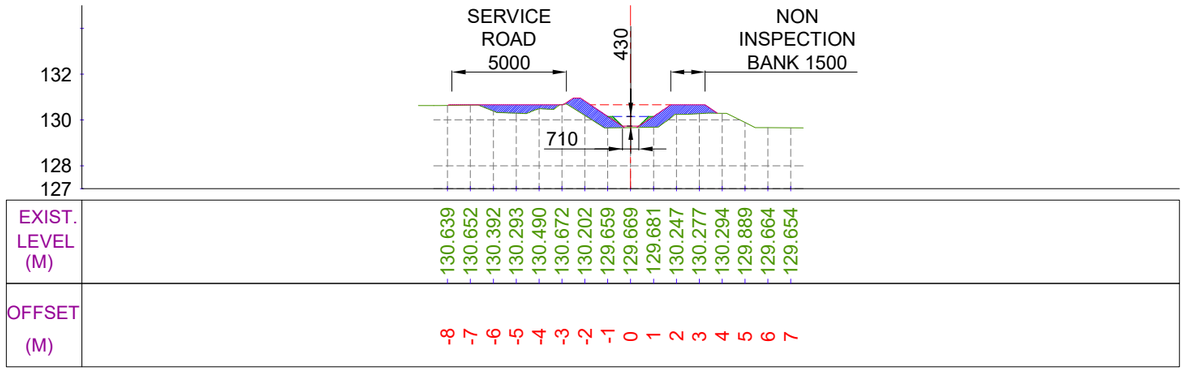

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 6.274

CH. (KM):- 0+500
DESIGNED BED LEVEL = 129.761 M



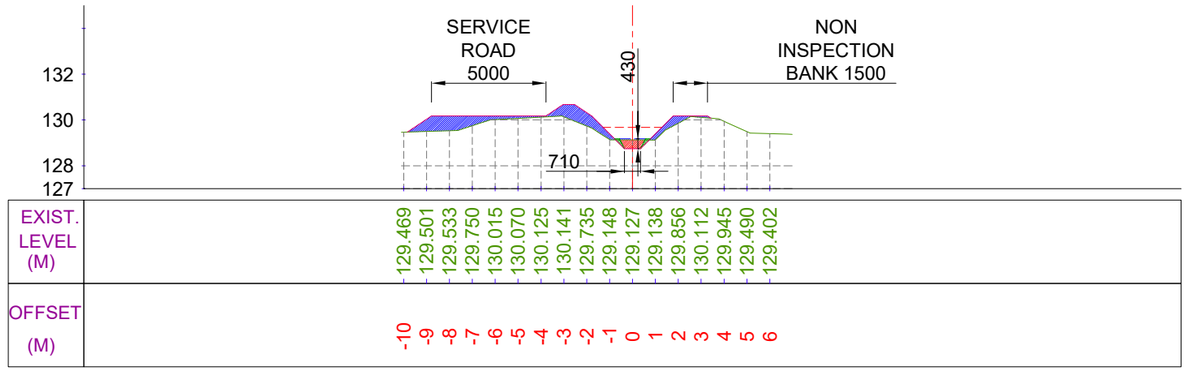

CUTTING AREA (SQ.M) = 0.404
FILLING AREA (SQ.M) = 3.832

CH. (KM):- 0+700
DESIGNED BED LEVEL = 128.781 M




CUTTING AREA (SQ.M) = 0.002
FILLING AREA (SQ.M) = 3.370

CH. (KM):- 0+600
DESIGNED BED LEVEL = 129.728 M




CUTTING AREA (SQ.M) = 0.342
FILLING AREA (SQ.M) = 3.740

CH. (KM):- 0+800
DESIGNED BED LEVEL = 128.747 M

## LEGEND

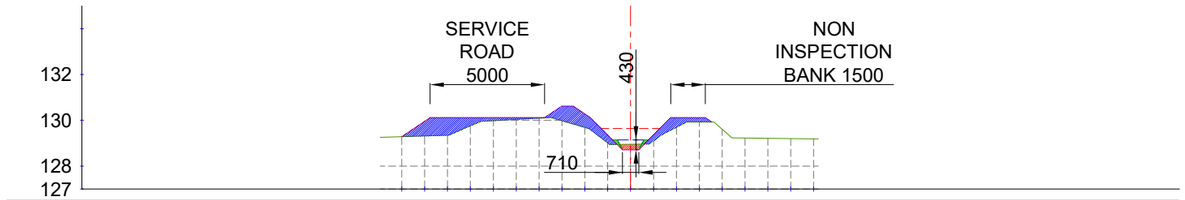
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

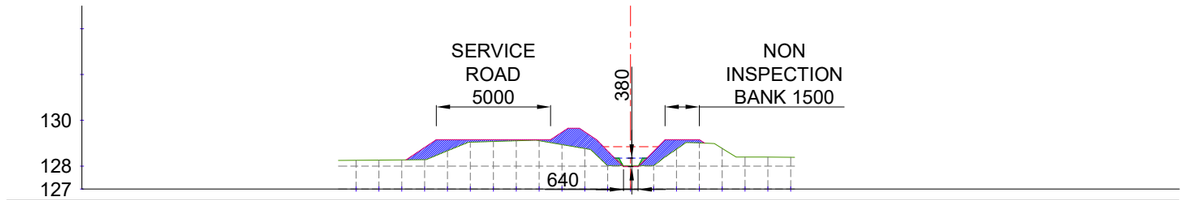
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MALI MINOR (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC- |

# X SECTION OF MALI MINOR




| | | |

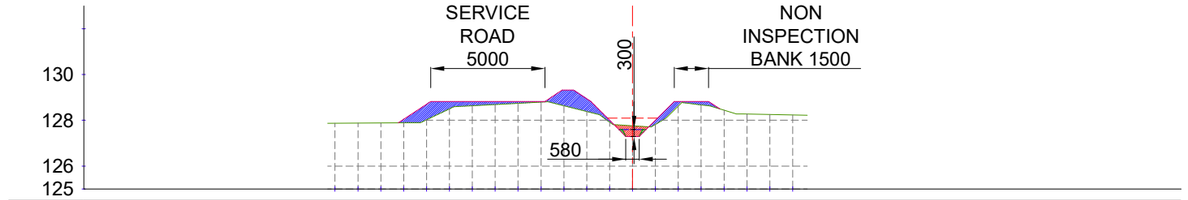
# X SECTION OF MALI MINOR




| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 128.248 | 128.259 | 128.269 | 128.280 | 128.667 | 129.047 | 129.076 | 129.106 | 129.109 | 128.937 | 128.766 | 128.014 | 128.018 | 128.022 | 128.734 | 129.011 | 128.774 | 128.391 | 128.388 | 128.385 | | | | | | |
| OFFSET (M) | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | |

CUTTING AREA (SQ.M) = 0.031
FILLING AREA (SQ.M) = 4.152

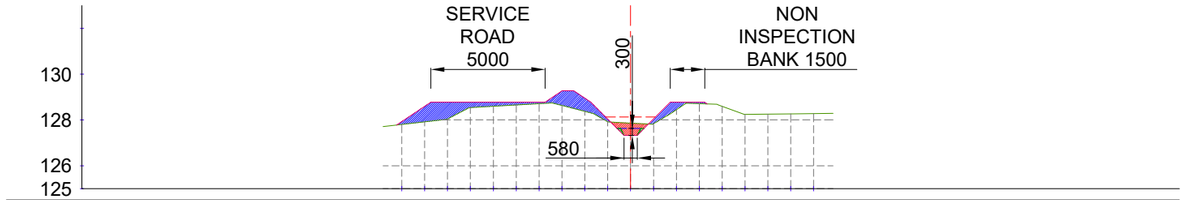
CH. (KM):- 1+300
DESIGNED BED LEVEL = 127.971 M




| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 127.872 | 127.877 | 127.882 | 127.887 | 128.022 | 128.498 | 128.636 | 128.688 | 128.741 | 128.793 | 128.638 | 128.388 | 127.918 | 127.755 | 127.820 | 128.625 | 128.674 | 128.443 | 128.273 | 128.255 | 128.236 | | | | | |
| OFFSET (M) | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | |

CUTTING AREA (SQ.M) = 0.437
FILLING AREA (SQ.M) = 3.444

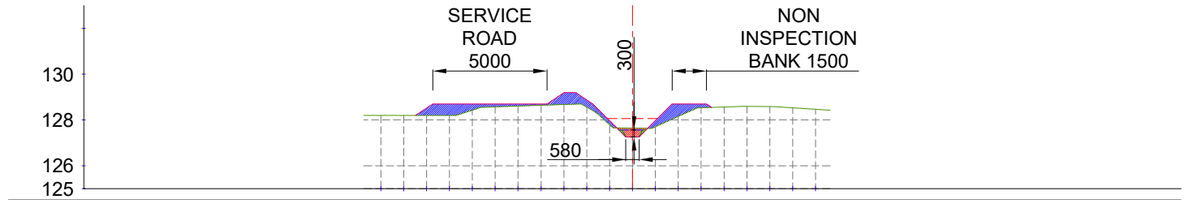
CH. (KM):- 1+500
DESIGNED BED LEVEL = 127.294 M




| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 127.806 | 127.918 | 128.041 | 128.539 | 128.596 | 128.654 | 128.711 | 128.633 | 128.374 | 127.917 | 127.863 | 127.837 | 128.454 | 128.713 | 128.599 | 128.247 | 128.258 | 128.269 | 128.279 | | | | | | | |
| OFFSET (M) | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | |

CUTTING AREA (SQ.M) = 0.556
FILLING AREA (SQ.M) = 3.898

CH. (KM):- 1+400
DESIGNED BED LEVEL = 127.327 M




| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 128.201 | 128.201 | 128.201 | 128.201 | 128.428 | 128.571 | 128.606 | 128.641 | 128.676 | 128.563 | 127.793 | 127.646 | 127.706 | 128.155 | 128.535 | 128.568 | 128.593 | 128.587 | 128.532 | 128.470 | | | | | | |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | |

CUTTING AREA (SQ.M) = 0.326
FILLING AREA (SQ.M) = 3.231

CH. (KM):- 1+600
DESIGNED BED LEVEL = 127.261 M

## LEGEND

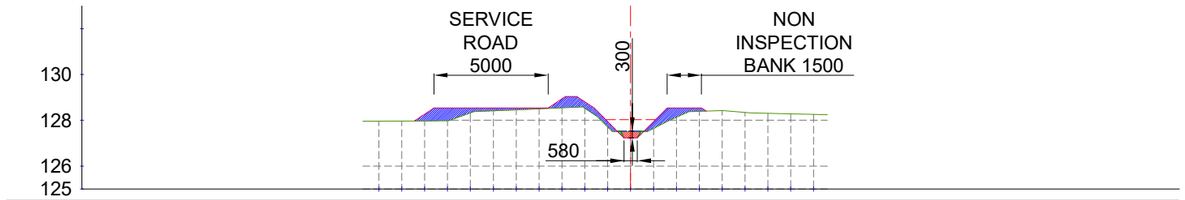
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MALI MINOR (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC- 4 of 10 |

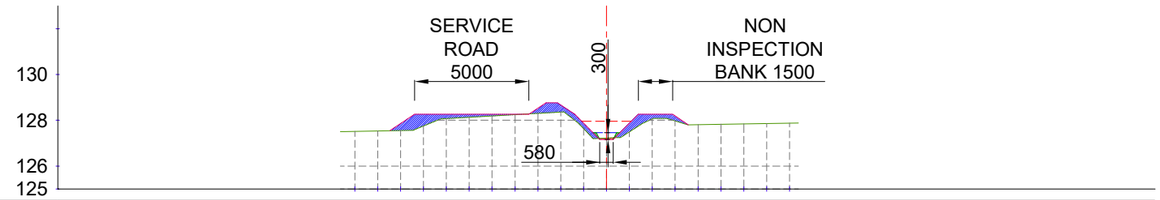
# X SECTION OF MALI MINOR




| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 127.961 | 127.967 | 127.973 | 127.978 | 128.319 | 128.412 | 128.457 | 128.502 | 128.547 | 128.525 | 127.711 | 127.501 | 127.642 | 128.132 | 128.389 | 128.418 | 128.338 | 128.302 | 128.279 | 128.257 | |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |

CUTTING AREA (SQ.M) = 0.197
FILLING AREA (SQ.M) = 2.938

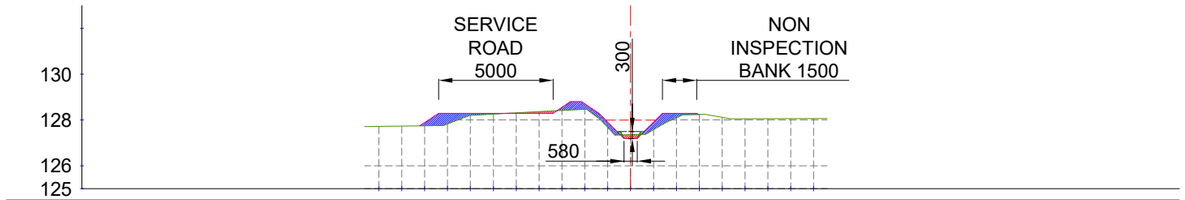
CH. (KM):- 1+700
DESIGNED BED LEVEL = 127.227 M




| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 127.518 | 127.537 | 127.556 | 127.747 | 128.070 | 128.127 | 128.184 | 128.241 | 128.297 | 128.354 | 127.634 | 127.222 | 127.496 | 128.065 | 127.971 | 127.812 | 127.828 | 127.845 | 127.861 | 127.877 | |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |

CUTTING AREA (SQ.M) = 0.040
FILLING AREA (SQ.M) = 2.833

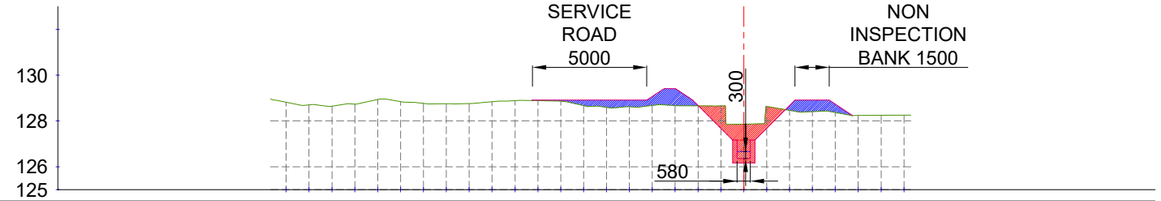
CH. (KM):- 1+900
DESIGNED BED LEVEL = 127.161 M




| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 127.722 | 127.734 | 127.746 | 127.824 | 128.201 | 128.255 | 128.308 | 128.361 | 128.415 | 128.468 | 127.675 | 127.357 | 127.572 | 128.095 | 128.237 | 128.115 | 128.052 | 128.054 | 128.055 | 128.056 | |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |

CUTTING AREA (SQ.M) = 0.209
FILLING AREA (SQ.M) = 1.971

CH. (KM):- 1+800
DESIGNED BED LEVEL = 127.194 M




| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 128.819 | 128.706 | 128.649 | 128.740 | 128.937 | 128.846 | 128.771 | 128.754 | 128.759 | 128.838 | 128.887 | 128.888 | 128.871 | 128.671 | 128.597 | 128.624 | 128.679 | 128.669 | 128.661 | 128.662 | 127.861 | 128.636 | 128.461 | 128.407 | 128.372 | 128.240 | 128.248 | 128.256 |
| OFFSET (M) | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

CUTTING AREA (SQ.M) = 3.213
FILLING AREA (SQ.M) = 3.211

CH. (KM):- 2+000
DESIGNED BED LEVEL = 126.365 M

## LEGEND

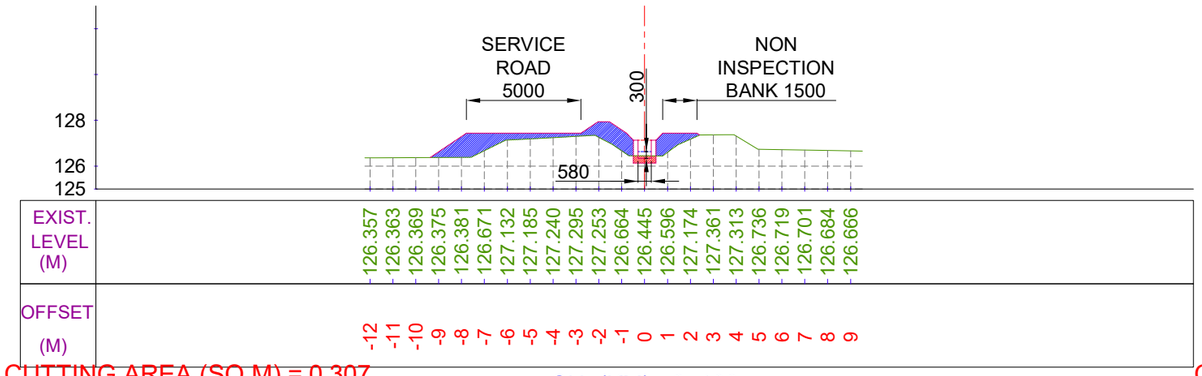
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

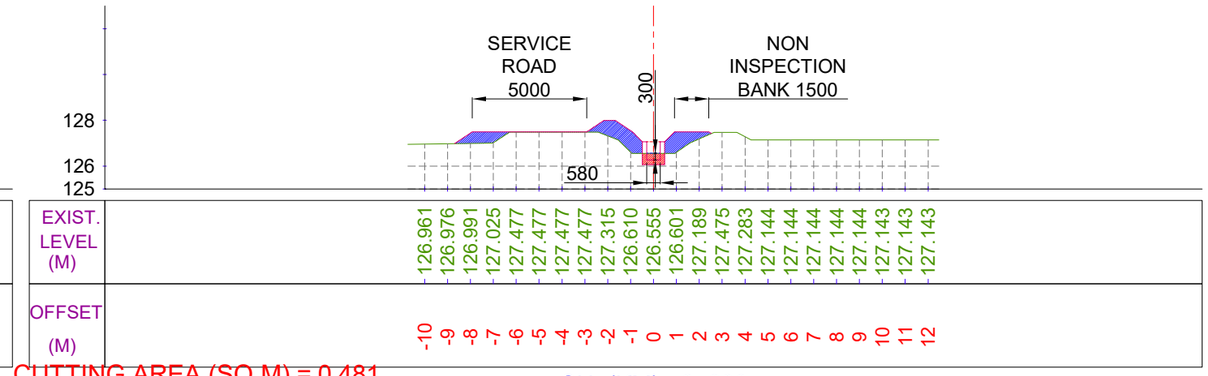
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MALI MINOR (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC- 5 of 10 |

# X SECTION OF MALI MINOR



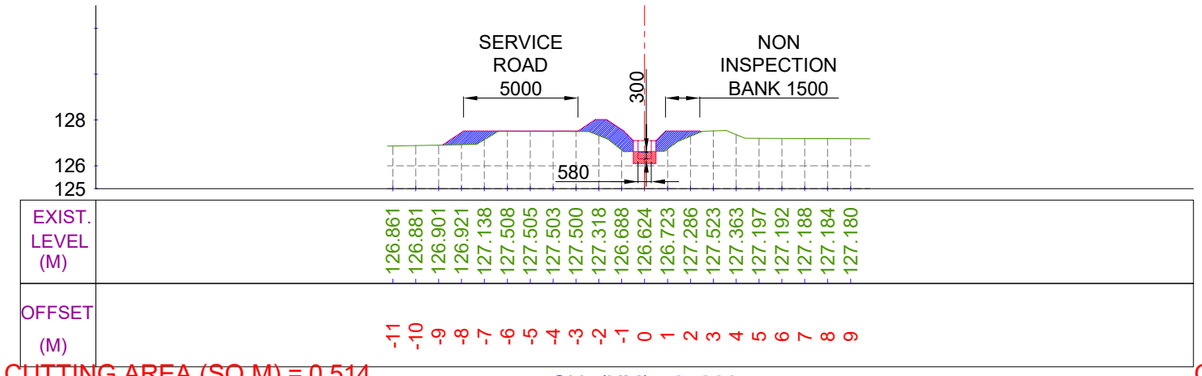

CUTTING AREA (SQ.M) = 0.307
FILLING AREA (SQ.M) = 5.387

CH. (KM):- 2+100
DESIGNED BED LEVEL = 126.332 M



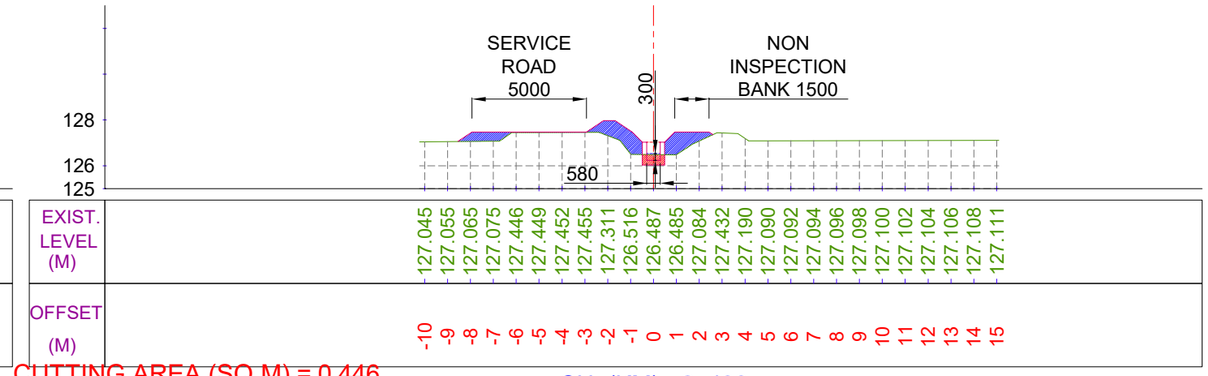

CUTTING AREA (SQ.M) = 0.481
FILLING AREA (SQ.M) = 3.460

CH. (KM):- 2+300
DESIGNED BED LEVEL = 126.265 M




CUTTING AREA (SQ.M) = 0.514
FILLING AREA (SQ.M) = 3.363

CH. (KM):- 2+200
DESIGNED BED LEVEL = 126.299 M




CUTTING AREA (SQ.M) = 0.446
FILLING AREA (SQ.M) = 3.535

CH. (KM):- 2+400
DESIGNED BED LEVEL = 126.232 M

## LEGEND

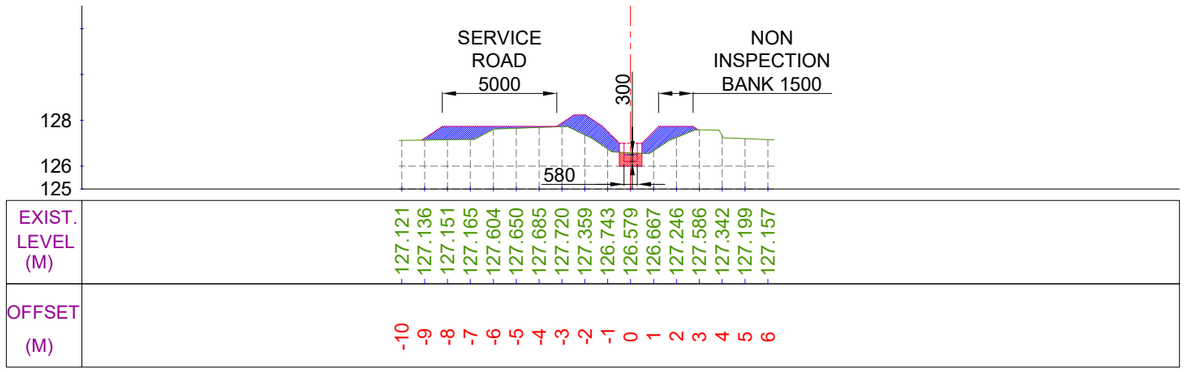
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

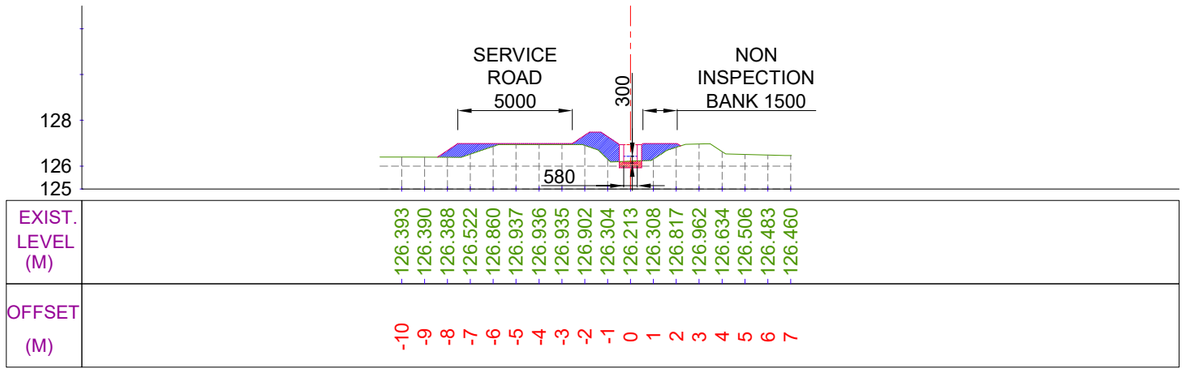
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MALI MINOR (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC- |

# X SECTION OF MALI MINOR



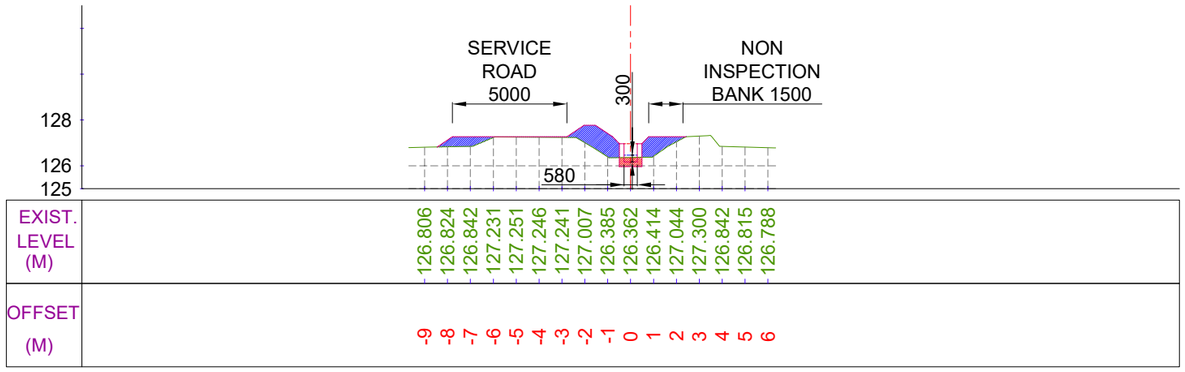

CUTTING AREA (SQ.M) = 0.569
FILLING AREA (SQ.M) = 4.630

CH. (KM):- 2+500
DESIGNED BED LEVEL = 126.199 M



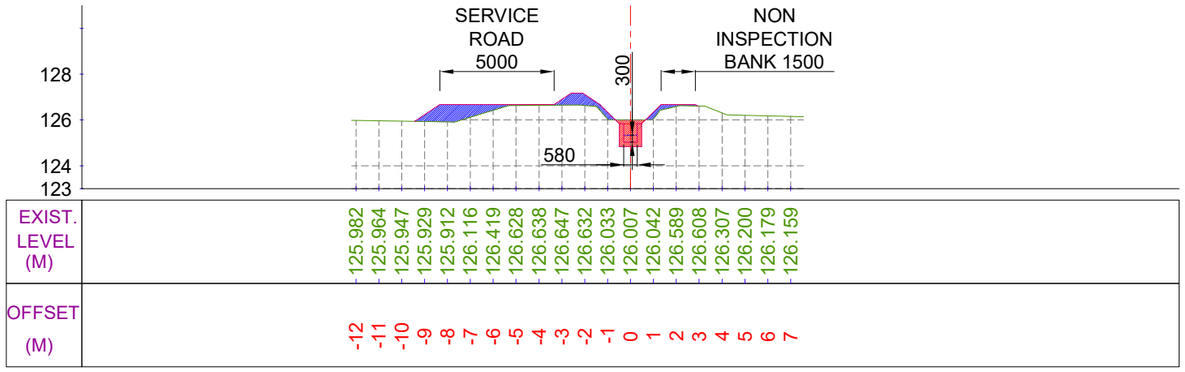

CUTTING AREA (SQ.M) = 0.275
FILLING AREA (SQ.M) = 3.162

CH. (KM):- 2+700
DESIGNED BED LEVEL = 126.132 M




CUTTING AREA (SQ.M) = 0.389
FILLING AREA (SQ.M) = 3.434

CH. (KM):- 2+600
DESIGNED BED LEVEL = 126.165 M




CUTTING AREA (SQ.M) = 1.183
FILLING AREA (SQ.M) = 3.148

CH. (KM):- 2+800
DESIGNED BED LEVEL = 125.032 M

## LEGEND

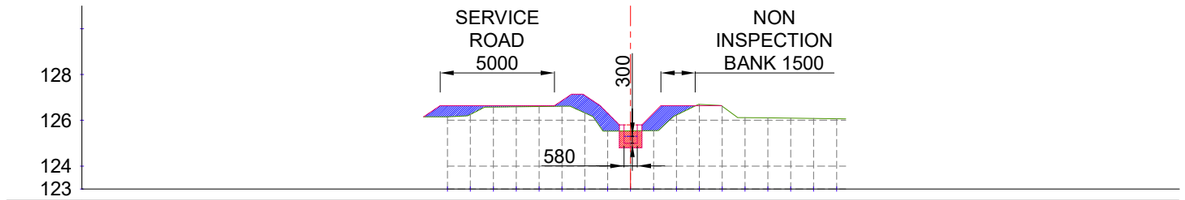
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

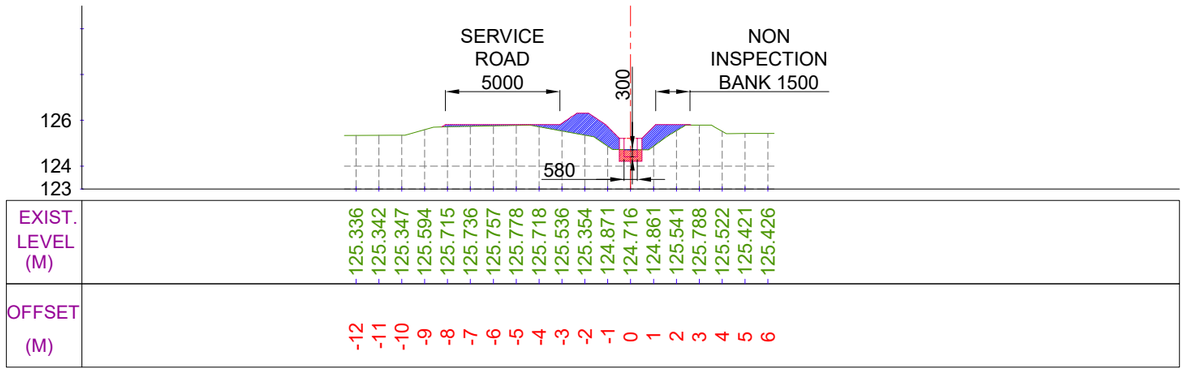
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MALI MINOR (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC- 7 of 10 |

# X SECTION OF MALI MINOR



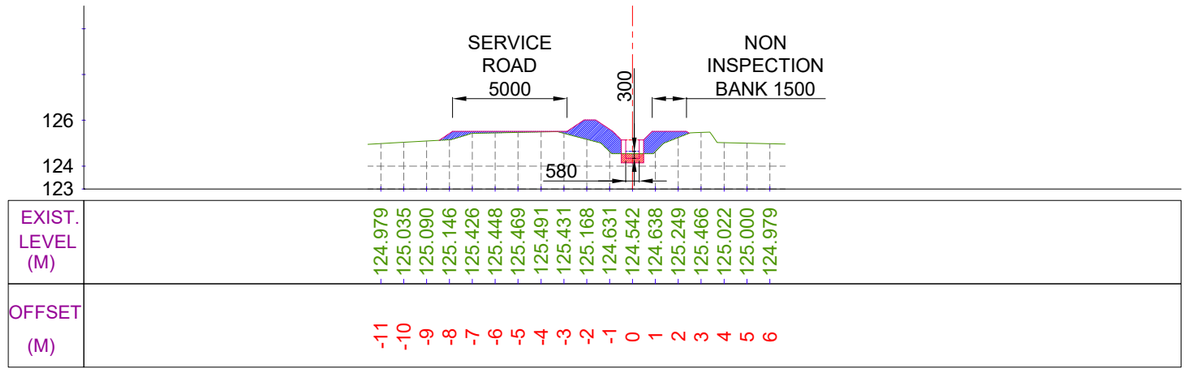

| | | |

# X SECTION OF MALI MINOR



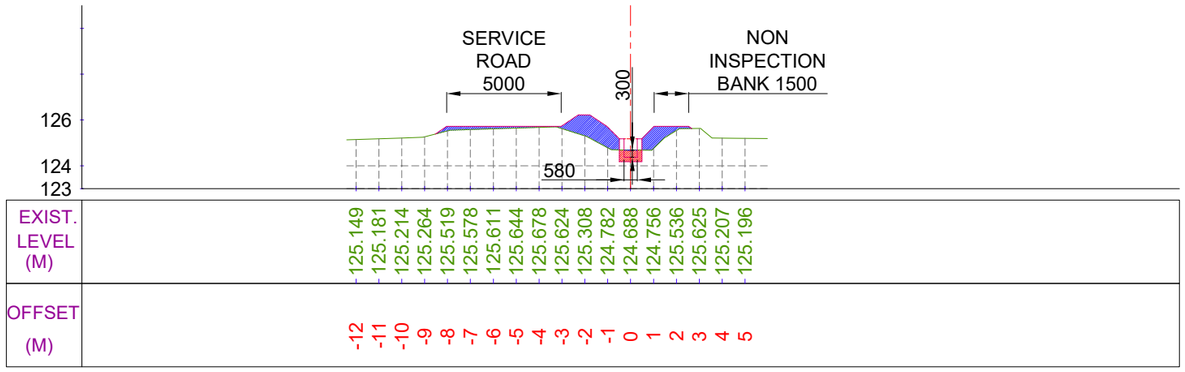

CUTTING AREA (SQ.M) = 0.498
FILLING AREA (SQ.M) = 3.469

CH. (KM):- 3+300
DESIGNED BED LEVEL = 124.408 M



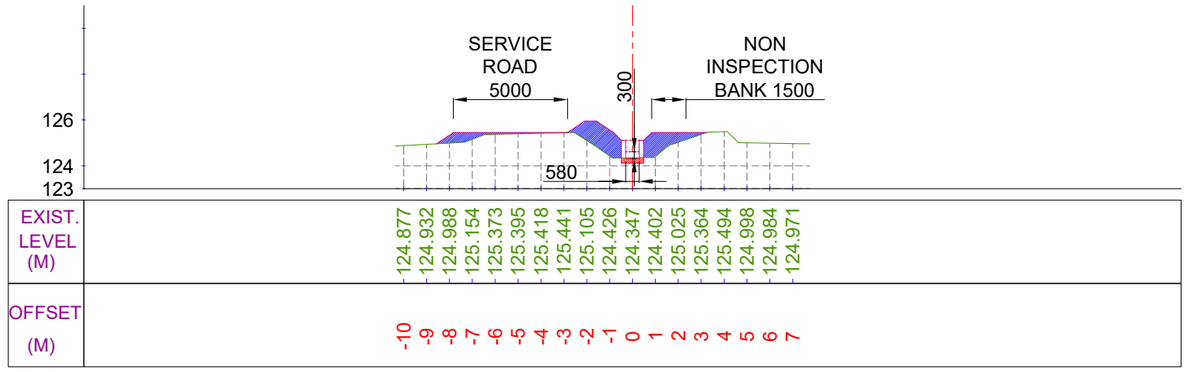

CUTTING AREA (SQ.M) = 0.393
FILLING AREA (SQ.M) = 3.257

CH. (KM):- 3+500
DESIGNED BED LEVEL = 124.341 M




CUTTING AREA (SQ.M) = 0.503
FILLING AREA (SQ.M) = 3.402

CH. (KM):- 3+400
DESIGNED BED LEVEL = 124.375 M




CUTTING AREA (SQ.M) = 0.234
FILLING AREA (SQ.M) = 4.146

CH. (KM):- 3+600
DESIGNED BED LEVEL = 124.308 M

## LEGEND

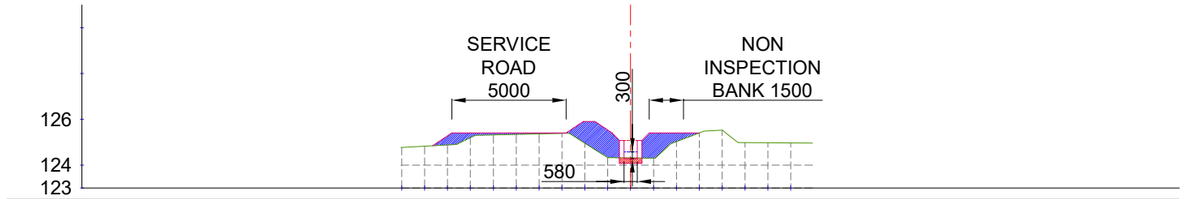
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF MALI MINOR (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ XSEC- 9 of 10 |

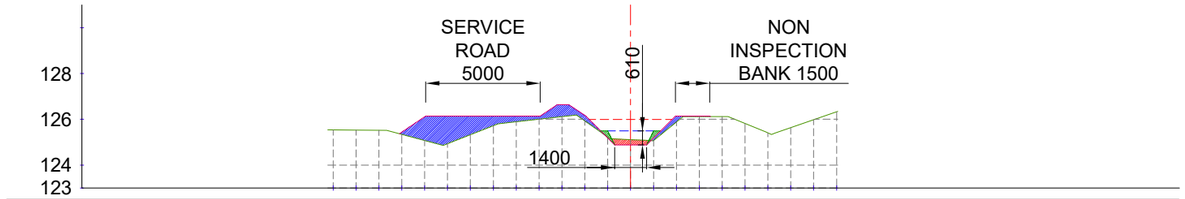
# X SECTION OF MALI MINOR




| | | |

# *THUMBHI MINOR*

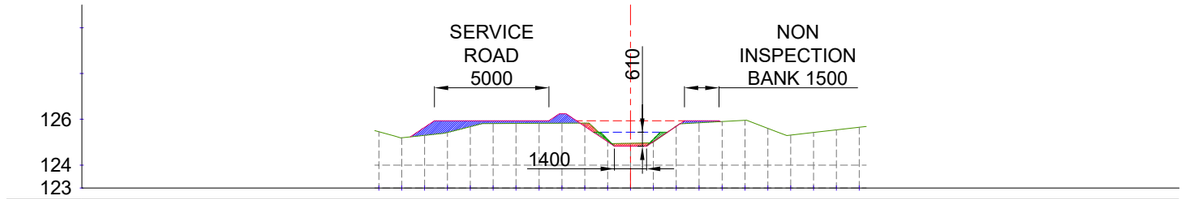
# X SECTION OF THUMBHI MINOR




| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 125.532 | 125.527 | 125.520 | 125.342 | 125.076 | 124.937 | 125.330 | 125.724 | 125.893 | 126.005 | 126.116 | 125.928 | 125.218 | 125.109 | 125.072 | 125.883 | 126.119 | 126.117 | 125.814 | 125.405 | 125.632 | 125.978 | 126.325 |
| OFFSET (M) | -13 | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

CUTTING AREA (SQ.M) = 0.341
FILLING AREA (SQ.M) = 4.993

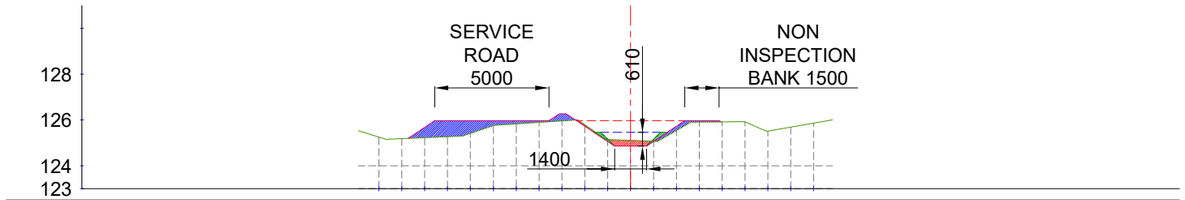
CH. (KM):- 0+100
DESIGNED BED LEVEL = 124.884 M




| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 125.456 | 125.194 | 125.296 | 125.421 | 125.677 | 125.812 | 125.817 | 125.823 | 125.829 | 125.836 | 125.063 | 124.953 | 125.007 | 125.705 | 125.850 | 125.901 | 125.952 | 125.603 | 125.306 | 125.420 | 125.534 | 125.648 | |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |

CUTTING AREA (SQ.M) = 0.321
FILLING AREA (SQ.M) = 1.969

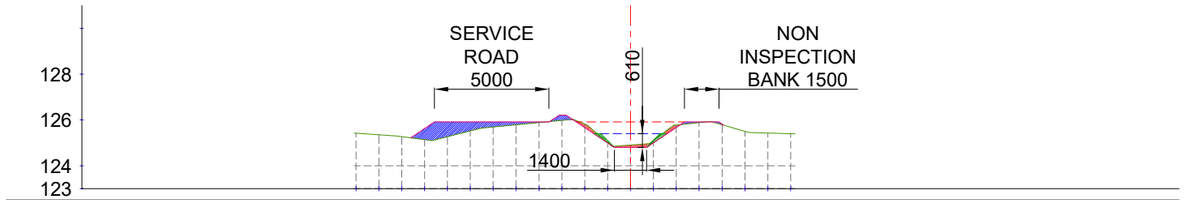
CH. (KM):- 0+300
DESIGNED BED LEVEL = 124.827 M




| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 125.254 | 125.187 | 125.231 | 125.274 | 125.417 | 125.758 | 125.833 | 125.897 | 125.962 | 125.786 | 125.143 | 125.105 | 125.067 | 125.538 | 125.910 | 125.916 | 125.919 | 125.510 | 125.685 | 125.861 | | |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |

CUTTING AREA (SQ.M) = 0.462
FILLING AREA (SQ.M) = 2.671

CH. (KM):- 0+200
DESIGNED BED LEVEL = 124.856 M




| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 125.424 | 125.354 | 125.269 | 125.139 | 125.266 | 125.520 | 125.693 | 125.789 | 125.885 | 125.981 | 125.820 | 125.007 | 124.902 | 125.102 | 125.784 | 125.883 | 125.791 | 125.501 | 125.431 | 125.402 | | |
| OFFSET (M) | -12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |

CUTTING AREA (SQ.M) = 0.372
FILLING AREA (SQ.M) = 2.086

CH. (KM):- 0+400
DESIGNED BED LEVEL = 124.799 M

## LEGEND

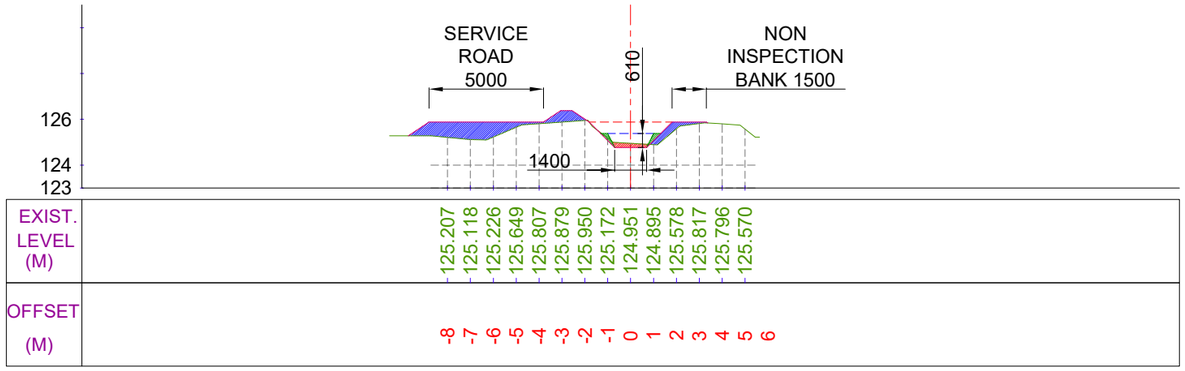
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

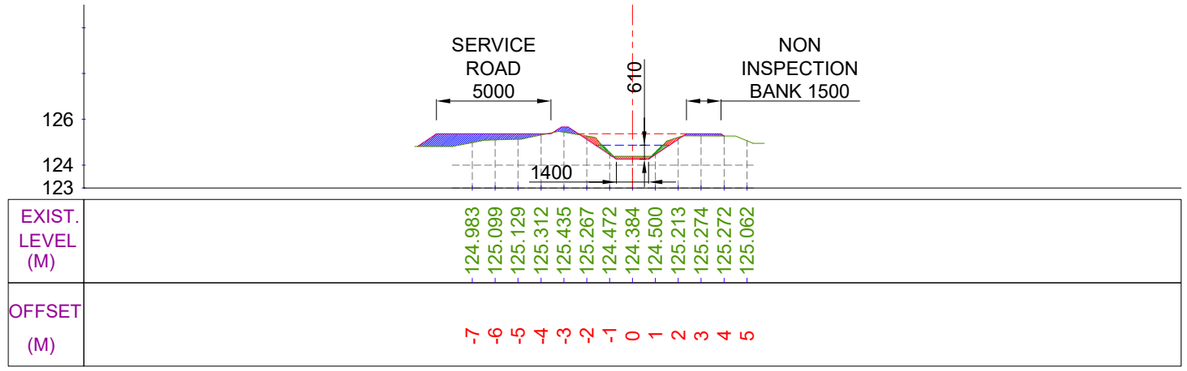
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 1 of 15 |

# X SECTION OF THUMBHI MINOR



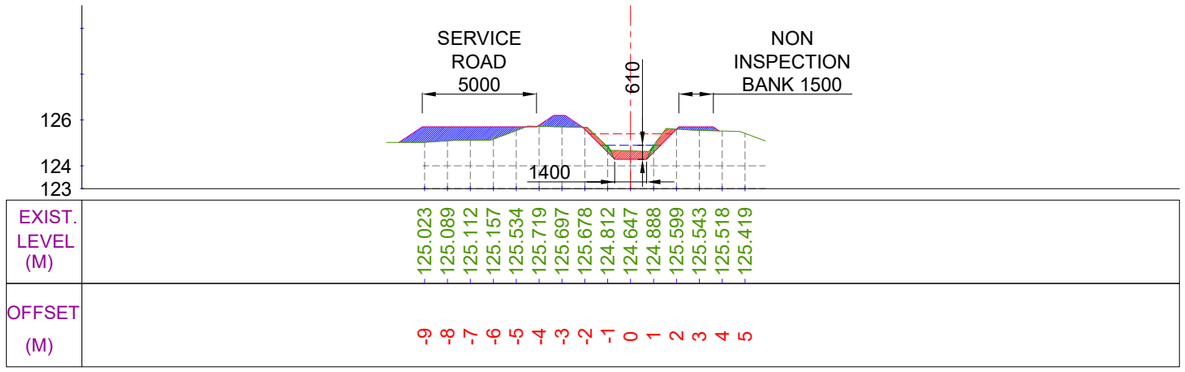

CUTTING AREA (SQ.M) = 0.276
FILLING AREA (SQ.M) = 3.988

CH. (KM):- 0+500
DESIGNED BED LEVEL = 124.770 M



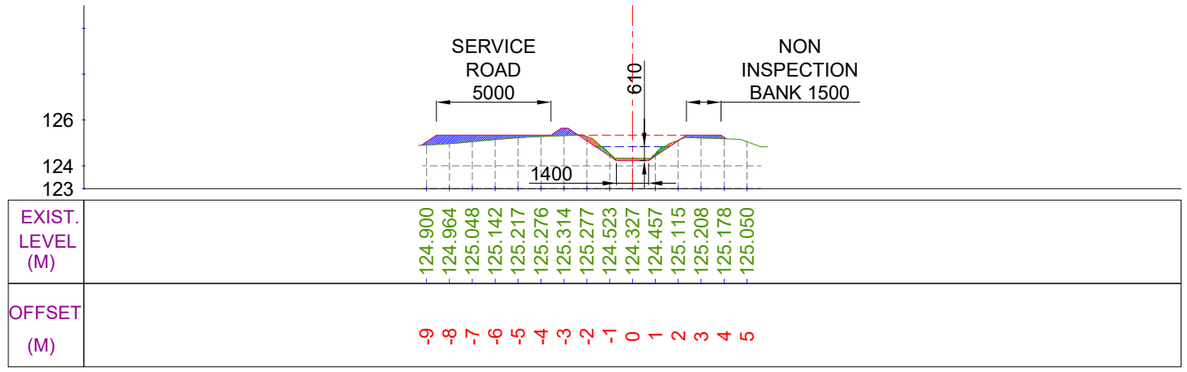

CUTTING AREA (SQ.M) = 0.474
FILLING AREA (SQ.M) = 2.073

CH. (KM):- 0+700
DESIGNED BED LEVEL = 124.256 M




CUTTING AREA (SQ.M) = 1.048
FILLING AREA (SQ.M) = 3.465

CH. (KM):- 0+600
DESIGNED BED LEVEL = 124.285 M




CUTTING AREA (SQ.M) = 0.353
FILLING AREA (SQ.M) = 1.681

CH. (KM):- 0+800
DESIGNED BED LEVEL = 124.227 M

## LEGEND

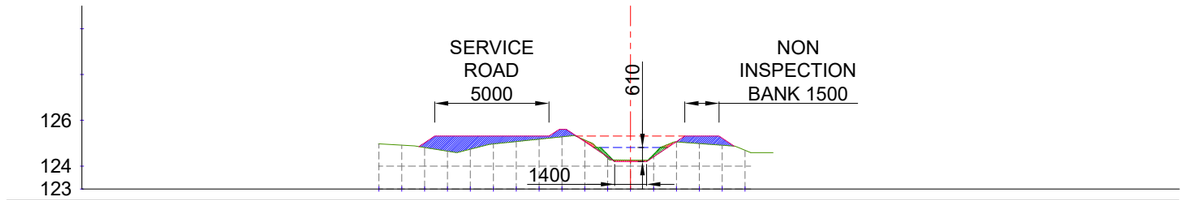
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 2 of 15 |

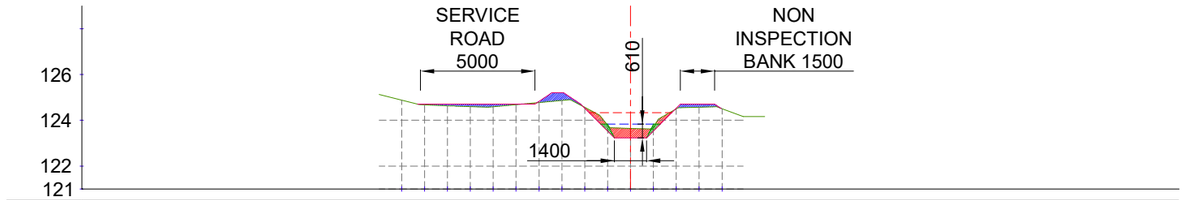
# X SECTION OF THUMBHI MINOR




| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 124.968 | 124.915 | 124.810 | 124.651 | 124.738 | 124.965 | 125.068 | 125.172 | 125.275 | 125.135 | 124.339 | 124.262 | 124.482 | 125.054 | 124.981 | 124.908 | 124.686 |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 |

CUTTING AREA (SQ.M) = 0.208
FILLING AREA (SQ.M) = 3.152

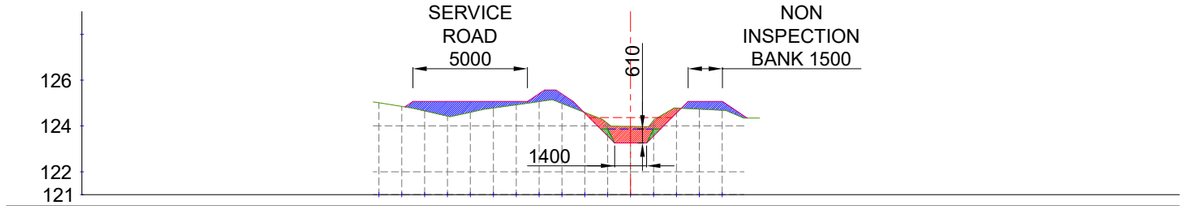
CH. (KM):- 0+900
DESIGNED BED LEVEL = 124.199 M




| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 124.882 | 124.678 | 124.636 | 124.599 | 124.592 | 124.684 | 124.776 | 124.868 | 124.568 | 123.788 | 123.646 | 123.662 | 124.499 | 124.573 | 124.505 | | |
| OFFSET (M) | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | | |

CUTTING AREA (SQ.M) = 0.992
FILLING AREA (SQ.M) = 0.986

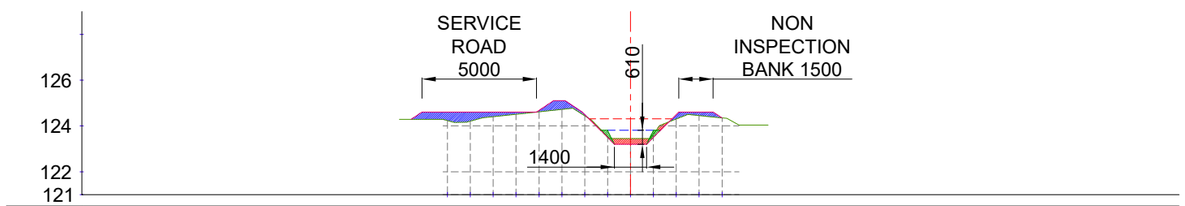
CH. (KM):- 1+100
DESIGNED BED LEVEL = 123.228 M




| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 125.009 | 124.851 | 124.654 | 124.428 | 124.601 | 124.786 | 124.926 | 125.065 | 124.982 | 124.588 | 124.106 | 123.980 | 124.237 | 124.784 | 124.734 | 124.684 | |
| OFFSET (M) | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | |

CUTTING AREA (SQ.M) = 2.051
FILLING AREA (SQ.M) = 3.508

CH. (KM):- 1+000
DESIGNED BED LEVEL = 123.256 M




| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 124.237 | 124.212 | 124.410 | 124.514 | 124.619 | 124.723 | 124.445 | 123.536 | 123.447 | 123.626 | 124.305 | 124.453 | 124.351 | | | | |
| OFFSET (M) | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | | | | |

CUTTING AREA (SQ.M) = 0.468
FILLING AREA (SQ.M) = 2.181

CH. (KM):- 1+200
DESIGNED BED LEVEL = 123.199 M

## LEGEND

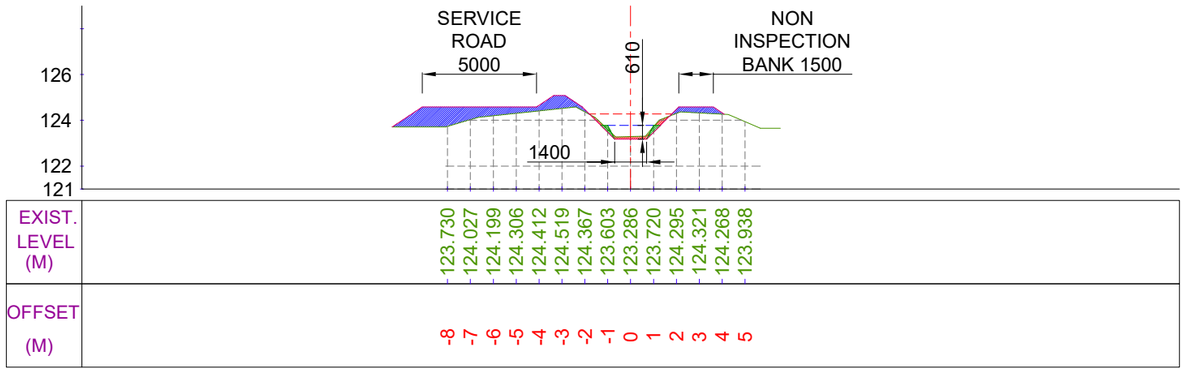
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

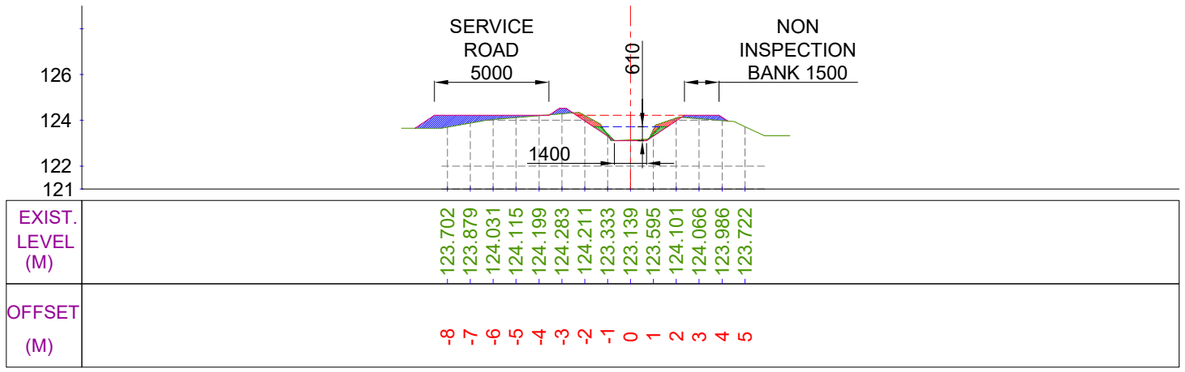
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 3 of 15 |

# X SECTION OF THUMBHI MINOR



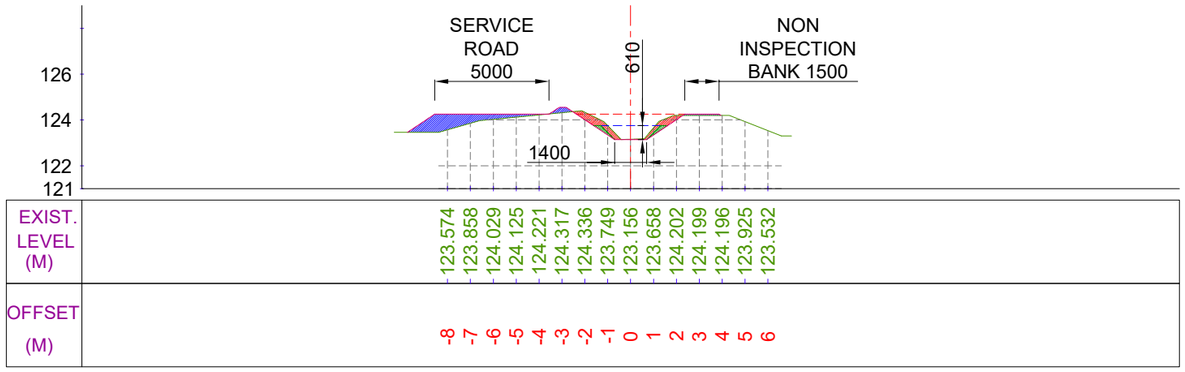

CUTTING AREA (SQ.M) = 0.329
FILLING AREA (SQ.M) = 6.758

CH. (KM):- 1+300
DESIGNED BED LEVEL = 123.171 M



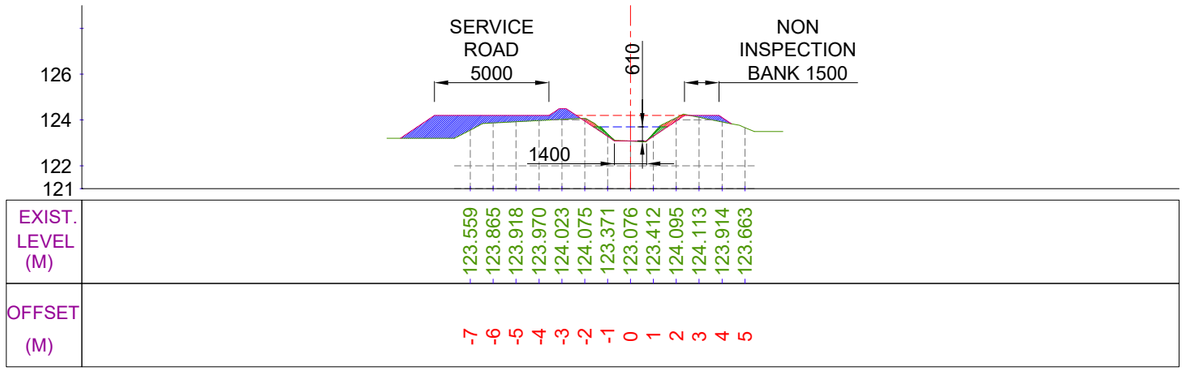

CUTTING AREA (SQ.M) = 0.510
FILLING AREA (SQ.M) = 1.938

CH. (KM):- 1+500
DESIGNED BED LEVEL = 123.113 M




CUTTING AREA (SQ.M) = 0.938
FILLING AREA (SQ.M) = 6.758

CH. (KM):- 1+400
DESIGNED BED LEVEL = 123.142 M




CUTTING AREA (SQ.M) = 0.276
FILLING AREA (SQ.M) = 3.934

CH. (KM):- 1+600
DESIGNED BED LEVEL = 123.085 M

## LEGEND

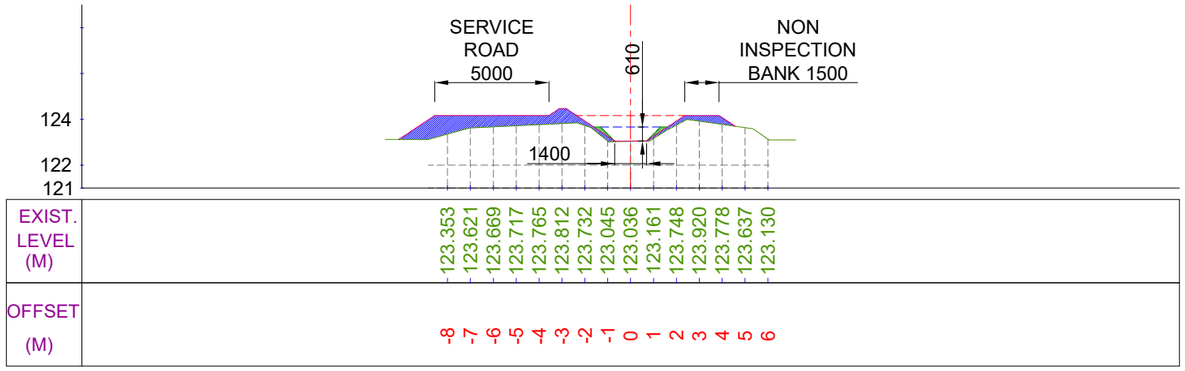
| | | |
|---|---|---|
| CUT AREA | EXISTING BED LINE | |
| | F.S.L. | |
| FILL AREA | DESIGNED BED LINE | |
| | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

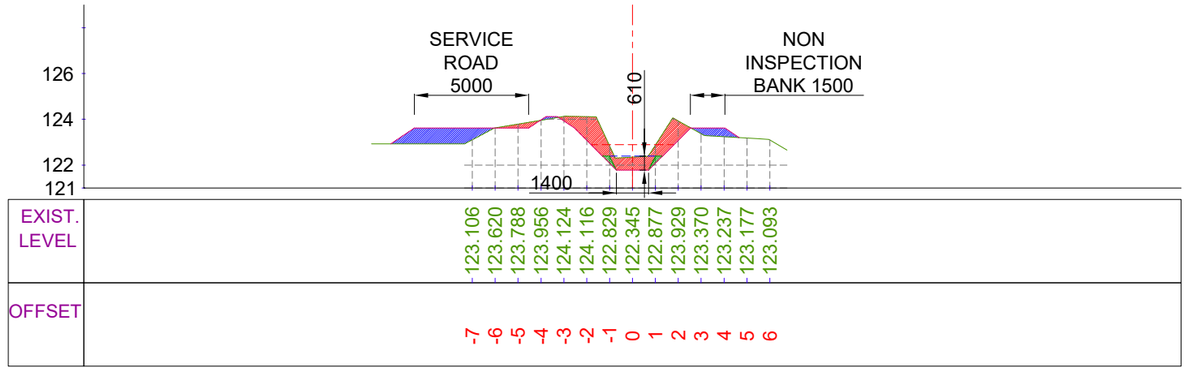
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 4 of 15 |

# X SECTION OF THUMBHI MINOR



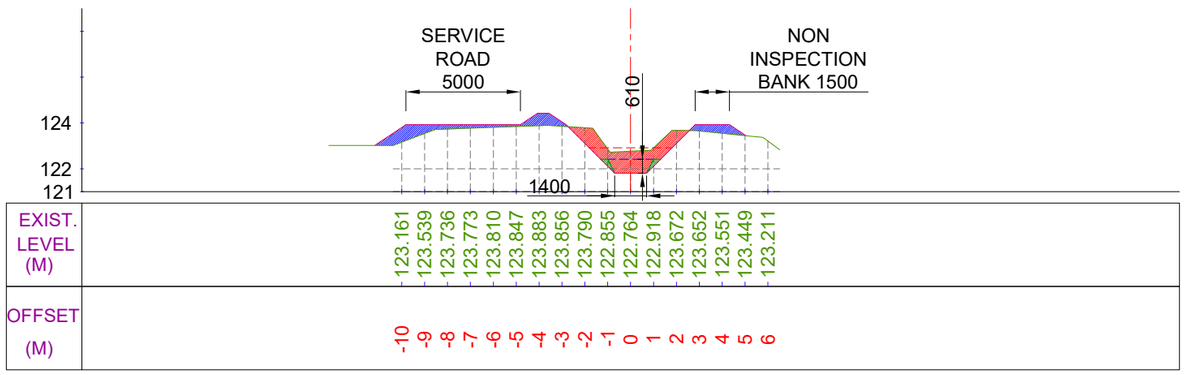

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 5.260

CH. (KM):- 1+700
DESIGNED BED LEVEL = 123.056 M



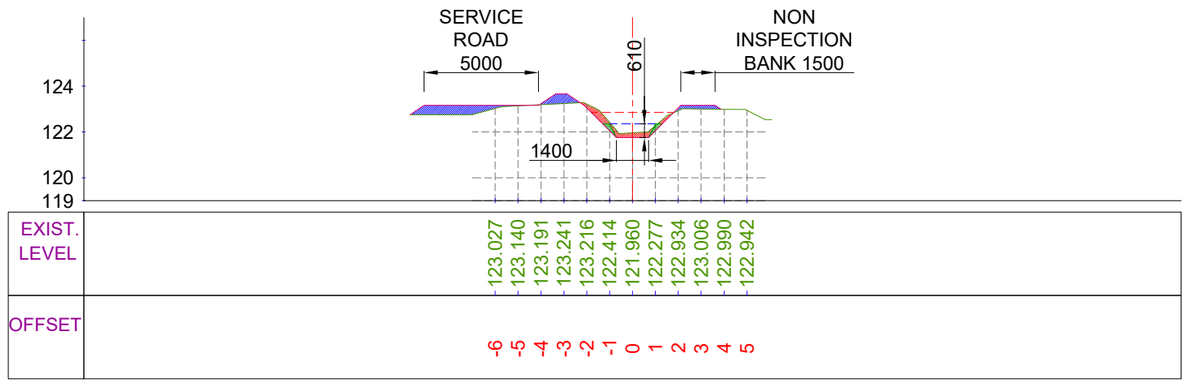

CUTTING AREA (SQ.M) = 4.261
FILLING AREA (SQ.M) = 2.888

CH. (KM):- 1+900
DESIGNED BED LEVEL = 121.779 M




CUTTING AREA (SQ.M) = 3.682
FILLING AREA (SQ.M) = 3.060

CH. (KM):- 1+800
DESIGNED BED LEVEL = 121.808 M




CUTTING AREA (SQ.M) = 0.793
FILLING AREA (SQ.M) = 2.075

CH. (KM):- 2+000
DESIGNED BED LEVEL = 121.751 M

## LEGEND

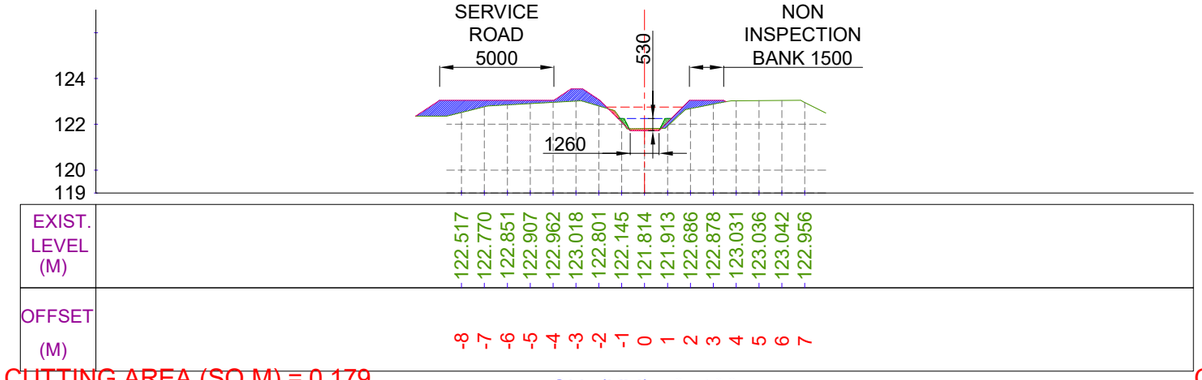
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

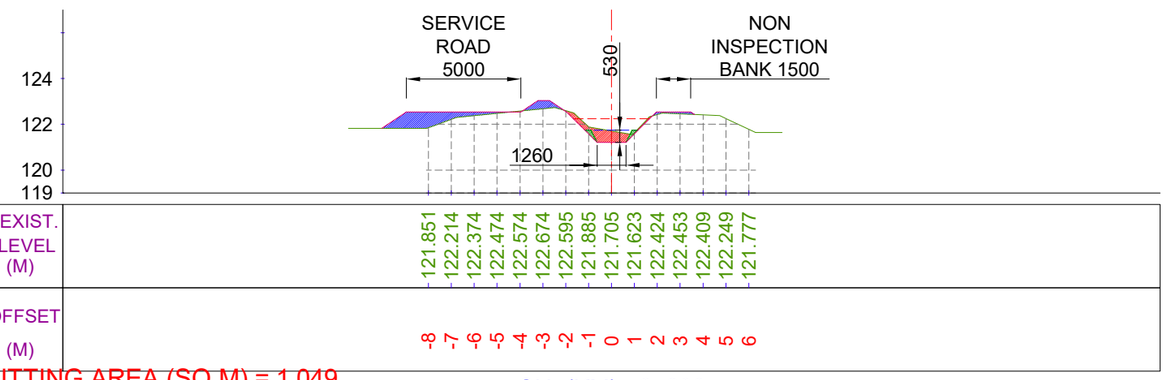
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 5 of 15 |

# X SECTION OF THUMBHI MINOR



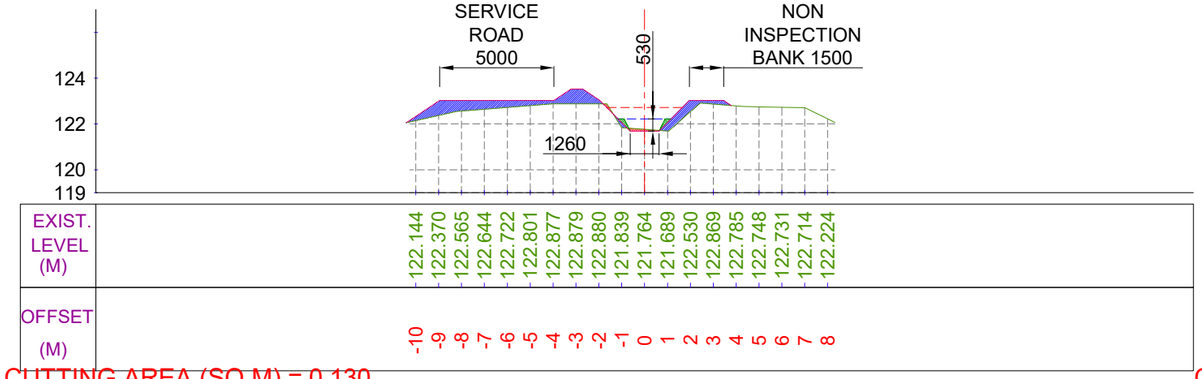

CUTTING AREA (SQ.M) = 0.179
FILLING AREA (SQ.M) = 3.370

CH. (KM):- 2+100
DESIGNED BED LEVEL = 121.722 M



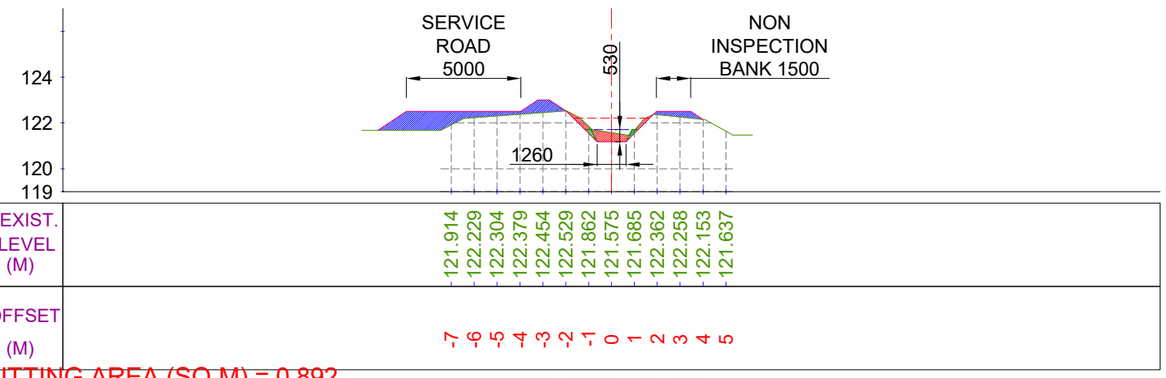

CUTTING AREA (SQ.M) = 1.049
FILLING AREA (SQ.M) = 2.476

CH. (KM):- 2+300
DESIGNED BED LEVEL = 121.208 M




CUTTING AREA (SQ.M) = 0.130
FILLING AREA (SQ.M) = 4.046

CH. (KM):- 2+200
DESIGNED BED LEVEL = 121.693 M




CUTTING AREA (SQ.M) = 0.892
FILLING AREA (SQ.M) = 4.043

CH. (KM):- 2+400
DESIGNED BED LEVEL = 121.179 M

## LEGEND

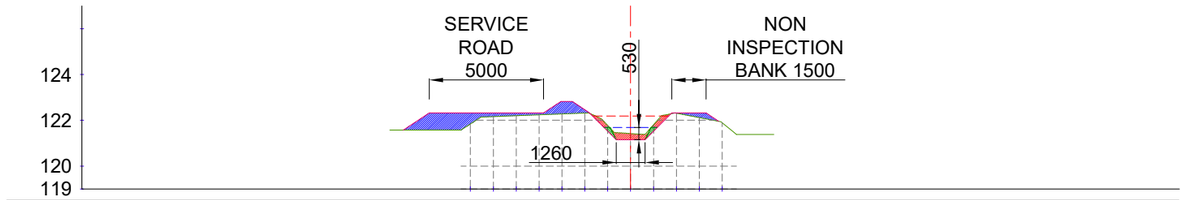
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

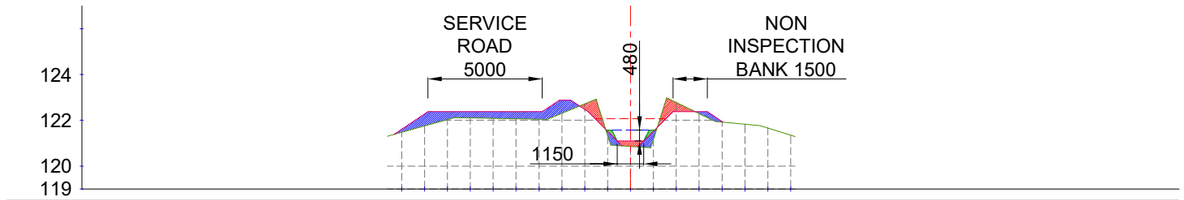
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|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 6 of 15 |

# X SECTION OF THUMBHI MINOR



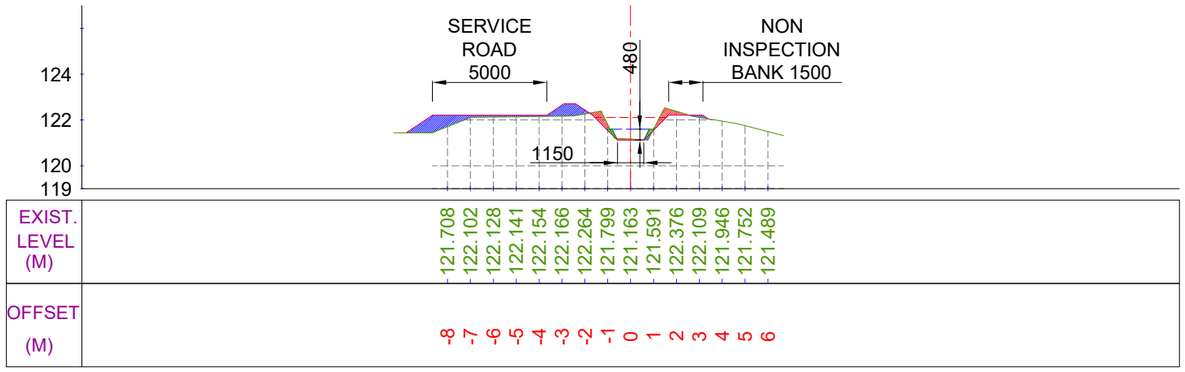

CUTTING AREA (SQ.M) = 0.694
FILLING AREA (SQ.M) = 3.190

CH. (KM):- 2+500
DESIGNED BED LEVEL = 121.151 M



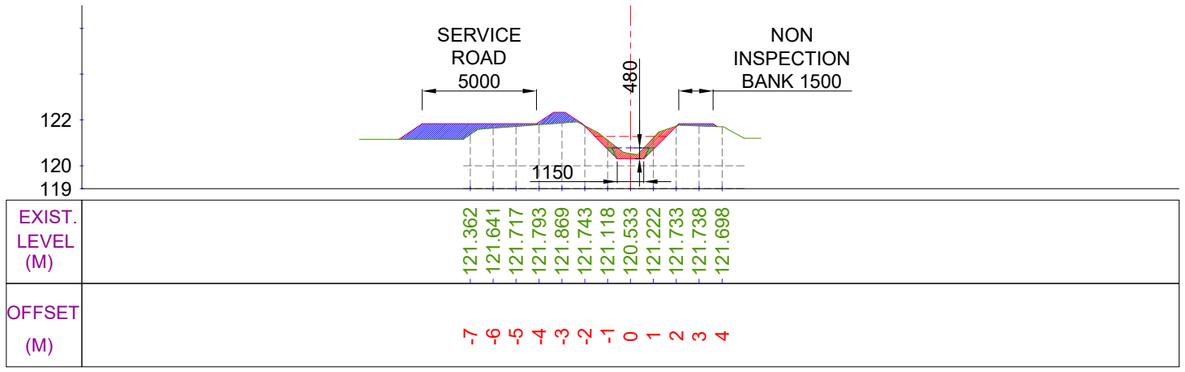

CUTTING AREA (SQ.M) = 1.311
FILLING AREA (SQ.M) = 3.348

CH. (KM):- 2+700
DESIGNED BED LEVEL = 121.094 M




CUTTING AREA (SQ.M) = 0.625
FILLING AREA (SQ.M) = 2.120

CH. (KM):- 2+600
DESIGNED BED LEVEL = 121.122 M




CUTTING AREA (SQ.M) = 1.152
FILLING AREA (SQ.M) = 2.963

CH. (KM):- 2+800
DESIGNED BED LEVEL = 120.303 M

## LEGEND

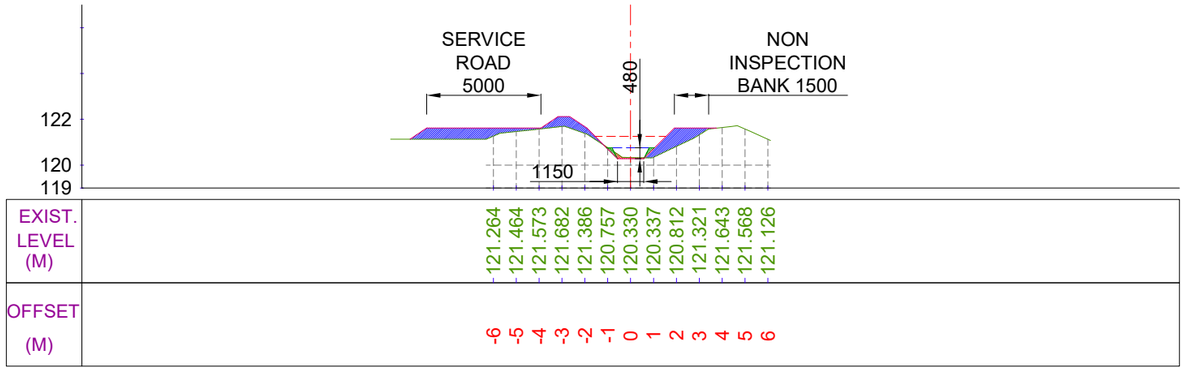
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

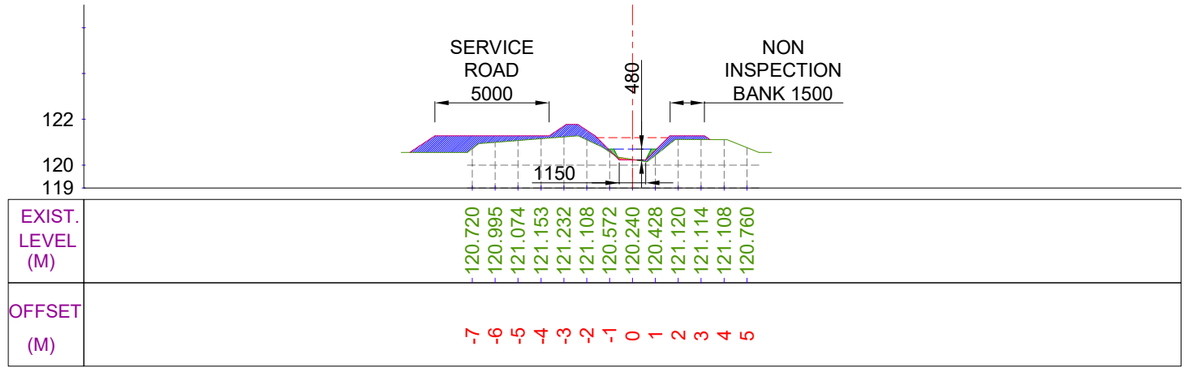
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 7 of 15 |

# X SECTION OF THUMBHI MINOR



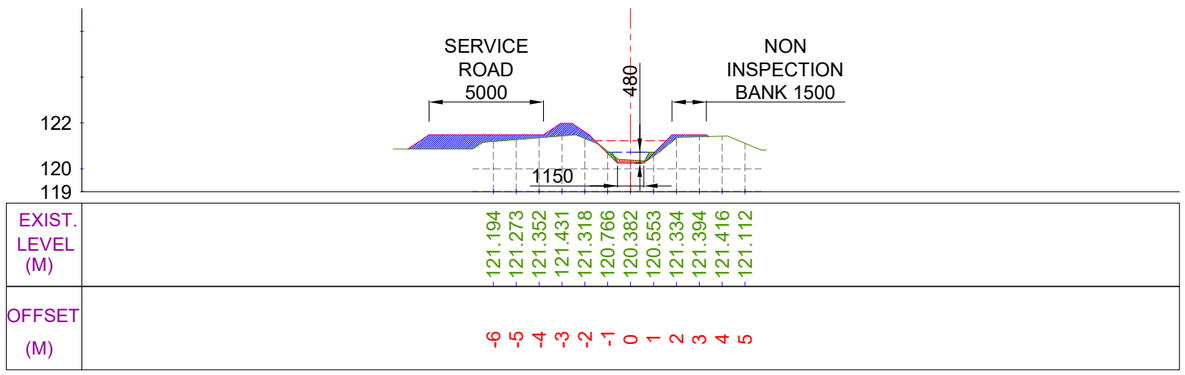

CUTTING AREA (SQ.M) = 0.098
FILLING AREA (SQ.M) = 3.983

CH. (KM):- 2+900
DESIGNED BED LEVEL = 120.274 M



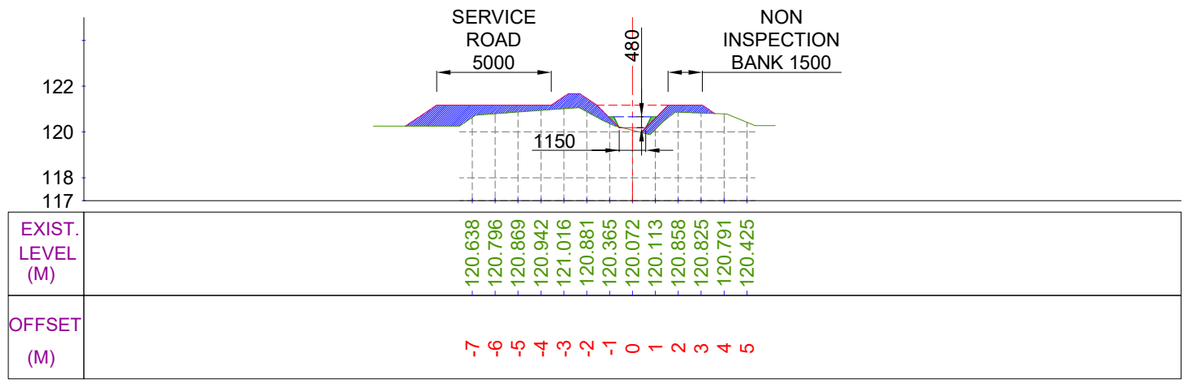

CUTTING AREA (SQ.M) = 0.044
FILLING AREA (SQ.M) = 3.881

CH. (KM):- 3+100
DESIGNED BED LEVEL = 120.217 M




CUTTING AREA (SQ.M) = 0.193
FILLING AREA (SQ.M) = 3.442

CH. (KM):- 3+000
DESIGNED BED LEVEL = 120.246 M




CUTTING AREA (SQ.M) = 0.001
FILLING AREA (SQ.M) = 5.501

CH. (KM):- 3+200
DESIGNED BED LEVEL = 120.189 M

## LEGEND

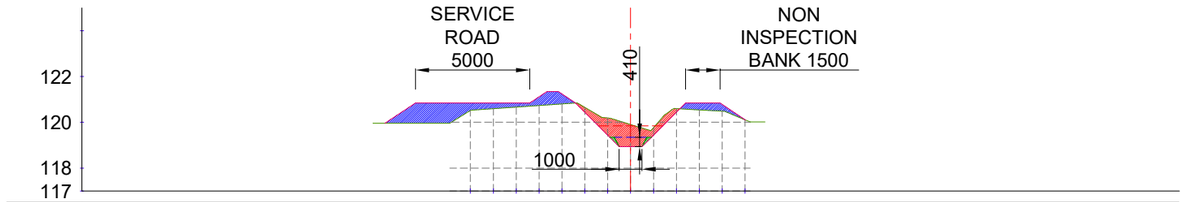
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 8 of 15 |

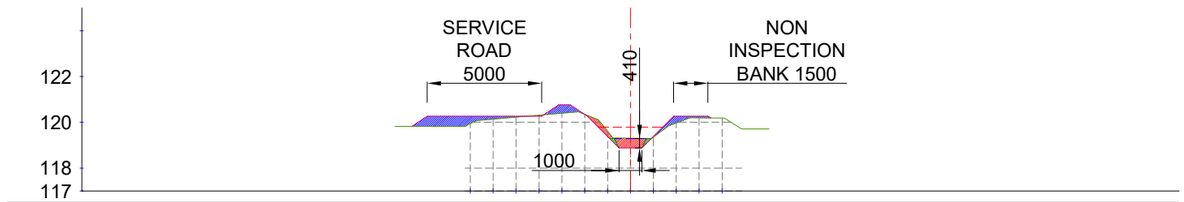
# X SECTION OF THUMBHI MINOR




| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 120.515 | 120.594 | 120.663 | 120.732 | 120.801 | 120.653 | 120.185 | 119.901 | 119.760 | 120.600 | 120.541 | 120.482 | 120.109 |
| OFFSET (M) | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 |

CUTTING AREA (SQ.M) = 2.429
FILLING AREA (SQ.M) = 4.515

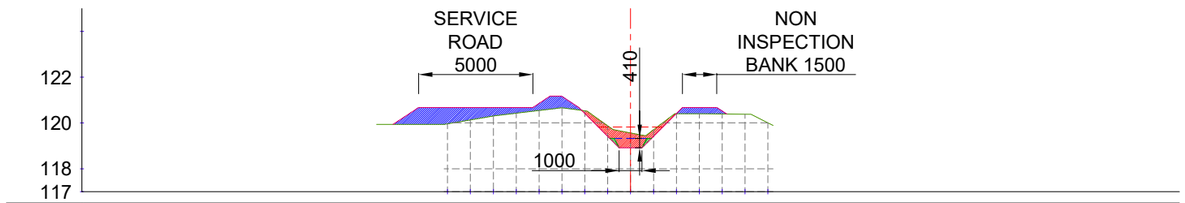
CH. (KM):- 3+300
DESIGNED BED LEVEL = 118.940 M




| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 119.937 | 120.138 | 120.223 | 120.307 | 120.392 | 120.344 | 119.605 | 119.301 | 119.348 | 119.969 | 120.192 | 120.183 |
| OFFSET (M) | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

CUTTING AREA (SQ.M) = 0.755
FILLING AREA (SQ.M) = 2.010

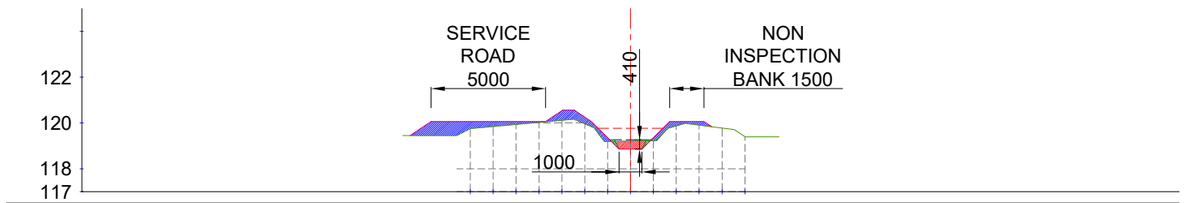
CH. (KM):- 3+500
DESIGNED BED LEVEL = 118.883 M




| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 119.959 | 120.133 | 120.305 | 120.425 | 120.543 | 120.660 | 120.531 | 119.877 | 119.566 | 119.705 | 120.400 | 120.404 | 120.392 | 120.378 | 119.998 |
| OFFSET (M) | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

CUTTING AREA (SQ.M) = 1.538
FILLING AREA (SQ.M) = 4.239

CH. (KM):- 3+400
DESIGNED BED LEVEL = 118.912 M




| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIST. LEVEL (M) | 119.747 | 119.841 | 119.932 | 120.024 | 120.114 | 119.962 | 119.192 | 119.209 | 119.225 | 119.872 | 119.906 | 119.777 | 119.400 |
| OFFSET (M) | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 |

CUTTING AREA (SQ.M) = 0.418
FILLING AREA (SQ.M) = 3.019

CH. (KM):- 3+600
DESIGNED BED LEVEL = 118.854 M

## LEGEND

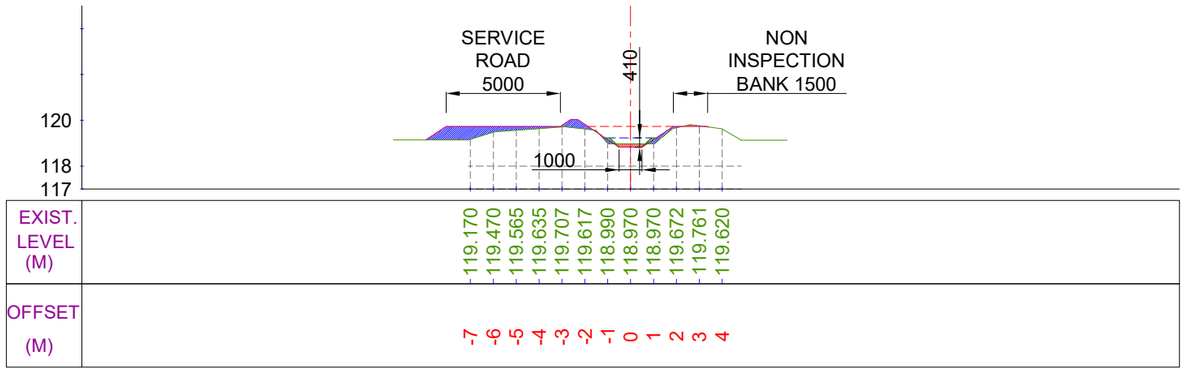
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

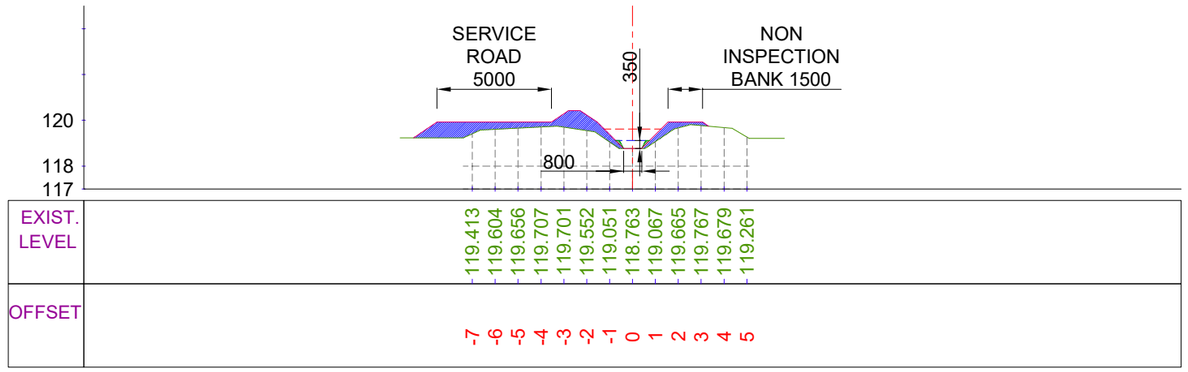
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 9 of 15 |

# X SECTION OF THUMBHI MINOR



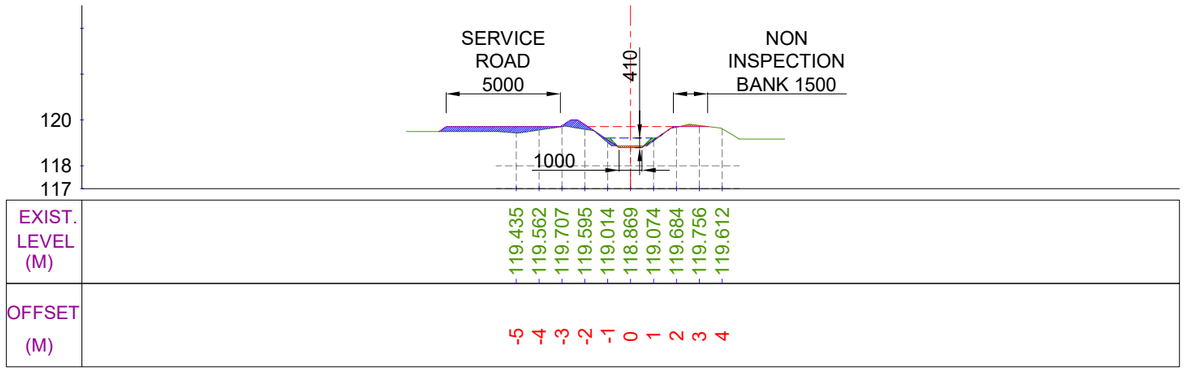

CUTTING AREA (SQ.M) = 0.206
FILLING AREA (SQ.M) = 2.279

CH. (KM):- 3+700
DESIGNED BED LEVEL = 118.826 M



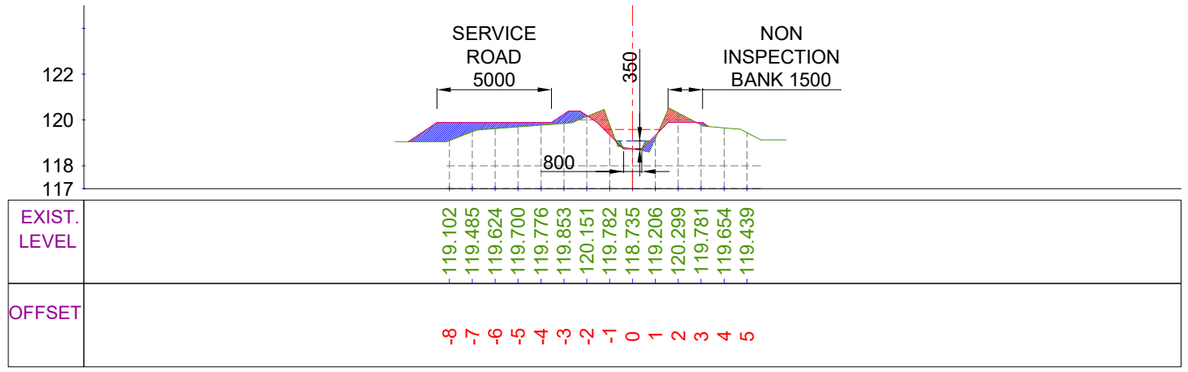

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 4.582

CH. (KM):- 3+900
DESIGNED BED LEVEL = 118.769 M




CUTTING AREA (SQ.M) = 0.144
FILLING AREA (SQ.M) = 1.410

CH. (KM):- 3+800
DESIGNED BED LEVEL = 118.797 M




CUTTING AREA (SQ.M) = 1.047
FILLING AREA (SQ.M) = 3.050

CH. (KM):- 4+000
DESIGNED BED LEVEL = 118.739 M

## LEGEND

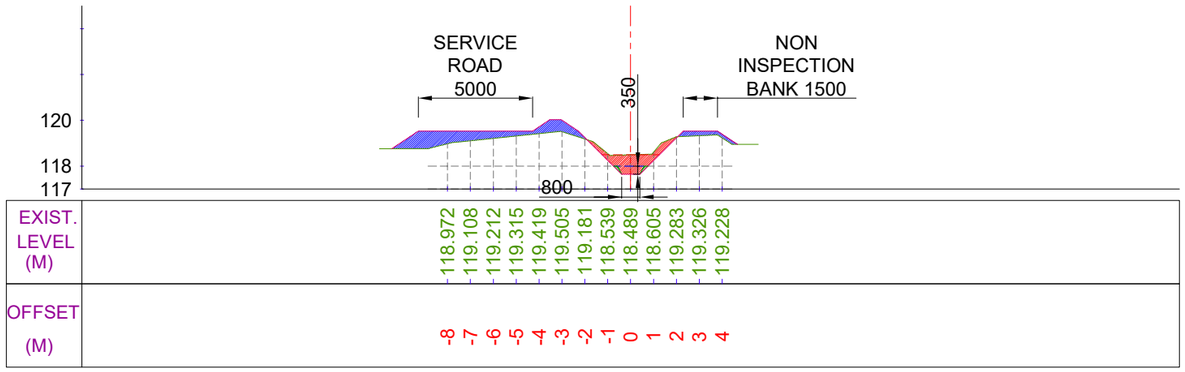
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

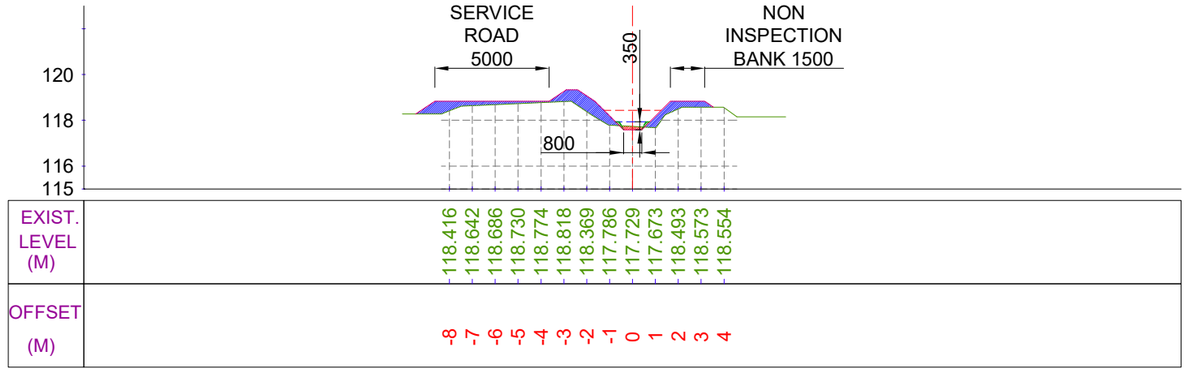
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 10 of 15 |

# X SECTION OF THUMBHI MINOR



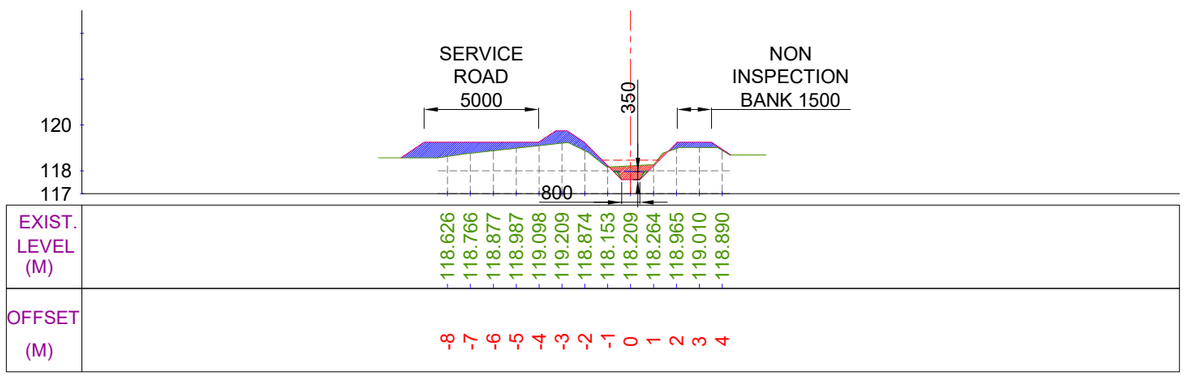

CUTTING AREA (SQ.M) = 1.748
FILLING AREA (SQ.M) = 3.926

CH. (KM):- 4+100
DESIGNED BED LEVEL = 117.643 M



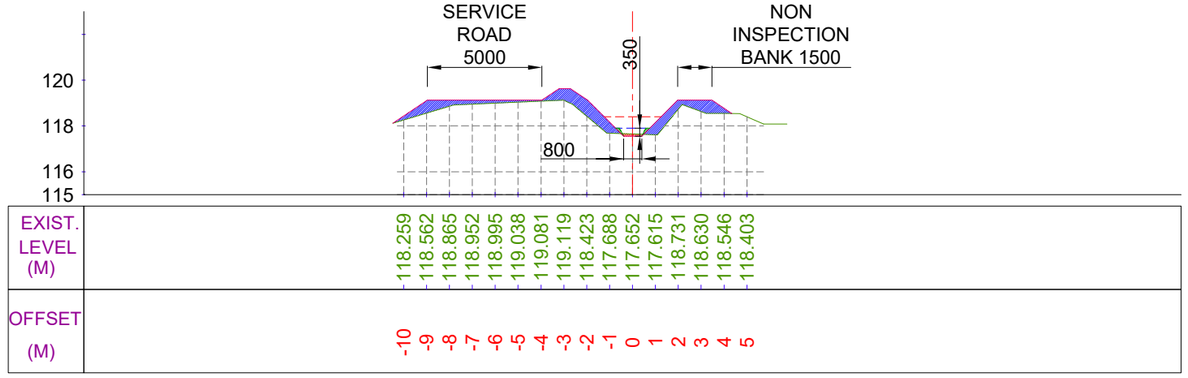

CUTTING AREA (SQ.M) = 0.127
FILLING AREA (SQ.M) = 3.586

CH. (KM):- 4+300
DESIGNED BED LEVEL = 117.584 M




CUTTING AREA (SQ.M) = 0.831
FILLING AREA (SQ.M) = 4.032

CH. (KM):- 4+200
DESIGNED BED LEVEL = 117.613 M




CUTTING AREA (SQ.M) = 0.082
FILLING AREA (SQ.M) = 4.555

CH. (KM):- 4+400
DESIGNED BED LEVEL = 117.555 M

## LEGEND

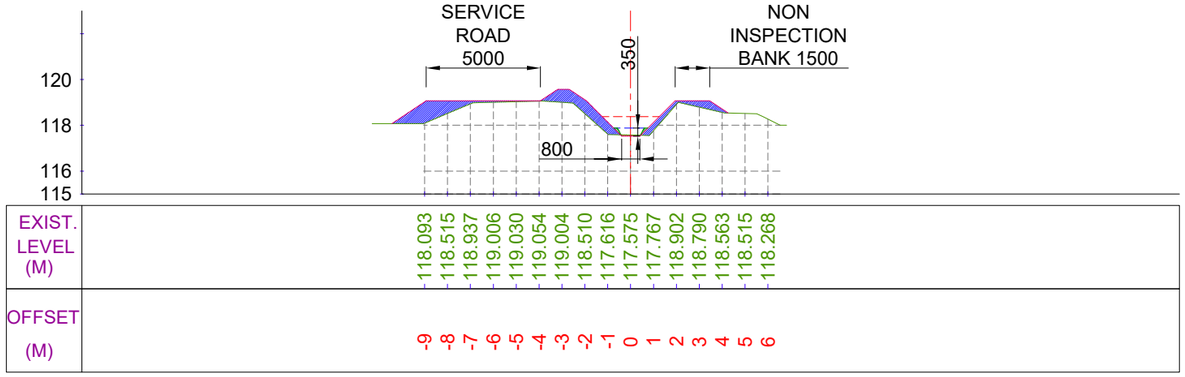
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

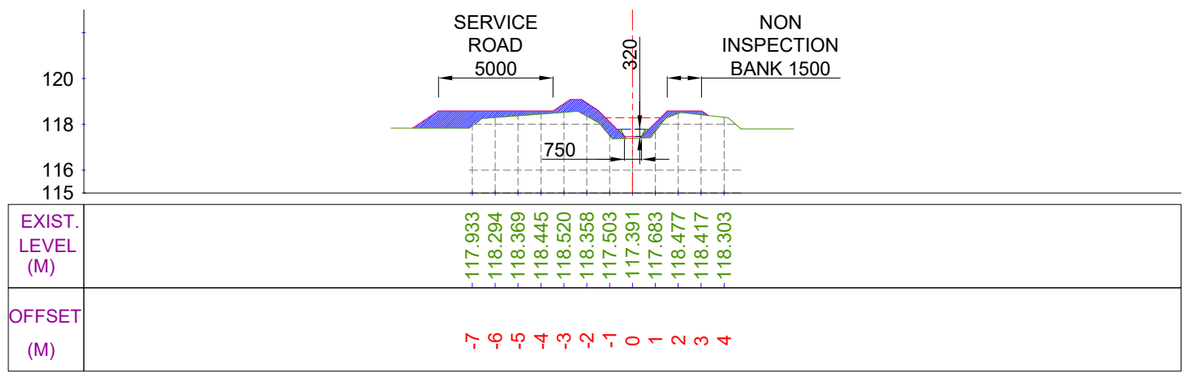
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 11 of 15 |

# X SECTION OF THUMBHI MINOR



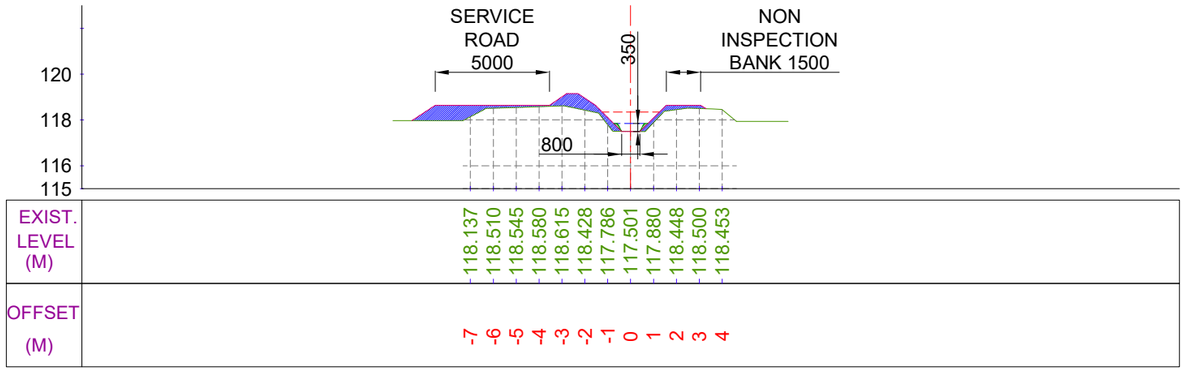

CUTTING AREA (SQ.M) = 0.041
FILLING AREA (SQ.M) = 4.431

CH. (KM):- 4+500
DESIGNED BED LEVEL = 117.525 M



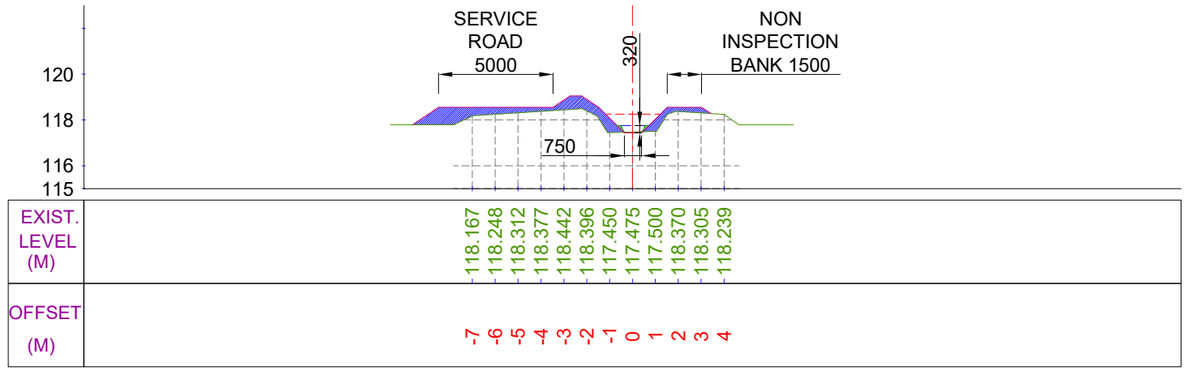

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 4.479

CH. (KM):- 4+700
DESIGNED BED LEVEL = 117.466 M




CUTTING AREA (SQ.M) = 0.004
FILLING AREA (SQ.M) = 3.525

CH. (KM):- 4+600
DESIGNED BED LEVEL = 117.496 M




CUTTING AREA (SQ.M) = 0.032
FILLING AREA (SQ.M) = 4.499

CH. (KM):- 4+800
DESIGNED BED LEVEL = 117.434 M

## LEGEND

CUT AREA

FILL AREA

EXISTING BED LINE

F.S.L.

DESIGNED BED LINE

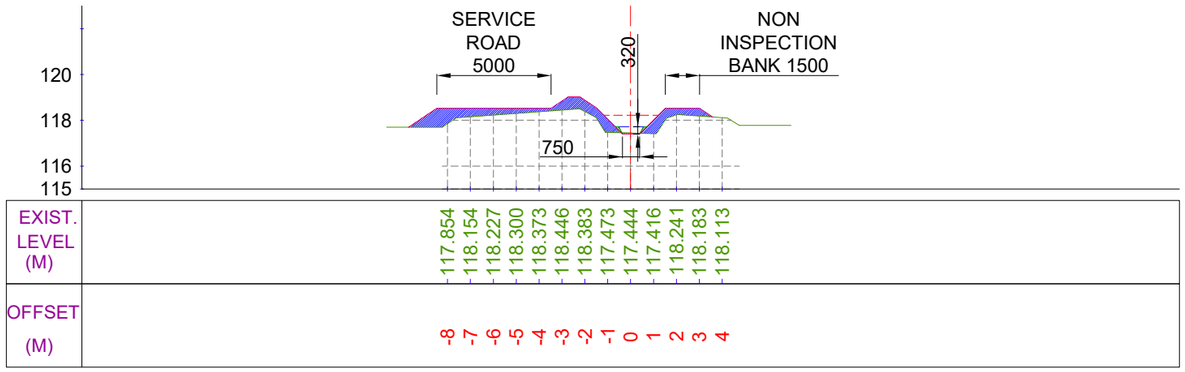
H.G. LINE

Prepared by :-

WAPCOS LTD.

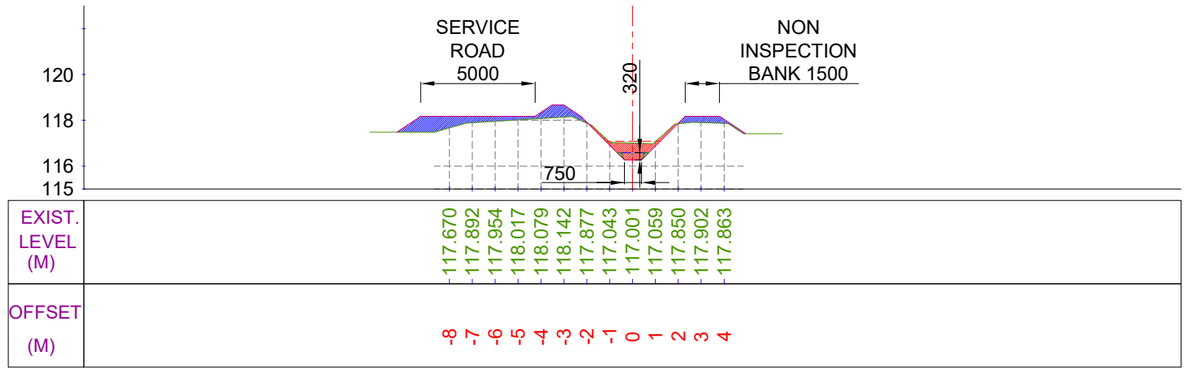
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 12 of 15 |

# X SECTION OF THUMBHI MINOR



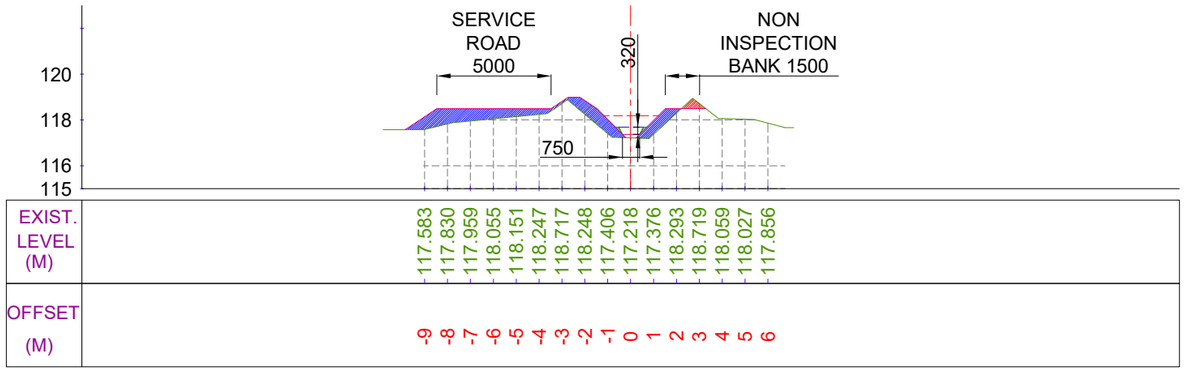

CUTTING AREA (SQ.M) = 0.032
FILLING AREA (SQ.M) = 4.556

CH. (KM):- 4+900
DESIGNED BED LEVEL = 117.402 M



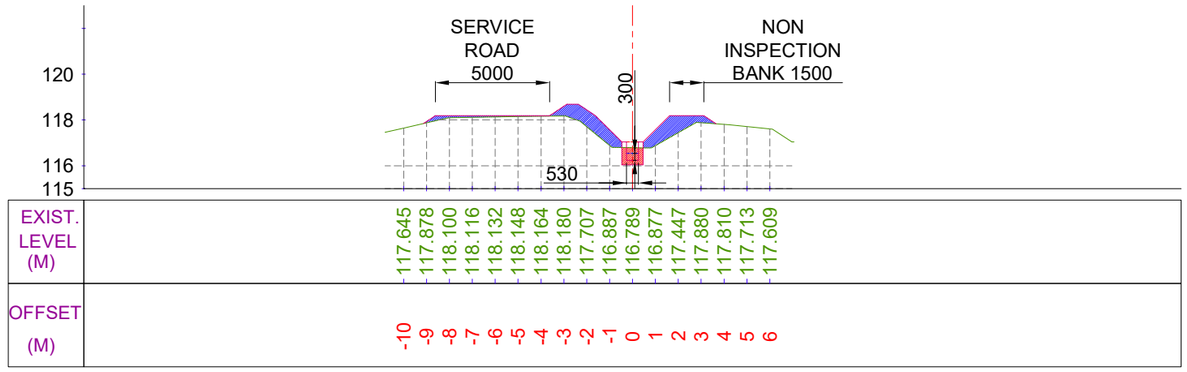

CUTTING AREA (SQ.M) = 1.244
FILLING AREA (SQ.M) = 3.448

CH. (KM):- 5+100
DESIGNED BED LEVEL = 116.270 M




CUTTING AREA (SQ.M) = 0.245
FILLING AREA (SQ.M) = 4.905

CH. (KM):- 5+000
DESIGNED BED LEVEL = 117.370 M




CUTTING AREA (SQ.M) = 0.699
FILLING AREA (SQ.M) = 3.893

CH. (KM):- 5+200
DESIGNED BED LEVEL = 116.238 M

## LEGEND

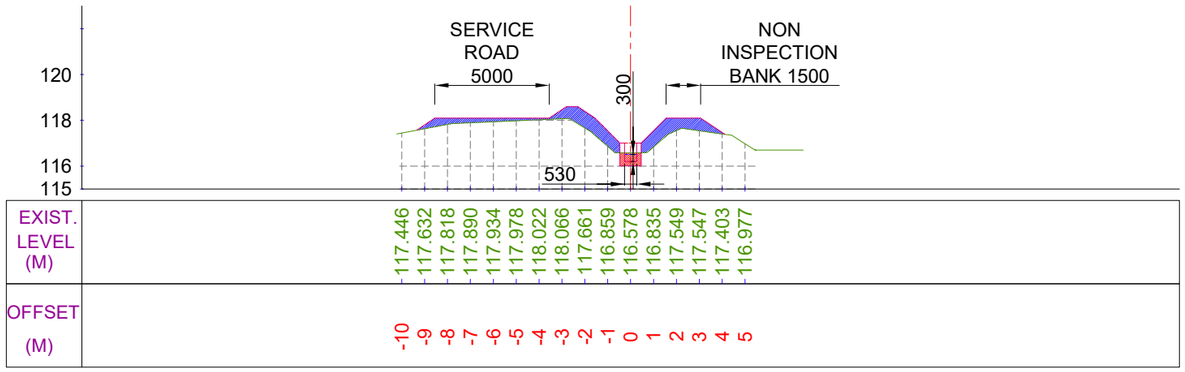
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

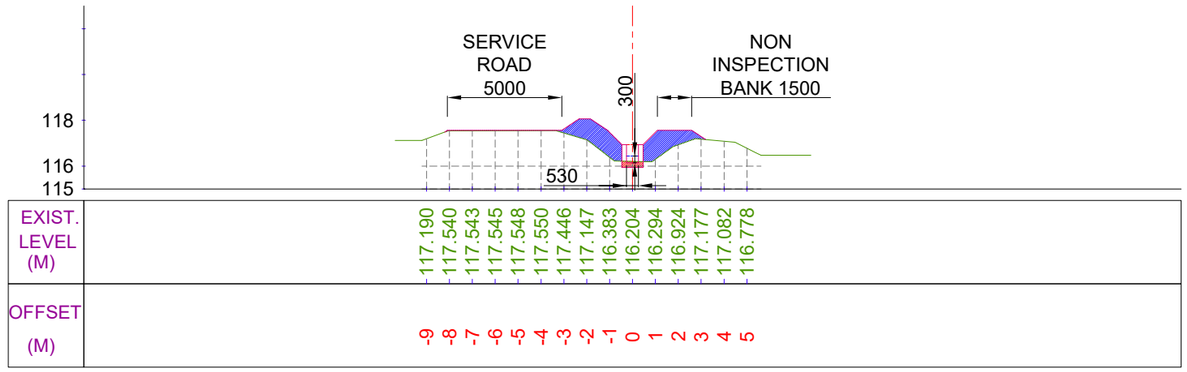
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- |

# X SECTION OF THUMBHI MINOR



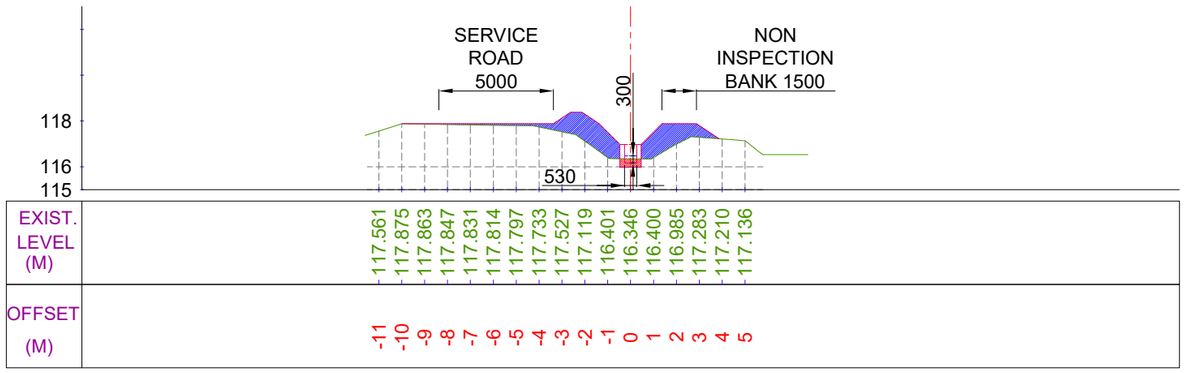

CUTTING AREA (SQ.M) = 0.533
FILLING AREA (SQ.M) = 4.644

CH. (KM):- 5+300
DESIGNED BED LEVEL = 116.205 M



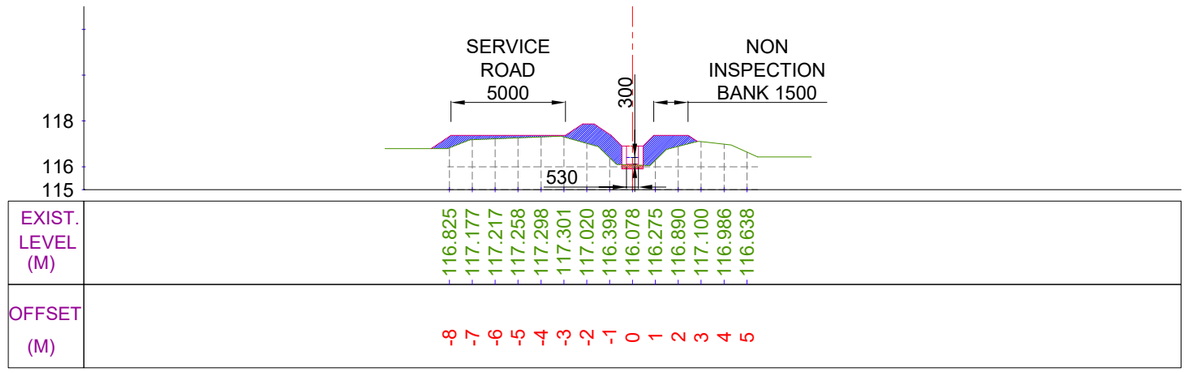

CUTTING AREA (SQ.M) = 0.248
FILLING AREA (SQ.M) = 4.156

CH. (KM):- 5+500
DESIGNED BED LEVEL = 116.138 M




CUTTING AREA (SQ.M) = 0.349
FILLING AREA (SQ.M) = 5.684

CH. (KM):- 5+400
DESIGNED BED LEVEL = 116.171 M




CUTTING AREA (SQ.M) = 0.161
FILLING AREA (SQ.M) = 4.485

CH. (KM):- 5+600
DESIGNED BED LEVEL = 116.105 M

## LEGEND

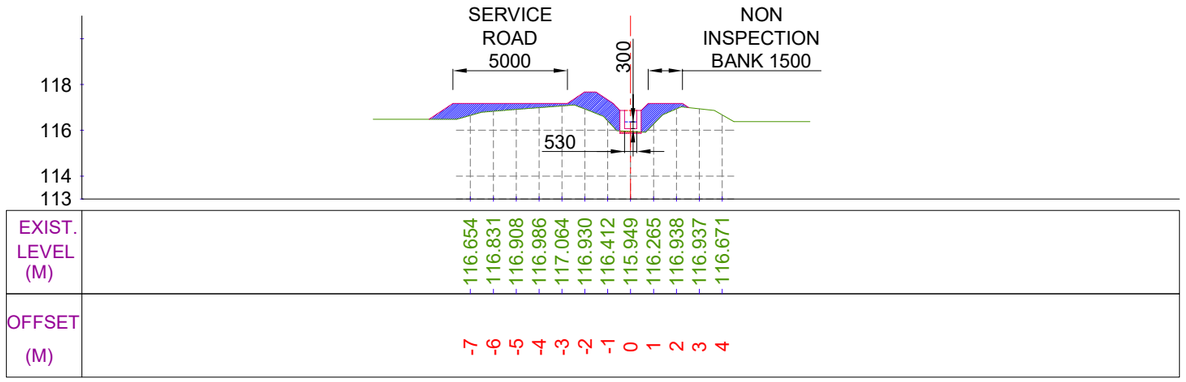
| | | | |
|---|---|---|---|
| | CUT AREA | | EXISTING BED LINE |
| | | | F.S.L. |
| | FILL AREA | | DESIGNED BED LINE |
| | | | H.G. LINE |

Prepared by :-

WAPCOS LTD.

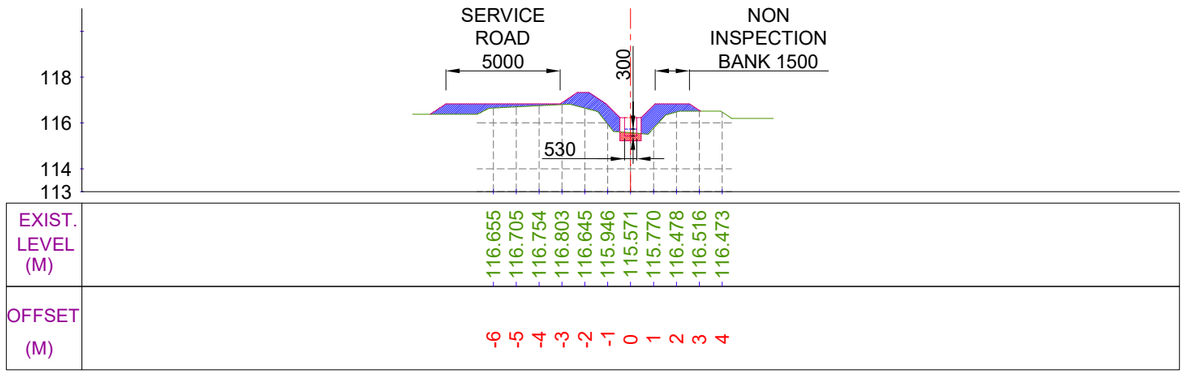
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 14 of 15 |

# X SECTION OF THUMBHI MINOR




CUTTING AREA (SQ.M) = 0.072
FILLING AREA (SQ.M) = 4.739

CH. (KM):- 5+700
DESIGNED BED LEVEL = 116.071 M




CUTTING AREA (SQ.M) = 0.319
FILLING AREA (SQ.M) = 4.245

CH. (KM):- 5+800
DESIGNED BED LEVEL = 115.428 M

| LEGEND | | | |
|---|---|---|---|
| | CUT AREA | EXISTING BED LINE | |
| | | F.S.L. | |
| | FILL AREA | DESIGNED BED LINE | |
| | | H.G. LINE | |

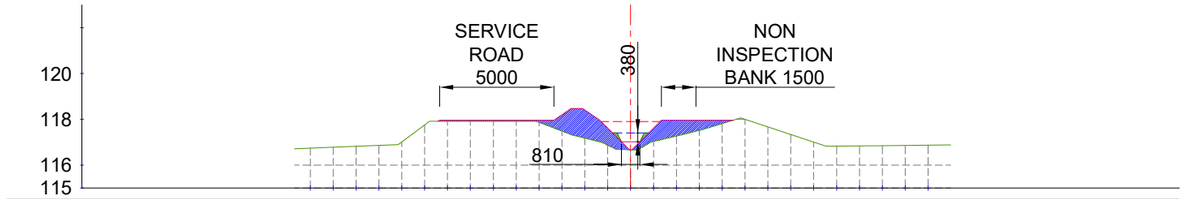
Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF THUMBHI MINOR (OFFTAKE FROM RD - 7+260 KM. (L), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ XSEC- 15 of 15 |

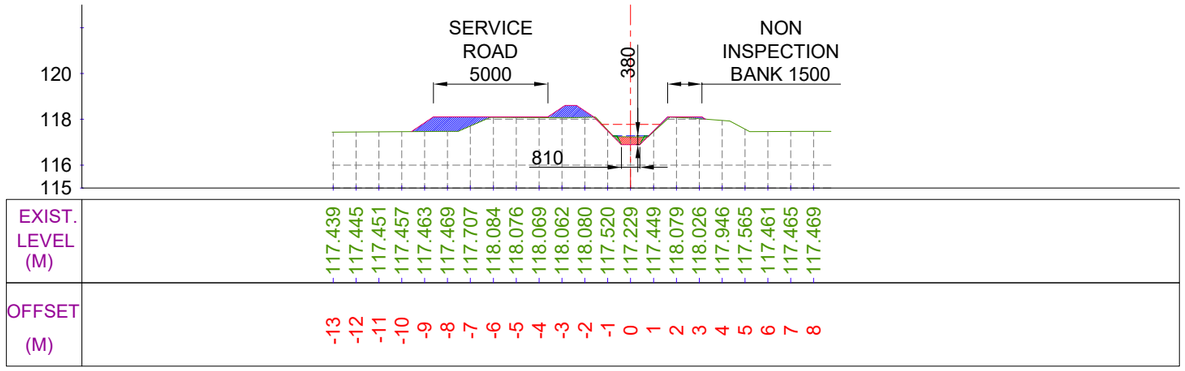
# *SOTIDIH MINOR*

# X SECTION OF SOTHIDIH MINOR



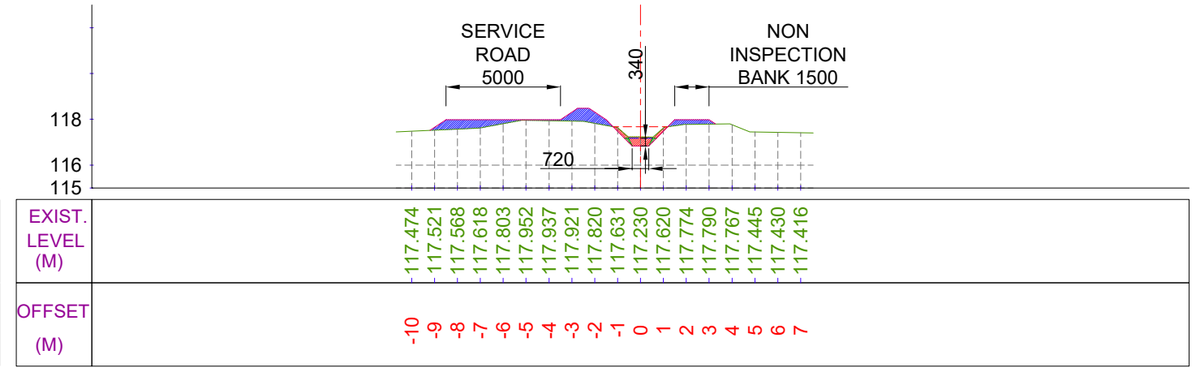

| | | |

# X SECTION OF SOTHIDIH MINOR



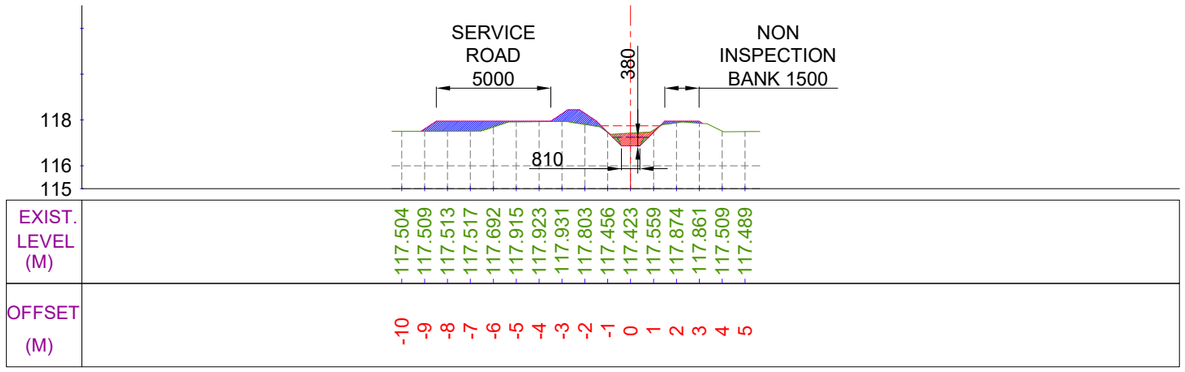

CUTTING AREA (SQ.M) = 0.356
FILLING AREA (SQ.M) = 2.361

CH. (KM):- 0+500
DESIGNED BED LEVEL = 116.897 M



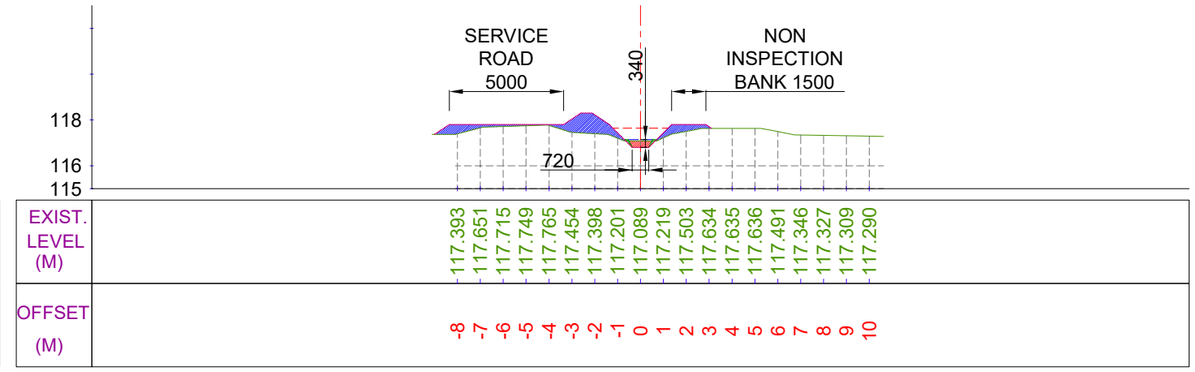

CUTTING AREA (SQ.M) = 0.532
FILLING AREA (SQ.M) = 2.402

CH. (KM):- 0+700
DESIGNED BED LEVEL = 116.837 M




CUTTING AREA (SQ.M) = 0.709
FILLING AREA (SQ.M) = 2.346

CH. (KM):- 0+600
DESIGNED BED LEVEL = 116.867 M




CUTTING AREA (SQ.M) = 0.243
FILLING AREA (SQ.M) = 3.047

CH. (KM):- 0+800
DESIGNED BED LEVEL = 116.807 M

## LEGEND

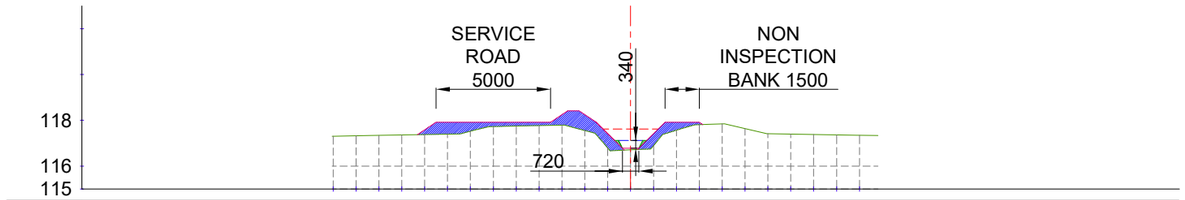
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

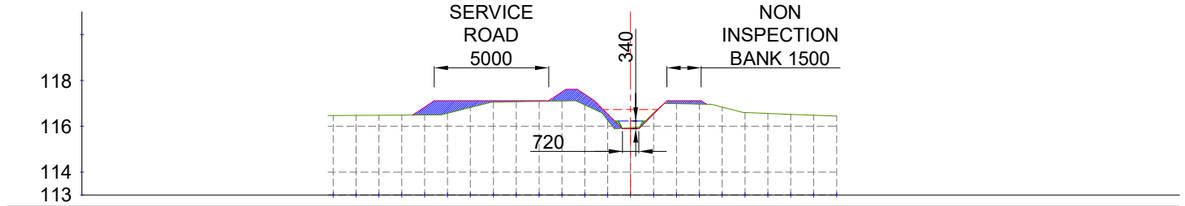
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF SOTHIDIH MINOR (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC- 2 of 8 |

# X SECTION OF SOTHIDIH MINOR



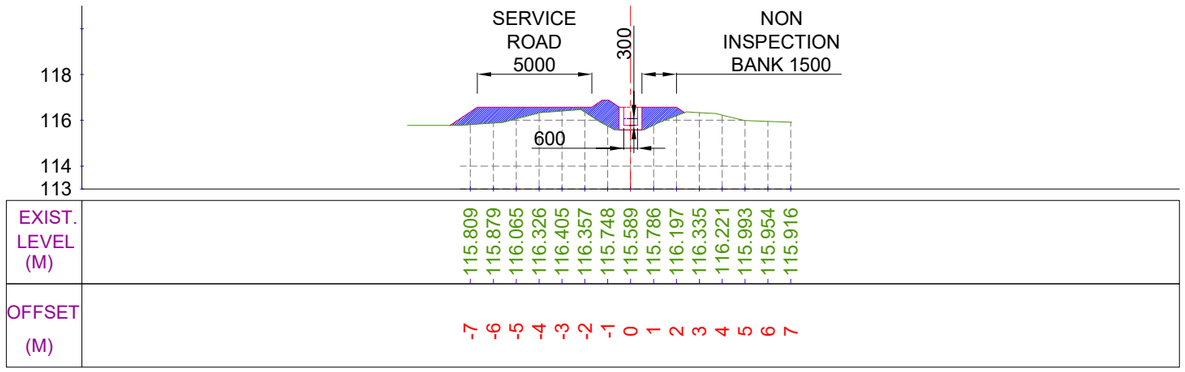

| | | |

# X SECTION OF SOTHIDIH MINOR



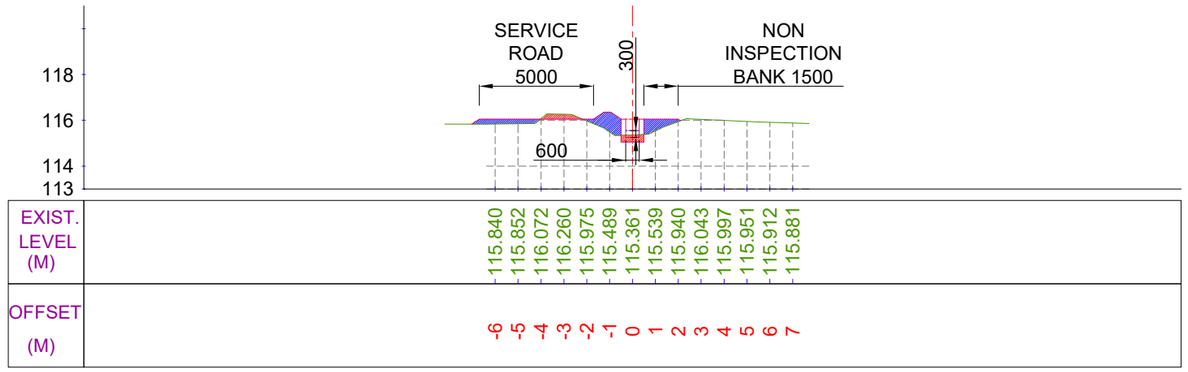

| | | |

# X SECTION OF SOTHIDIH MINOR



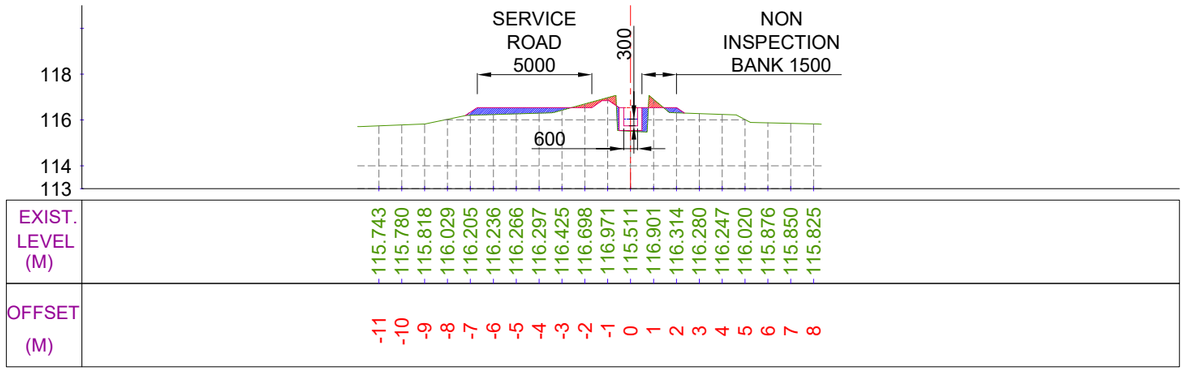

CUTTING AREA (SQ.M) = 0.017
FILLING AREA (SQ.M) = 4.611

CH. (KM):- 1+700
DESIGNED BED LEVEL = 115.772 M



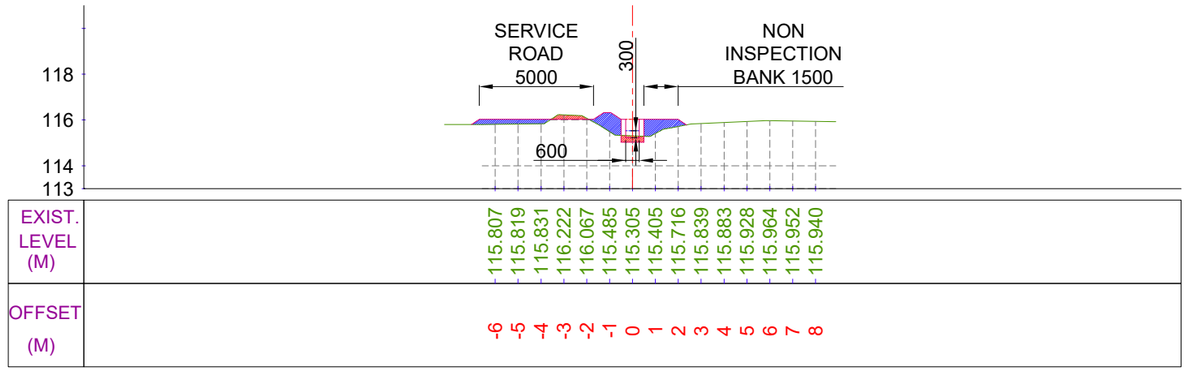

CUTTING AREA (SQ.M) = 0.613
FILLING AREA (SQ.M) = 2.055

CH. (KM):- 1+900
DESIGNED BED LEVEL = 115.254 M




CUTTING AREA (SQ.M) = 0.466
FILLING AREA (SQ.M) = 1.628

CH. (KM):- 1+800
DESIGNED BED LEVEL = 115.742 M




CUTTING AREA (SQ.M) = 0.528
FILLING AREA (SQ.M) = 2.283

CH. (KM):- 2+000
DESIGNED BED LEVEL = 115.224 M

## LEGEND

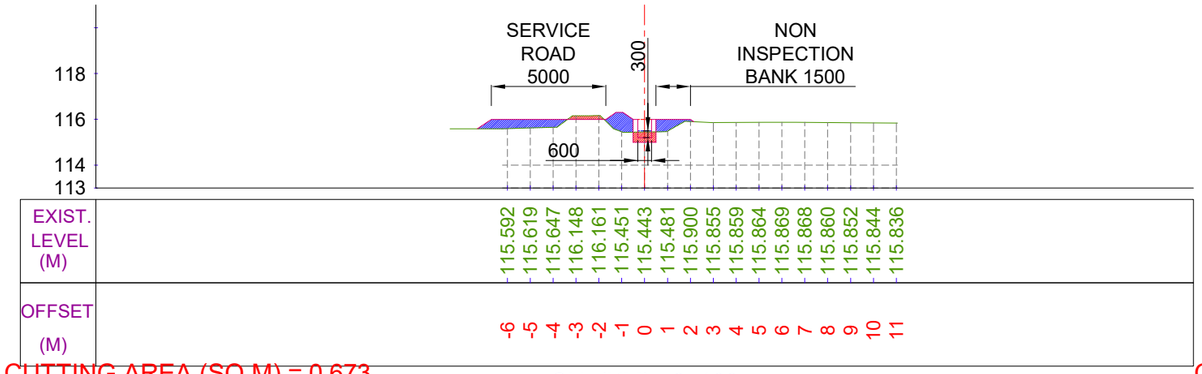
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

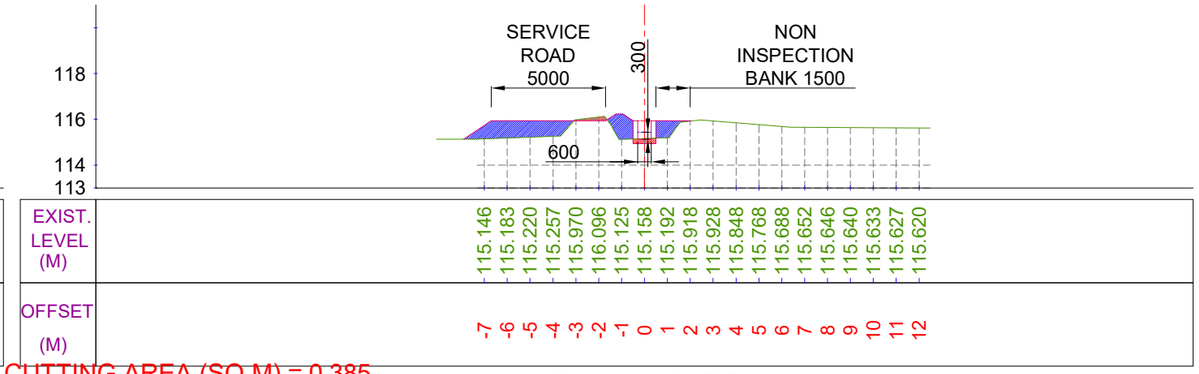
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF SOTHIDIH MINOR (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC- 5 of 8 |

# X SECTION OF SOTHIDIH MINOR



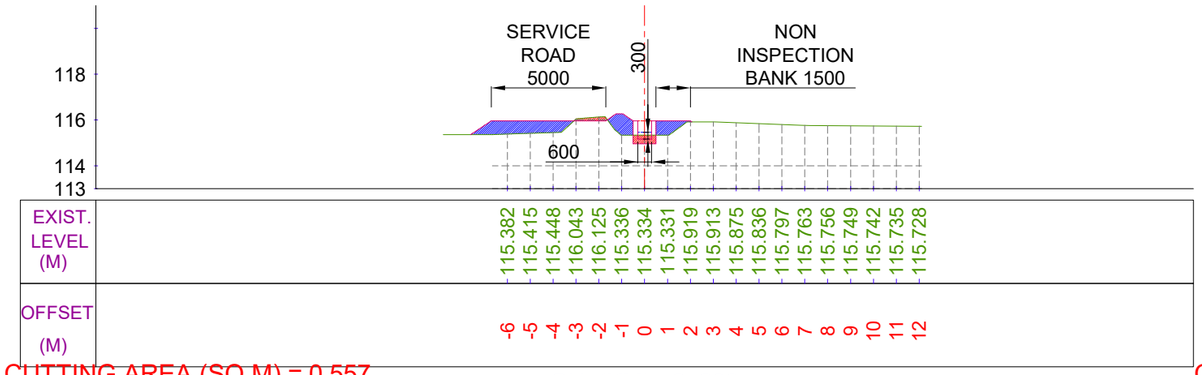

CUTTING AREA (SQ.M) = 0.673
FILLING AREA (SQ.M) = 2.583

CH. (KM):- 2+100
DESIGNED BED LEVEL = 115.194 M



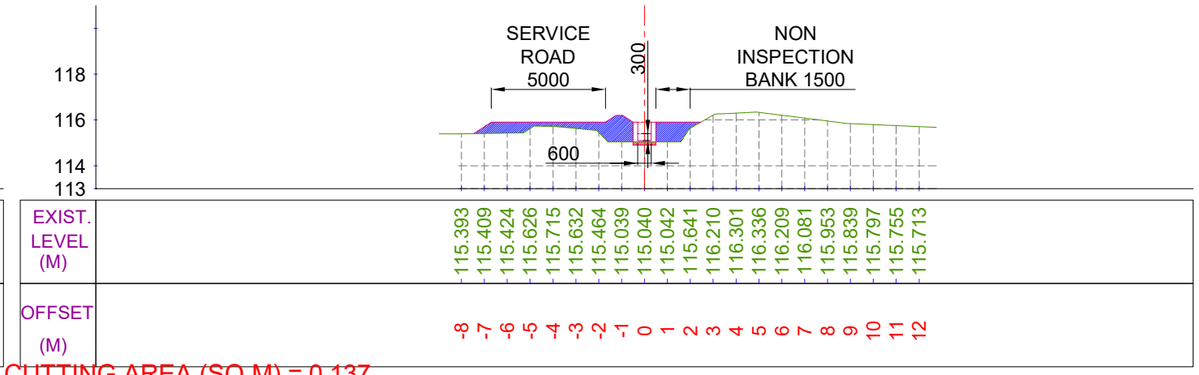

CUTTING AREA (SQ.M) = 0.385
FILLING AREA (SQ.M) = 4.392

CH. (KM):- 2+300
DESIGNED BED LEVEL = 115.133 M




CUTTING AREA (SQ.M) = 0.557
FILLING AREA (SQ.M) = 3.493

CH. (KM):- 2+200
DESIGNED BED LEVEL = 115.163 M




CUTTING AREA (SQ.M) = 0.137
FILLING AREA (SQ.M) = 4.355

CH. (KM):- 2+400
DESIGNED BED LEVEL = 115.103 M

## LEGEND

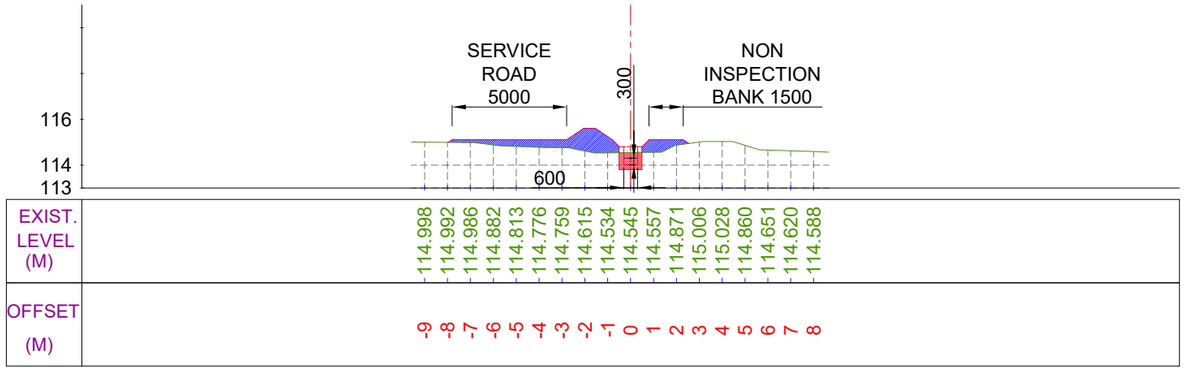
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

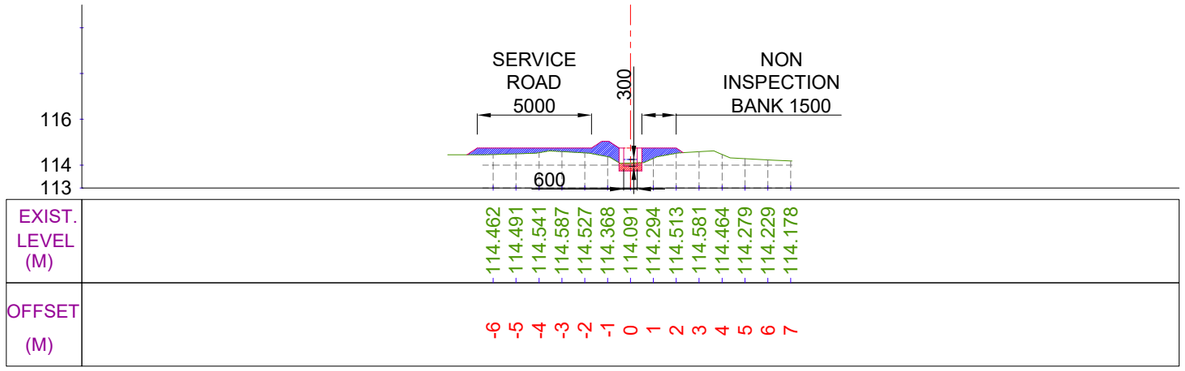
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF SOTHIDIH MINOR (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC- 6 of 8 |

# X SECTION OF SOTHIDIH MINOR



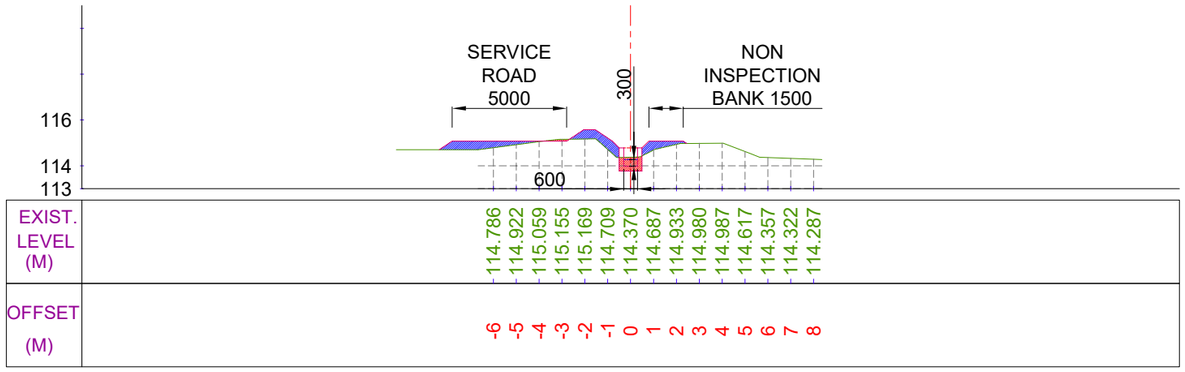

CUTTING AREA (SQ.M) = 0.740
FILLING AREA (SQ.M) = 3.758

CH. (KM):- 2+500
DESIGNED BED LEVEL = 114.005 M



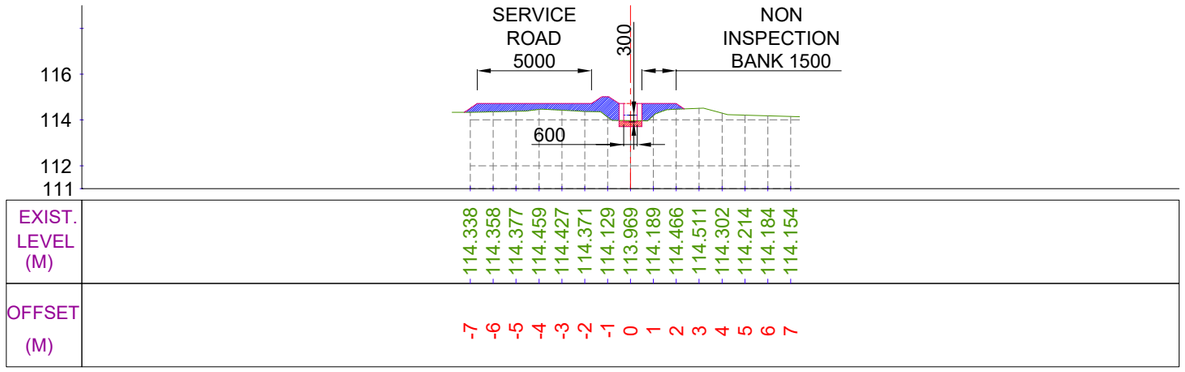

CUTTING AREA (SQ.M) = 0.347
FILLING AREA (SQ.M) = 2.515

CH. (KM):- 2+700
DESIGNED BED LEVEL = 113.945 M




CUTTING AREA (SQ.M) = 0.657
FILLING AREA (SQ.M) = 2.408

CH. (KM):- 2+600
DESIGNED BED LEVEL = 113.975 M




CUTTING AREA (SQ.M) = 0.254
FILLING AREA (SQ.M) = 3.279

CH. (KM):- 2+800
DESIGNED BED LEVEL = 113.915 M

## LEGEND

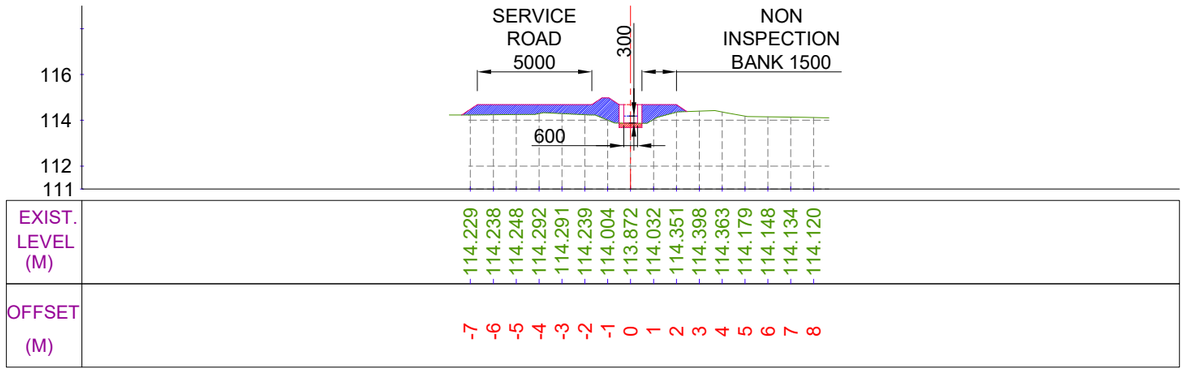
| | | | |
|---|---|---|---|
| CUT AREA | | EXISTING BED LINE | |
| | | F.S.L. | |
| FILL AREA | | DESIGNED BED LINE | |
| | | H.G. LINE | |

Prepared by :-

WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | X SEC OF SOTHIDIH MINOR (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB DY. ) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC- 7 of 8 |

# X SECTION OF SOTHIDIH MINOR




CUTTING AREA (SQ.M) = 0.188

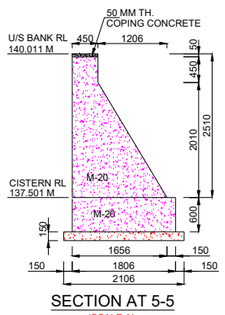
FILLING AREA (SQ.M) = 4.183

CH. (KM):- 2+900

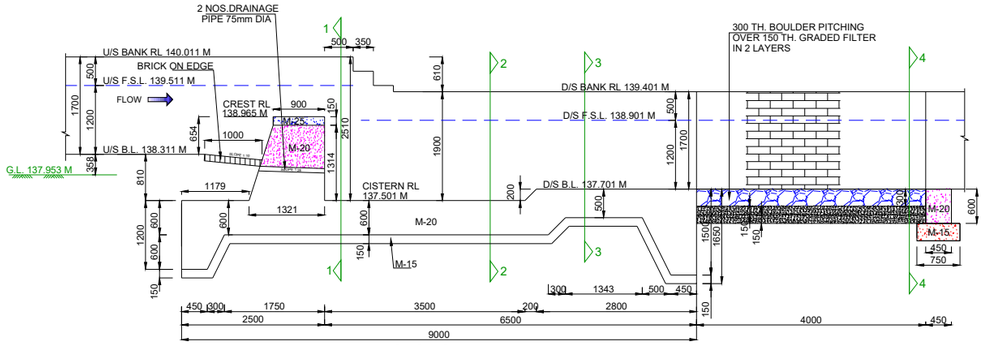
DESIGNED BED LEVEL = 113.884 M

| LEGEND | | | Prepared by :- | | |
|---|---|---|---|---|---|
| | CUT AREA | EXISTING BED LINE | WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | | F.S.L. | | Drawing Title :- | X SEC OF SOTHIDIH MINOR (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB DY. ) |
| | FILL AREA | DESIGNED BED LINE | | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-05/ XSEC- 8 of 8 |
| | | H.G. LINE | | | |

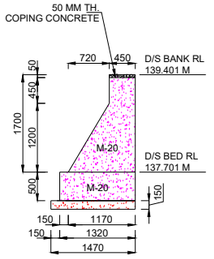
# *DRAWING OF STRUCTURES*




SECTION AT 5-5
(SCALE A)




SECTION A-A
(SCALE A)




SECTION AT 6-6
(SCALE A)

## NOTES:-

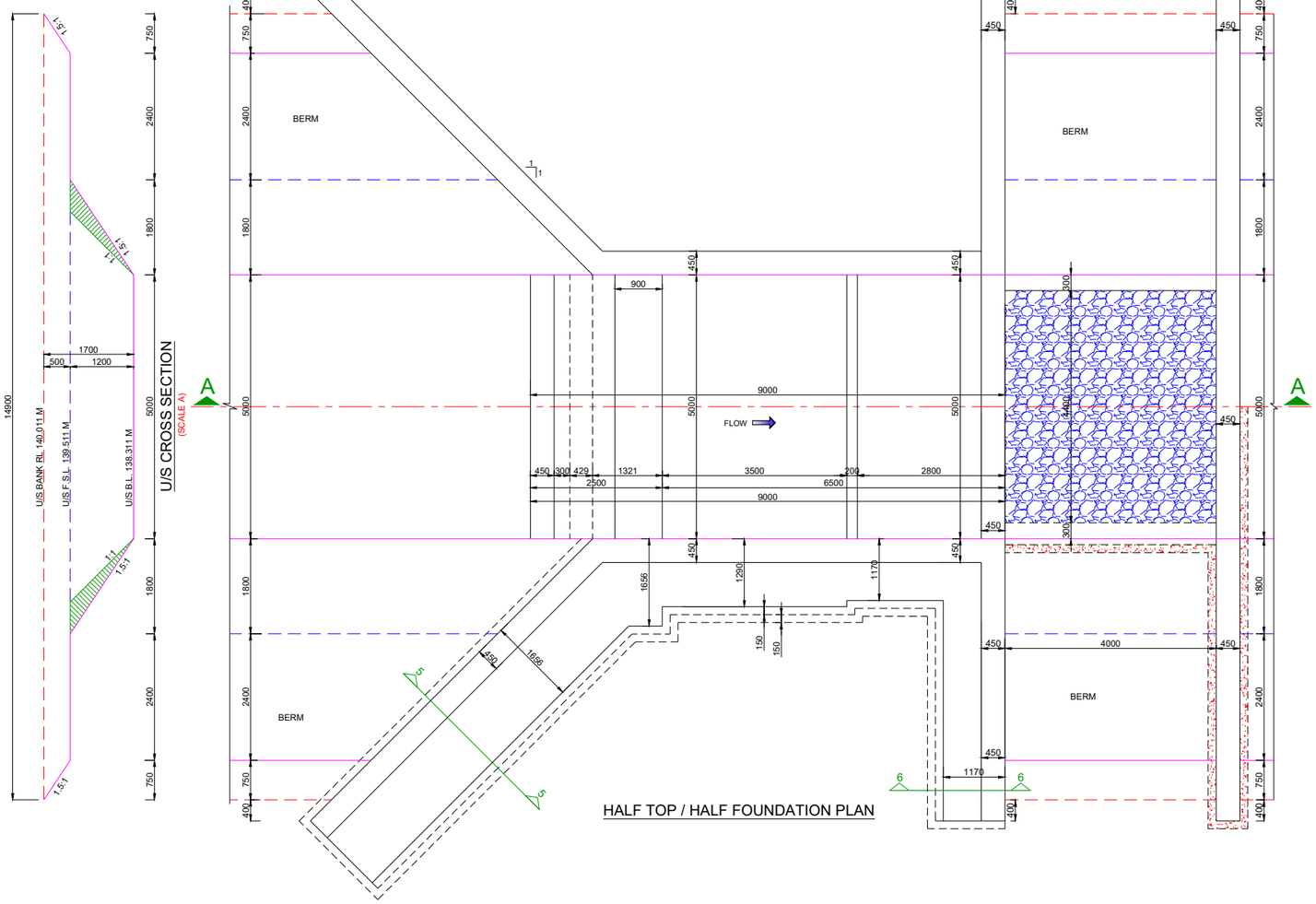
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

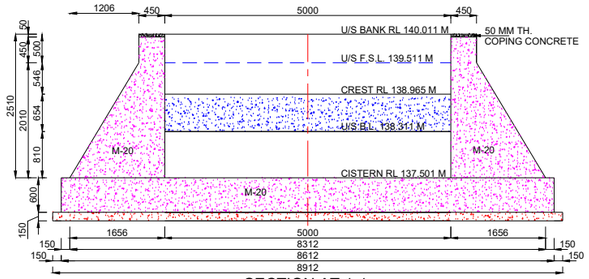
| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

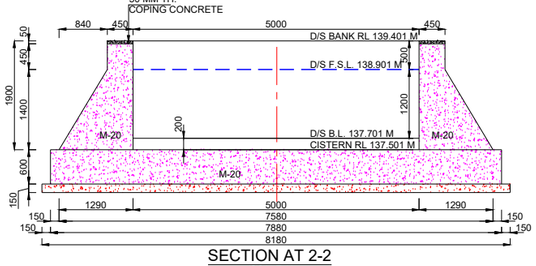
## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 3.650 | 3.650 | CUMEC |
| VERTICAL DROP | 0.610 | 0.610 | METRE |
| FULL SUPPLY DEPTH | 1.200 | 1.200 | METRE |
| BED WIDTH | 5.000 | 5.000 | METRE |
| BED SLOPE | 1 : 4500 | 1 : 4500 | |

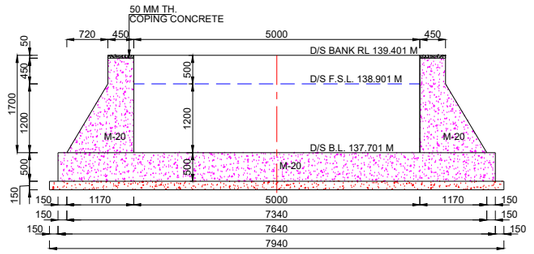


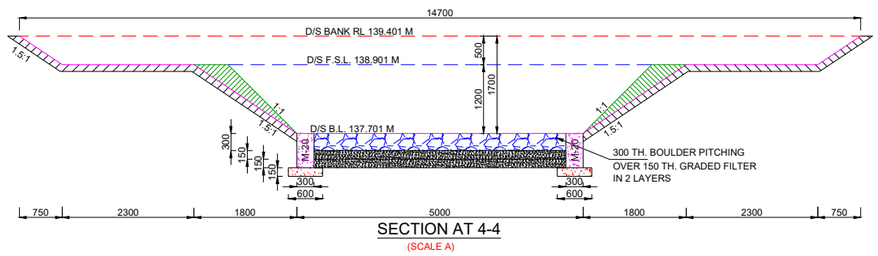

SECTION AT 1-1
(SCALE A)




SECTION AT 2-2
(SCALE A)




SECTION AT 3-3
(SCALE A)

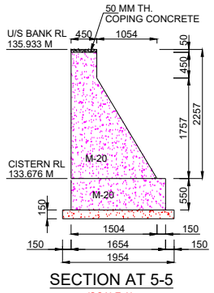


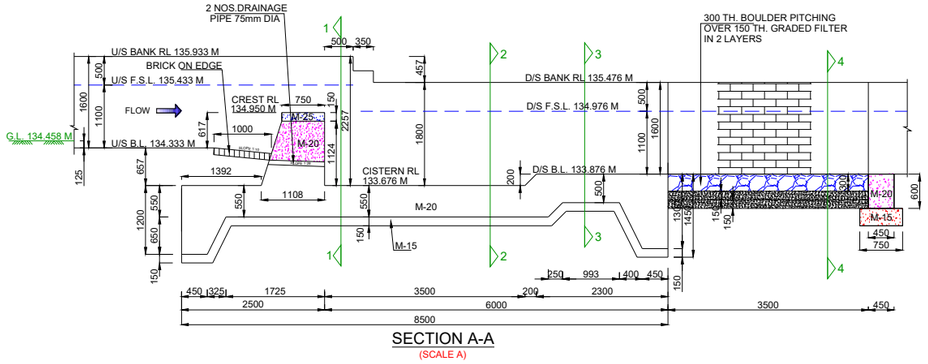

SECTION AT 4-4
(SCALE A)

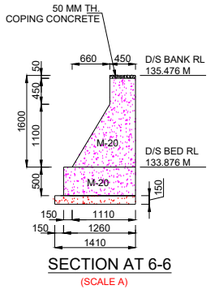
SCALE A:-

1000 0 1000 2000 3000

| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 0.610 M HT. FALL AT KM. 0.075 OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RMC) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-011/ FALL 1 of 1 |
| . | . | . |




## NOTES:-

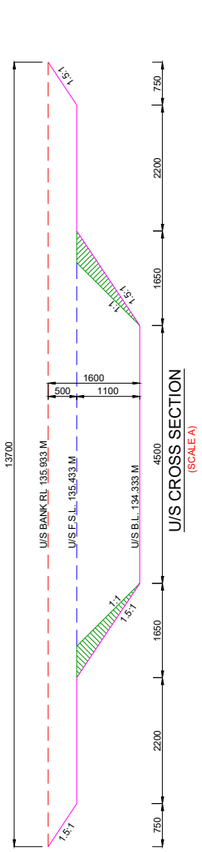
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

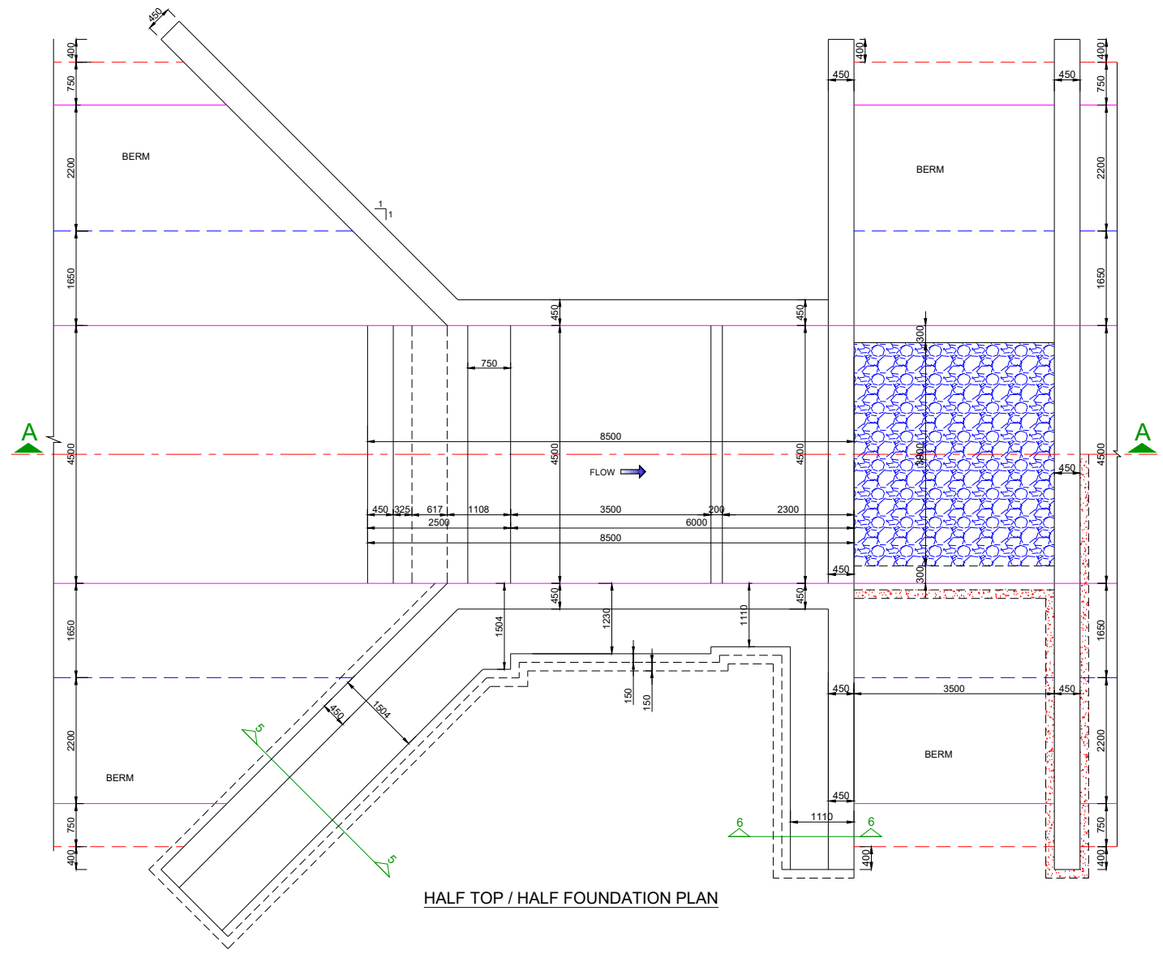
| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

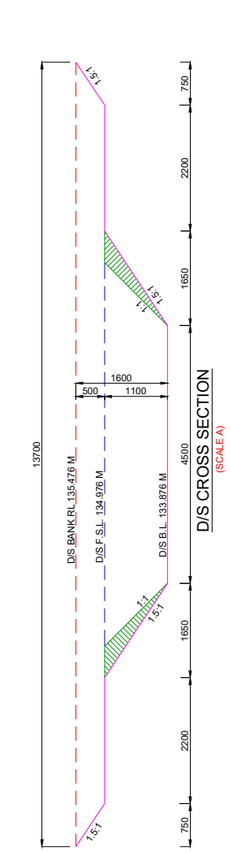
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

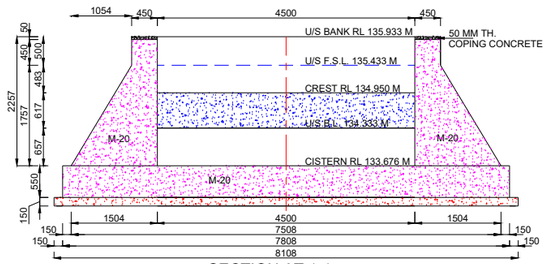
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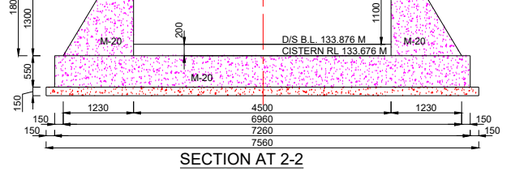
| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 2.200 | 2.200 | CUMEC |
| VERTICAL DROP | 0.457 | 0.457 | METRE |
| FULL SUPPLY DEPTH | 1.100 | 1.100 | METRE |
| BED WIDTH | 4.500 | 4.500 | METRE |
| BED SLOPE | 1 : 4500 | 1 : 4500 | |

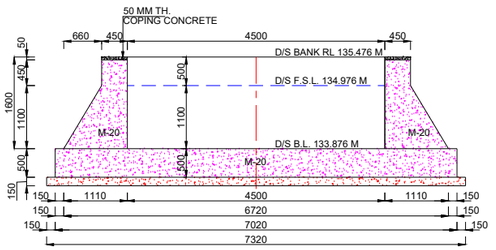


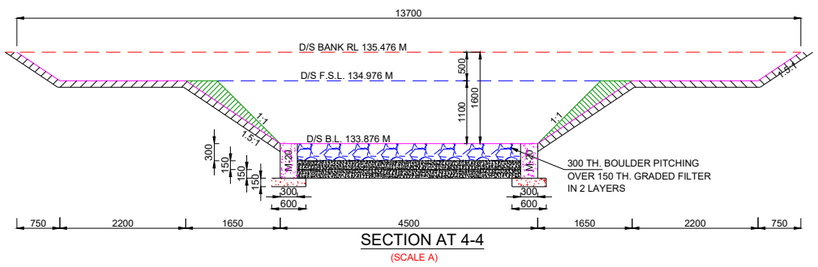



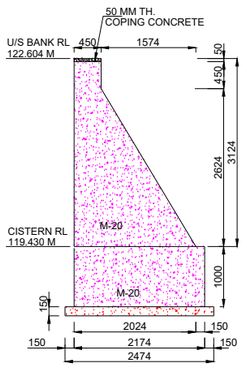



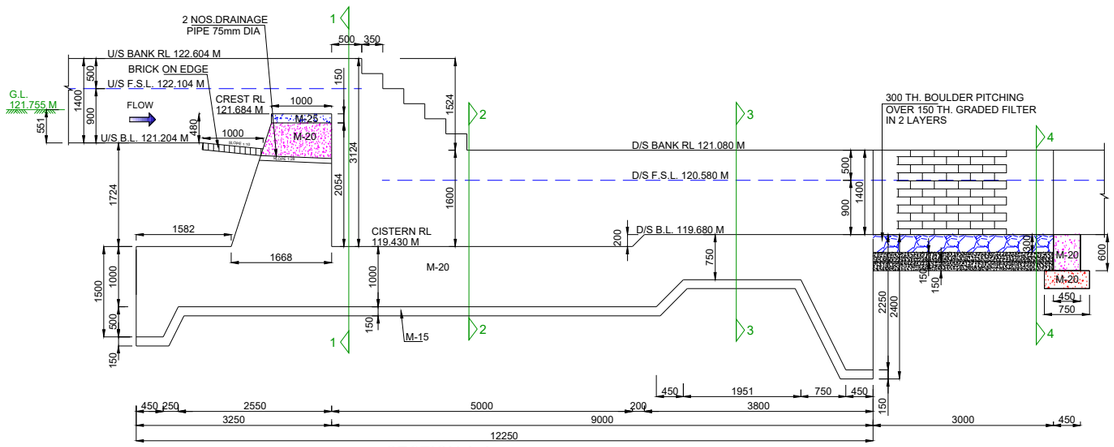

SCALE A:-



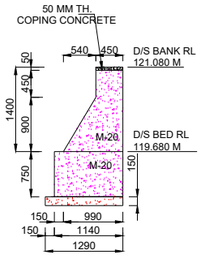

| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 0.457 M HT. FALL AT KM. 2.200 OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RMC) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-011/ FALL 1 of 1 |
| | . | . . |




SECTION AT 5-5
(SCALE A)




SECTION A-A
(SCALE A)




SECTION AT 6-6
(SCALE A)

## NOTES:-

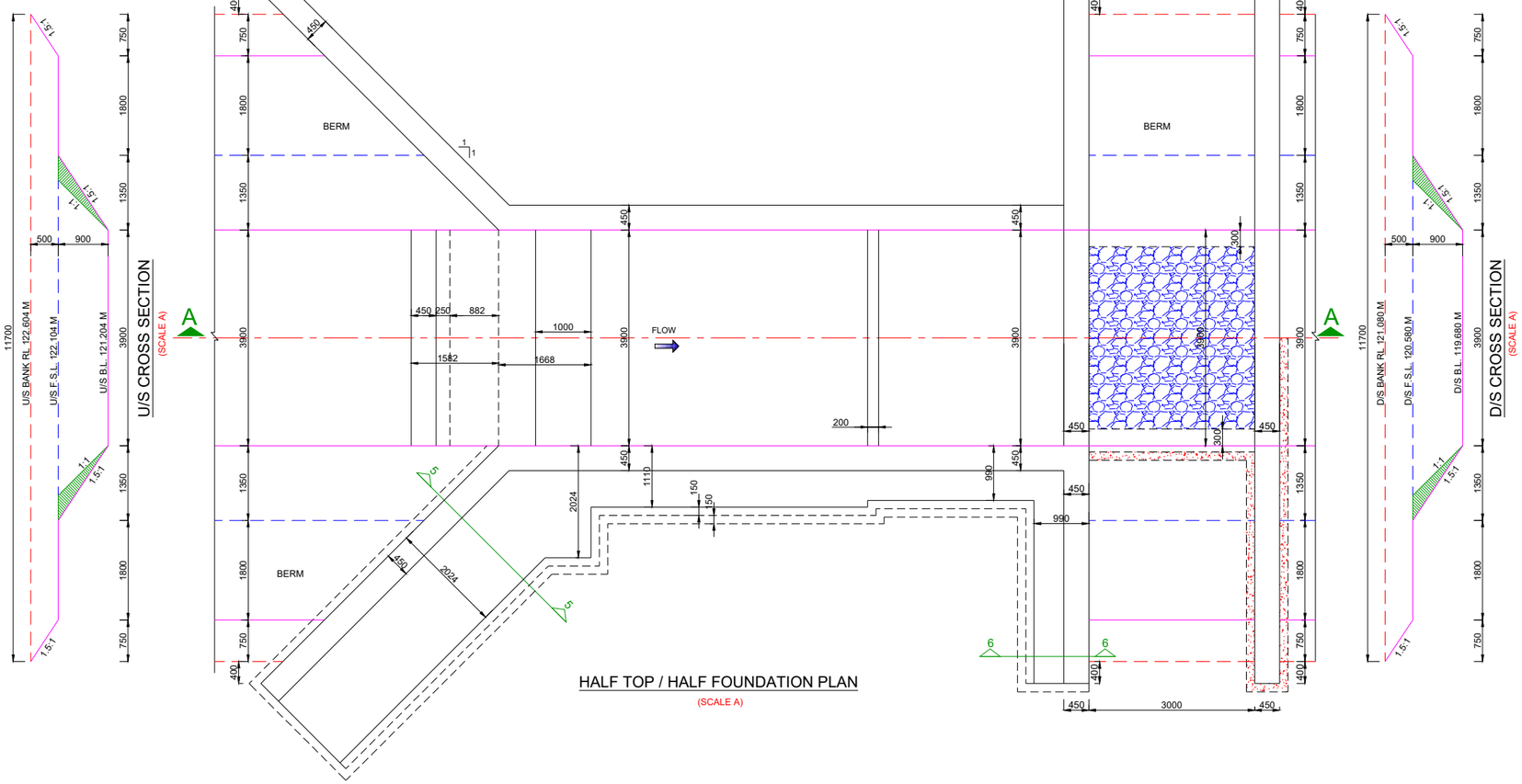
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

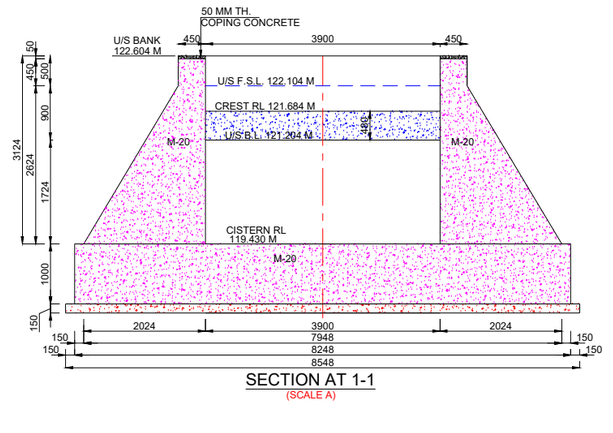
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

## HYDRAULIC:- DATA

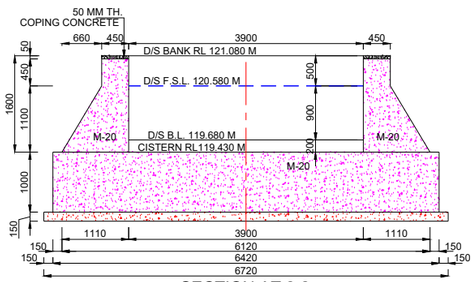
| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 1.780 | 1.780 | CUMEC |
| VERTICAL DROP | 1.524 | 1.524 | METRE |
| FULL SUPPLY DEPTH | 0.900 | 0.900 | METRE |
| BED WIDTH | 3.900 | 3.900 | METRE |
| BED SLOPE | 1 : 4500 | 1 : 4500 | |



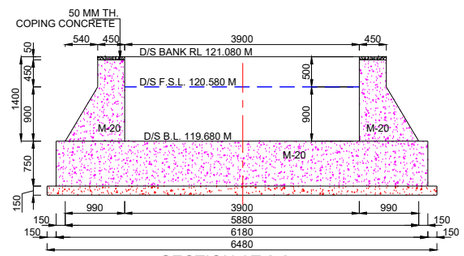

HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



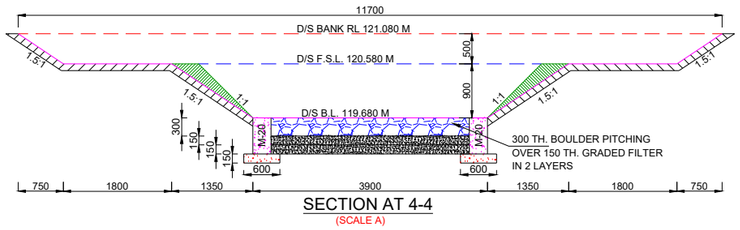

SECTION AT 1-1
(SCALE A)




SECTION AT 2-2
(SCALE A)



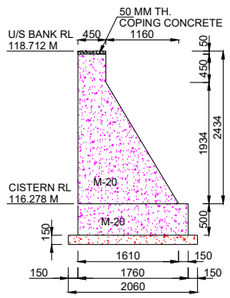

SECTION AT 3-3
(SCALE A)




SECTION AT 4-4
(SCALE A)

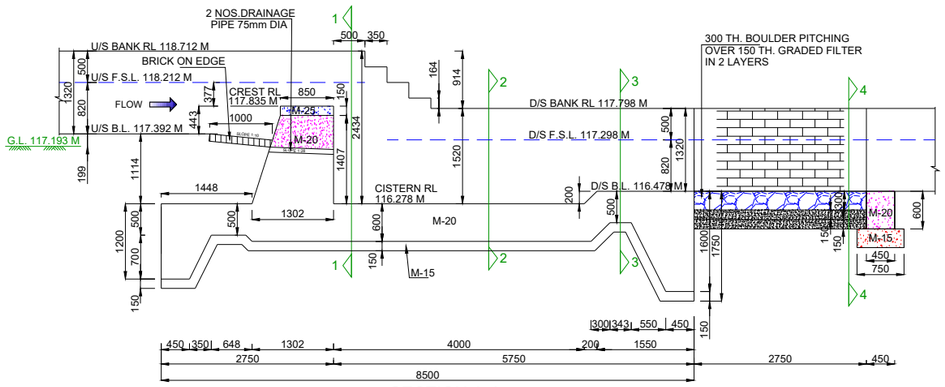
SCALE A:-

| Prepared by :- | | |
|---|---|---|
| WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 1.524 M HT. FALL AT KM. 9.150 OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RMC) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-011/ FALL 1 of 1 |
| | . | . . |



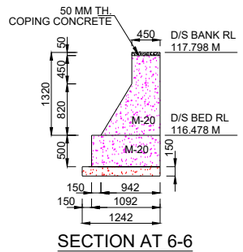

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

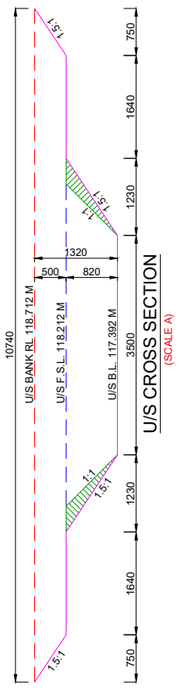
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3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

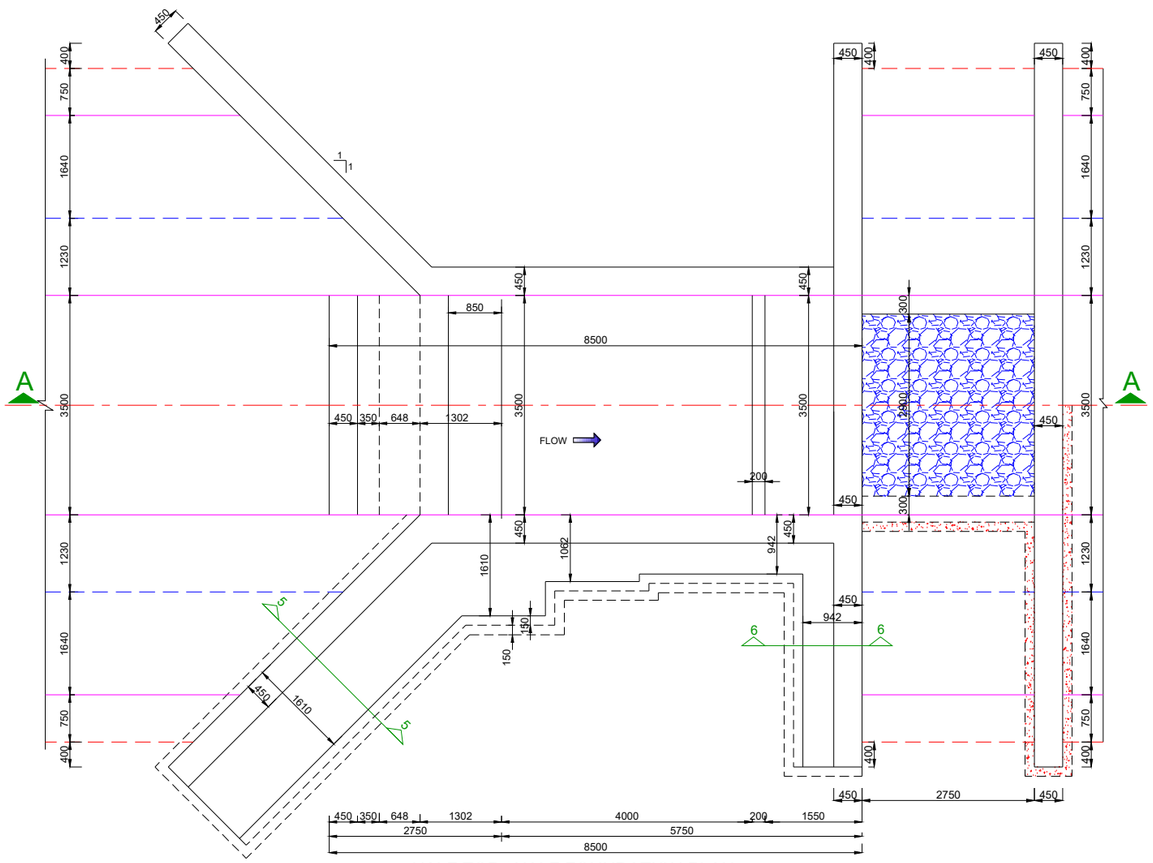
## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 1.370 | 1.370 | CUMEC |
| VERTICAL DROP | 0.914 | 0.914 | METRE |
| FULL SUPPLY DEPTH | 0.820 | 0.820 | METRE |
| BED WIDTH | 3.500 | 3.500 | METRE |
| BED SLOPE | 1 : 4500 | 1 : 4500 | |



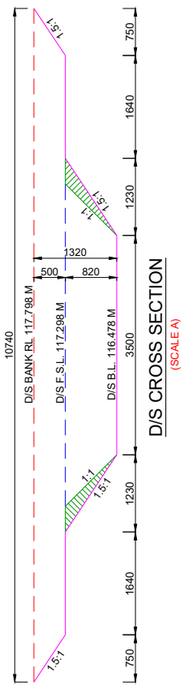

U/S CROSS SECTION

(SCALE A)



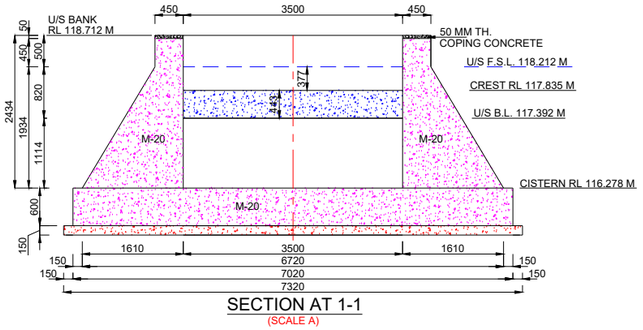

HALF TOP / HALF FOUNDATION PLAN

(SCALE A)



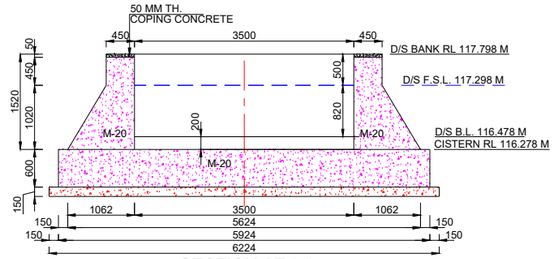

D/S CROSS SECTION

(SCALE A)



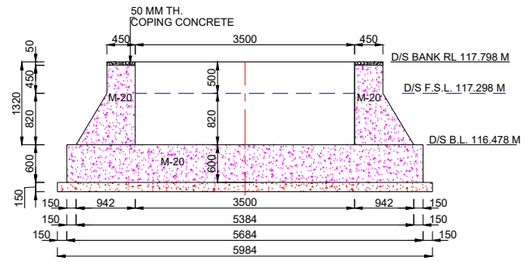

SECTION AT 1-1

(SCALE A)



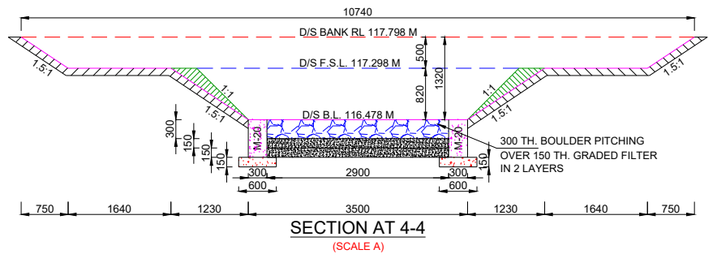

SECTION AT 2-2

(SCALE A)




SECTION AT 3-3

(SCALE A)



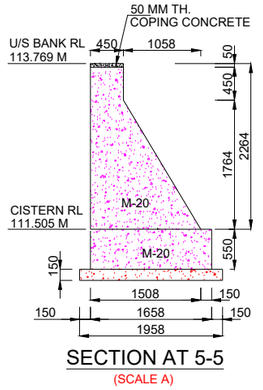

SECTION AT 4-4

(SCALE A)

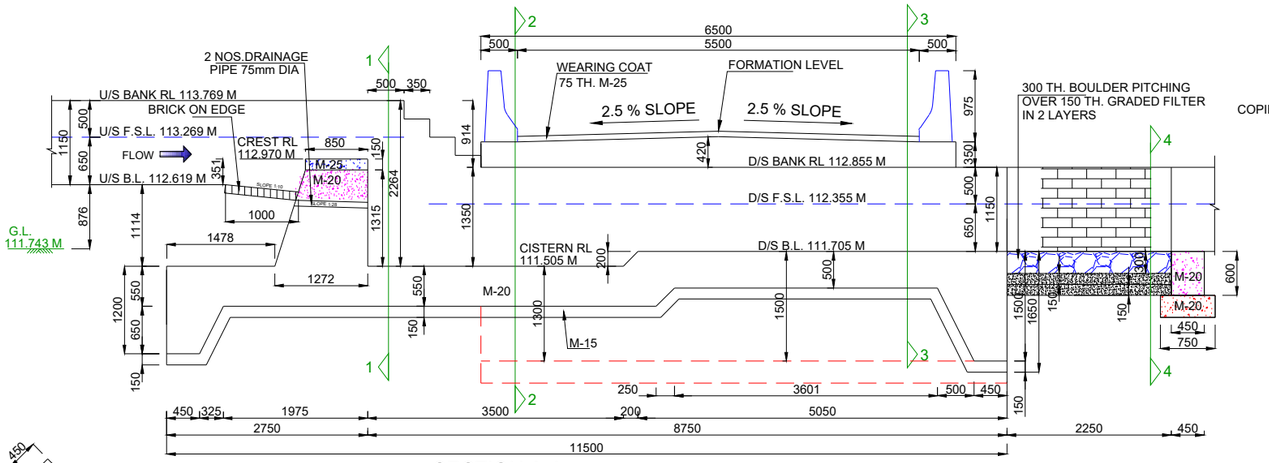
SCALE A:-

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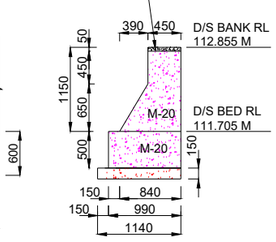
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|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 0.914 M HT. FALL AT KM. 11.900 OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RMC) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ FALL 1 of 1 |
| . | . | . |




SECTION AT 5-5
(SCALE A)




SECTION A-A
(SCALE A)




SECTION AT 6-6
(SCALE A)

## NOTES:-

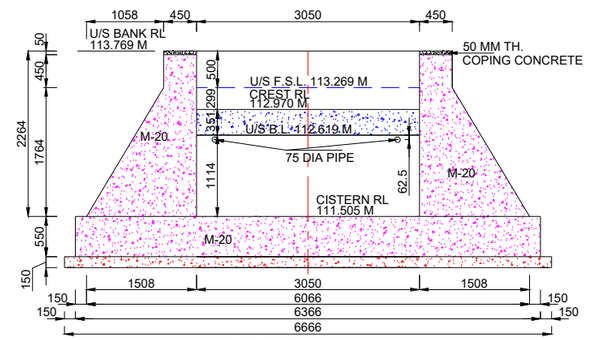
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3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

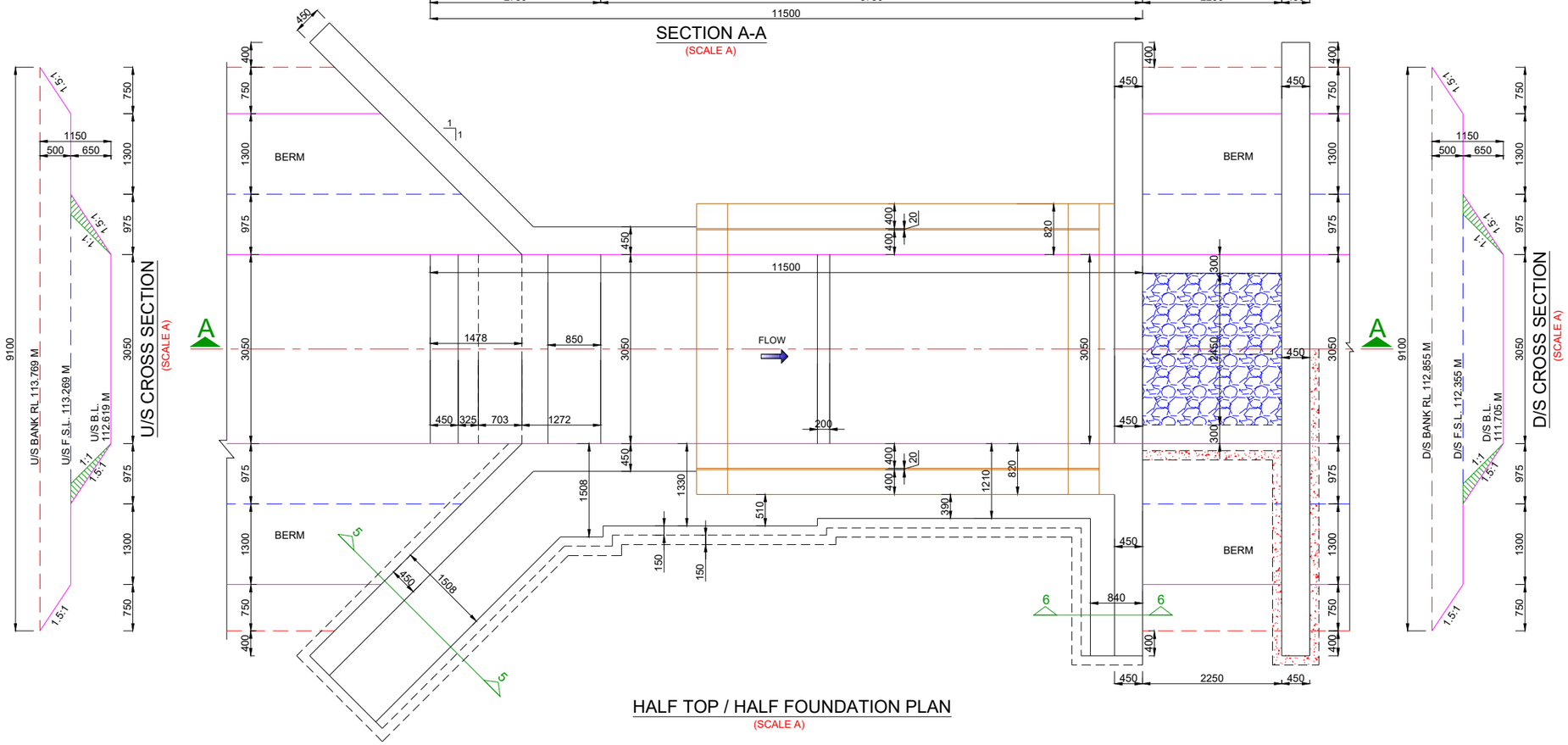
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

## HYDRAULIC:- DATA

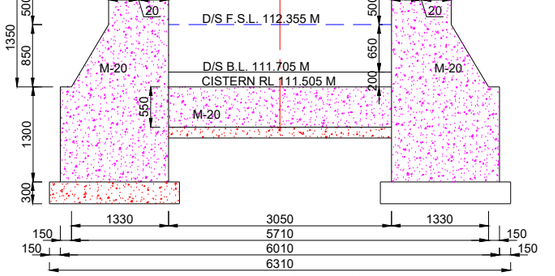
| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.810 | 0.810 | CUMEC |
| VERTICAL DROP | 0.914 | 0.914 | METRE |
| FULL SUPPLY DEPTH | 0.650 | 0.650 | METRE |
| BED WIDTH | 3.050 | 3.050 | METRE |
| BED SLOPE | 1 : 4500 | 1 : 4500 | |



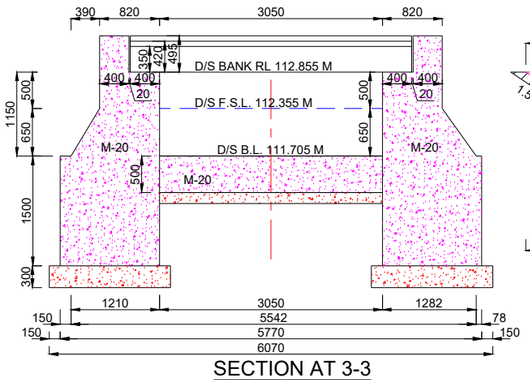

SECTION AT 1-1
(SCALE A)



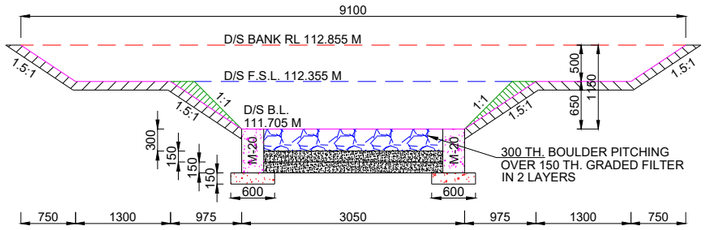

(SCALE A)




SECTION AT 2-2
(SCALE A)




SECTION AT 3-3
(SCALE A)

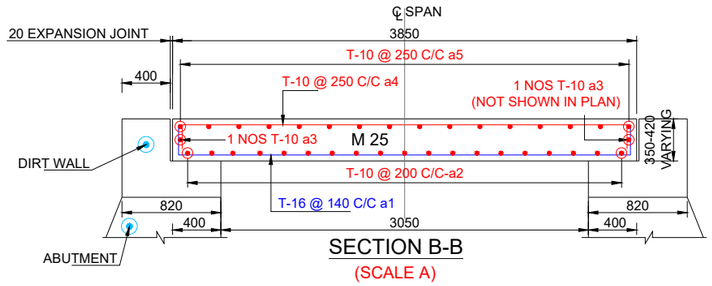



SECTION AT 4-4
(SCALE A)

SCALE A:-

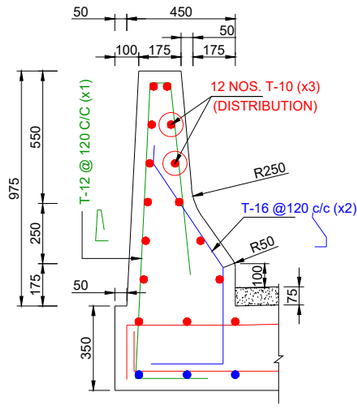
1000 0 1000 2000 3000

| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 0.914 M HT. FALL AT KM. 15.550 OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RMC) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-011/ FALL 1 of 1 |
| | . | . . |



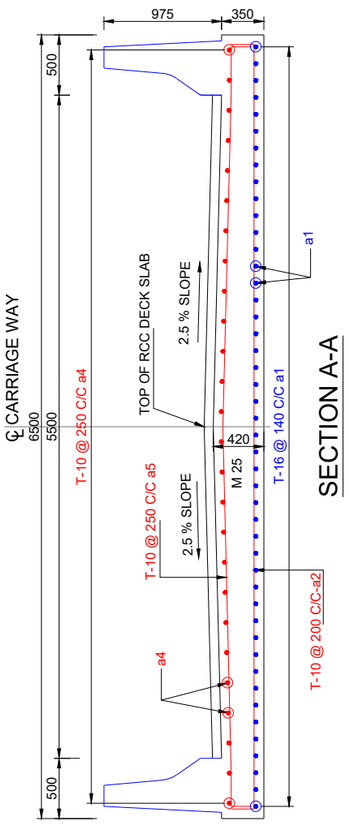

SECTION B-B

(SCALE A)

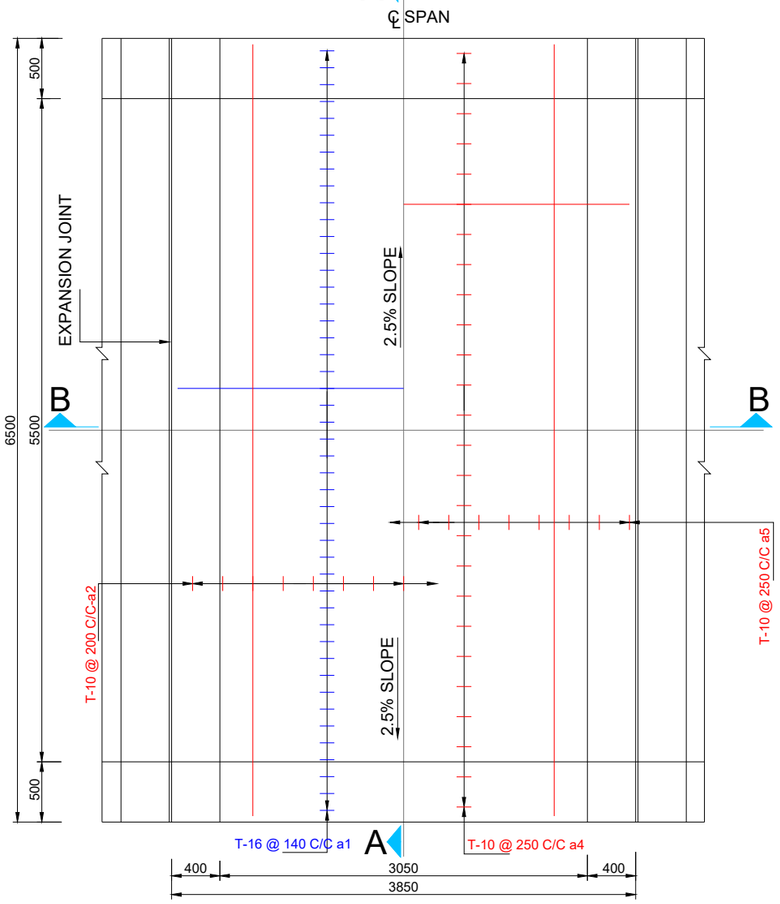



REINF. DETAILS OF CRASH BARRIER IN MAIN SLAB

(SCALE B)




SECTION A-A




BOTTOM REINFORCEMENT TOP REINFORCEMENT

PLAN SHOWING REINFORCEMENT DETAILS OF DECK SLAB

(SCALE A)

## NOTES:-

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS:456 - 2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,
   BRIDGE SLAB & PARAPET M-25
4. ALL REINFORCEMENT BARS SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (Fe 500) COMFORMING I.S. 1786.
5. MIN. CLEAR COVER TO ANY REINF. INCLUDING STIRRUPS SHALL BE 40 MM OR UNLESS OTHERWISE SPECIFIED.
6. THE COVER INDICATED IN THIS DRAWINGS IS CLEAR COVER TO MAIN REINFORCEMENT BARS NEAREST TO THE CONCRETE SURFACE INCLUDING STIRRUPS AND BINDERS UNLESS MENTIONED OTHERWISE.
7. BENDING OF REINF. BARS SHALL CONFORM TO I.S. 2502.
8. REINF. BARS SHALL BE CUT AND ADJUSTED TO ACCOMODATE DRAINAGE SPOUT.
9. 75 MM THK. WEARING COAT IN M-25 CC SHALL BE PROVIDED.
10. APPROACH SLAB & APPROACH SLAB SUPPORT SHALL BE DECIDED BY FIELD ENGINEERS ACCORDING TO THE SITE CONDITIONS.
11. TARFELT BEARING SHALL BE PROVIDED UNDER SLAB AT SUPPORT.
12. THE REINFORCEMENT OF CRASH BARRIER SHALL BE INCORPORATED BEFORE CASTING OF THE DECK SLAB.
13. 8 MM DIA BAR @ 200 C/C IN BOTH DIRECTION SHALL BE PROVIDED IN WEARING COAT AT MIDDLE DEPTH.
14. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF SMALLER BAR.
15. THE DEVELOPMENT LENGTH OF BARS ARE GIVEN BELOW:

| DEVELOPMENT LENGTH FULLY STRESSED DEFORMED BARS (fy=500N/mm²) (IS 456 CLAUSE 26.2.1) | | | | | | | |
|---|---|---|---|---|---|---|---|
| TENSION BARS GRADE OF CONCRETE | | | | COMPRESSION BARS GRADE OF CONCRETE | | | |
| M15 | M20 | M25 | M30 | M15 | M20 | M25 | M30 |
| 68.00 | 56.60 | 48.50 | 45.30 | 54.40 | 45.30 | 38.80 | 36.30 |
| 81.60 | 68.00 | 58.30 | 54.40 | 65.30 | 54.40 | 46.60 | 43.50 |
| 108.80 | 90.60 | 77.70 | 72.50 | 87.00 | 87.00 | 62.10 | 58.00 |
| 135.90 | 113.30 | 97.10 | 90.60 | 108.80 | 108.80 | 77.70 | 72.50 |
| 169.90 | 141.60 | 121.40 | 113.30 | 135.90 | 135.90 | 97.10 | 90.60 |
| 217.50 | 181.30 | 155.40 | 145.00 | 174.00 | 174.00 | 124.30 | 116.00 |

1. THE DEVELOPMENT LENGTHS GIVEN ABOVE ARE FOR A STRESS OF 0.87 fy IN THE BAR
2. THE DEVELOPMENT LENGTH INCLUDES ANCHORAGE VALUES OF HOOKS IN TENSION REINFORCEMENT.

16. LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR IS POSSIBLE IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOW WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50 % ONLY (IRC:112 - 2011) CLAUSE: 15.2.5.1)
    LAP LENGTH = $\alpha$1. lbnet
    WHERE, $\alpha$1 = 1.0 for p%≤25%
    $\alpha$1 = 1.15 for 25%≤p%≤33%
    $\alpha$1 = 1.4 for 33%≤p%≤50%
17. THE STRAIGHT LENGTH OF THE LAP SHOULD NOT BE LESS THAN 15Ø OR 200 MM (WHICH EVER IS MORE)
18. THE LAP LENGTH MUST BE AT LEAST EQUAL TO DEVELOPMENT LENGTH IN NO CASE, THE LAP LENGTH SHOULD BE LESS THAN 30Ø FOR FLEXURAL AND DIRECT TENSION AND 24Ø FOR COMPRESSION.
19. LAP SPLICES SHALL BE CONSIDERED AS STAGGERED IF THE C/C DISTANCE OF SPLICES IS NOT LESS THAN 1.3 TIMES THE LAP LENGTH CALCULATED.
20. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF SMALLER BAR.

SCALE A:- 400 0 400 800 1200

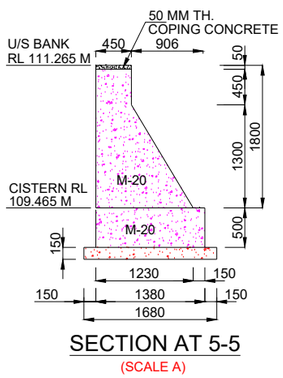
SCALE B:- 200 0 200 400 600

## BAR BENDING SCHEDULE

| S. No. | Type of bars | Shape of bars (not to scale (Dimensions are in millimetres) | Dia of Bars (mm) | Spacing (mm) | Nos. of Bars |
|---|---|---|---|---|---|
| SLAB PER SPAN | | | | | |
| 1 | a1 | 250, R=80, 3750, 250 | 16 | 140 | 45 |
| 2 | a2 | 250, R=50, 6400, 250 | 10 | 200 | 19 |
| 3 | a3 | 6400 | 10 | - | 2 |
| 4 | a4 | 250, 3750, R=40, 250 | 10 | 250 | 26 |
| 5 | a5 | 250, 450, 2750, 2750, 450, 250 | 10 | 250 | 16 |

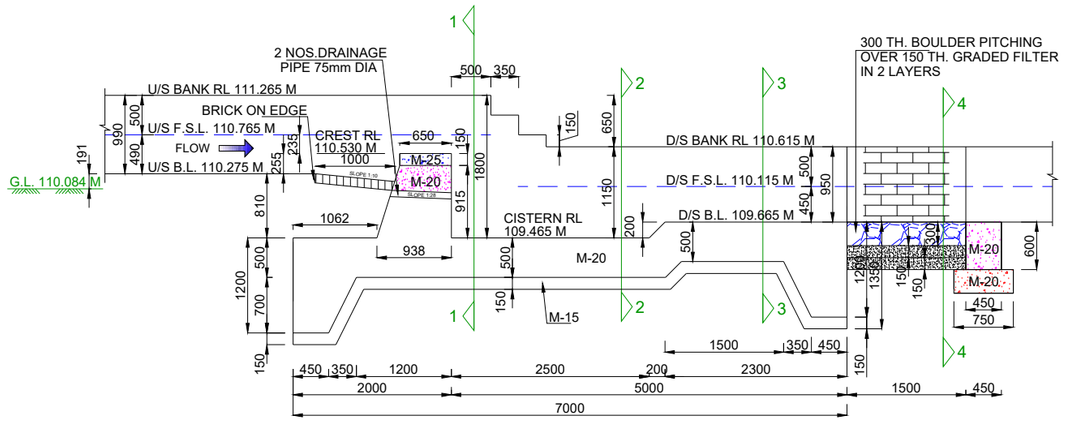
| CRASH BARRIER | | | | | |
|---|---|---|---|---|---|
| 1 | x1 | 75, 1226, 950, 300 | 12 | 120 | 32X2 |
| 2 | x2 | 75, 540, 400, 300 | 16 | 120 | 32X2 |
| 3 | x3 | 3750 | 12 | - | 10X2 |

| | |
|---|---|
| Prepared by :- | WAPCOS LTD. |
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | REINFORCEMENT DETAILS OF SLAB FOR FALL CUM BRG. AT KM. 15.550 OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RMC) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-011/ FALL 2 of 2 |



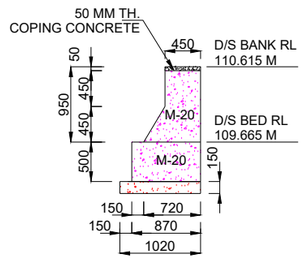

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

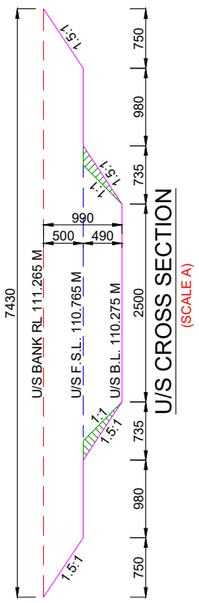
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

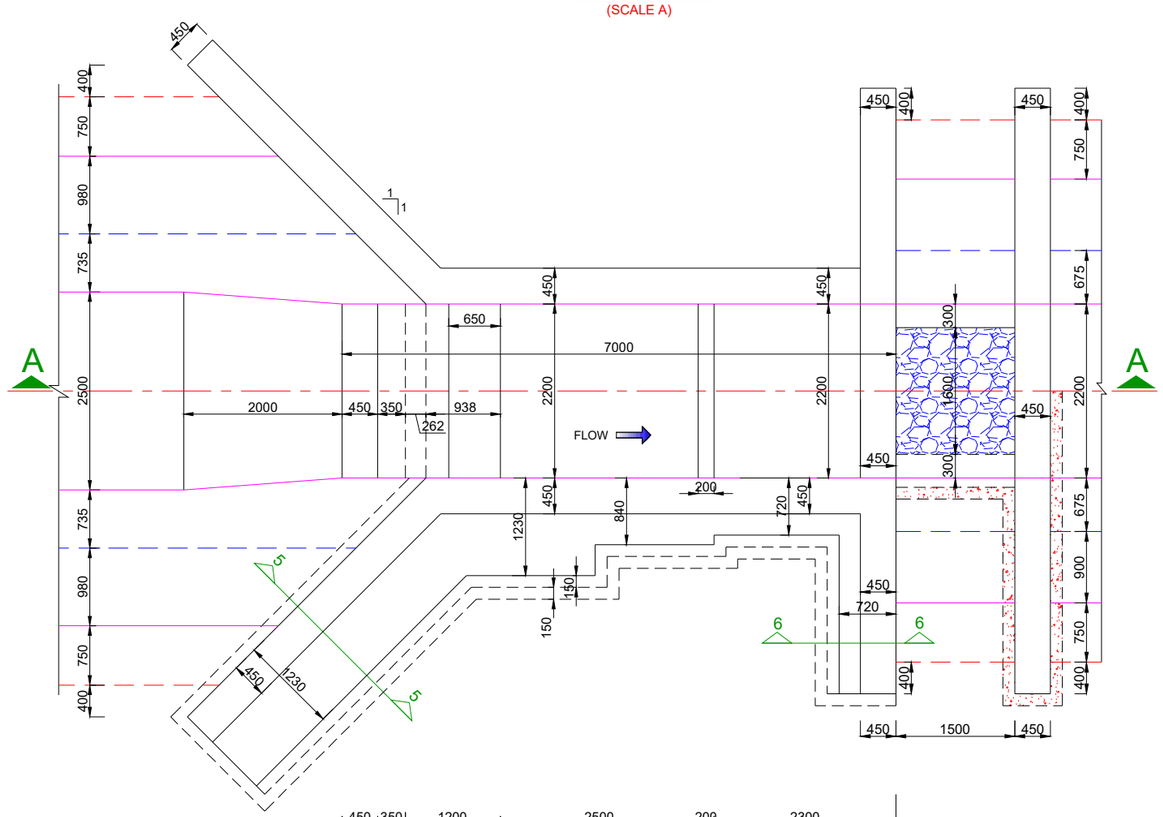
## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.420 | 0.420 | CUMEC |
| VERTICAL DROP | 0.610 | 0.610 | METRE |
| FULL SUPPLY DEPTH | 0.490 | 0.450 | METRE |
| BED WIDTH | 2.500 | 2.200 | METRE |
| BED SLOPE | 1 : 4400 | 1 : 4400 | |



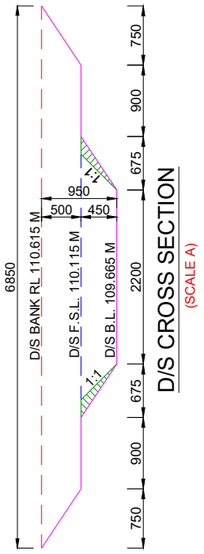

U/S CROSS SECTION

(SCALE A)



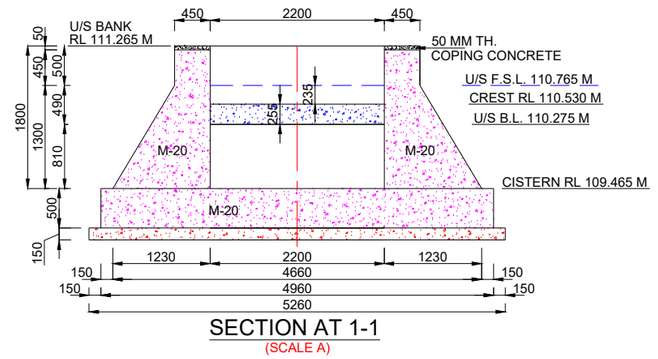

HALF TOP / HALF FOUNDATION PLAN

(SCALE A)



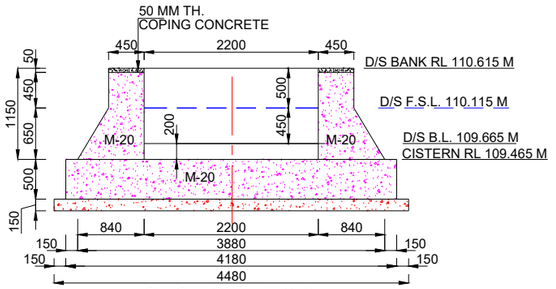

D/S CROSS SECTION

(SCALE A)



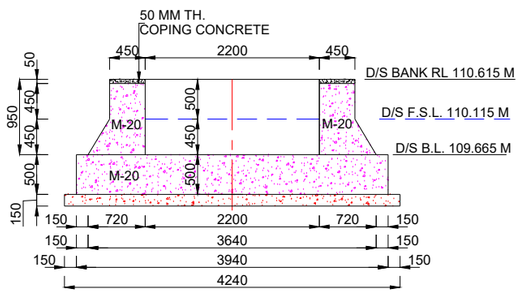

SECTION AT 1-1

(SCALE A)



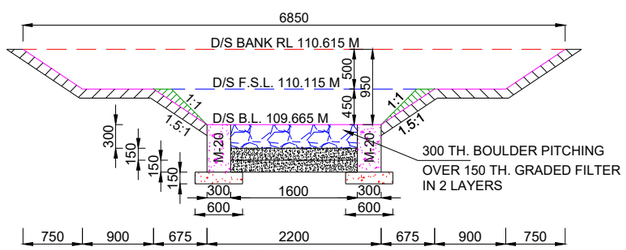

SECTION AT 2-2

(SCALE A)




SECTION AT 3-3

(SCALE A)




SECTION AT 4-4

(SCALE A)

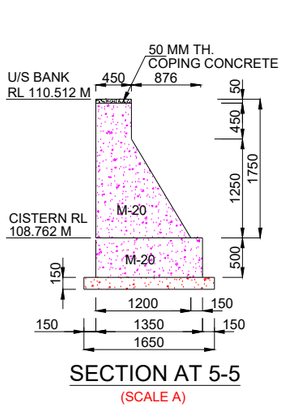
SCALE A:-

1000 0 1000 2000 3000

Prepared by :-

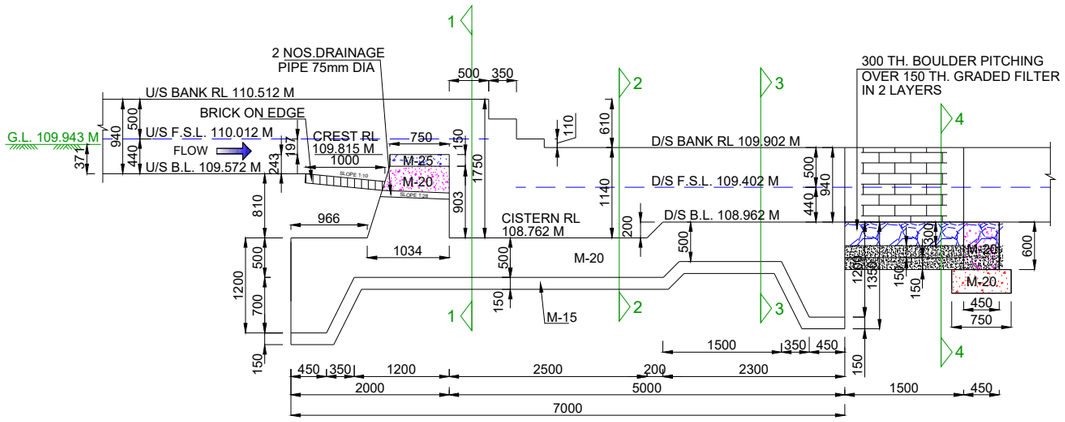
WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | SHARDA TYPE 0.610 M HT. FALL AT KM. 17.875 OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RMC) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ FALL 1 of 1 |



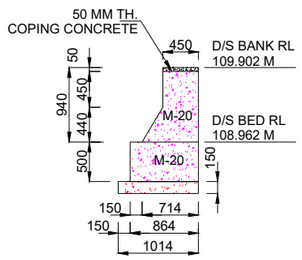

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

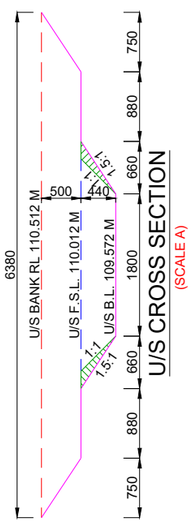
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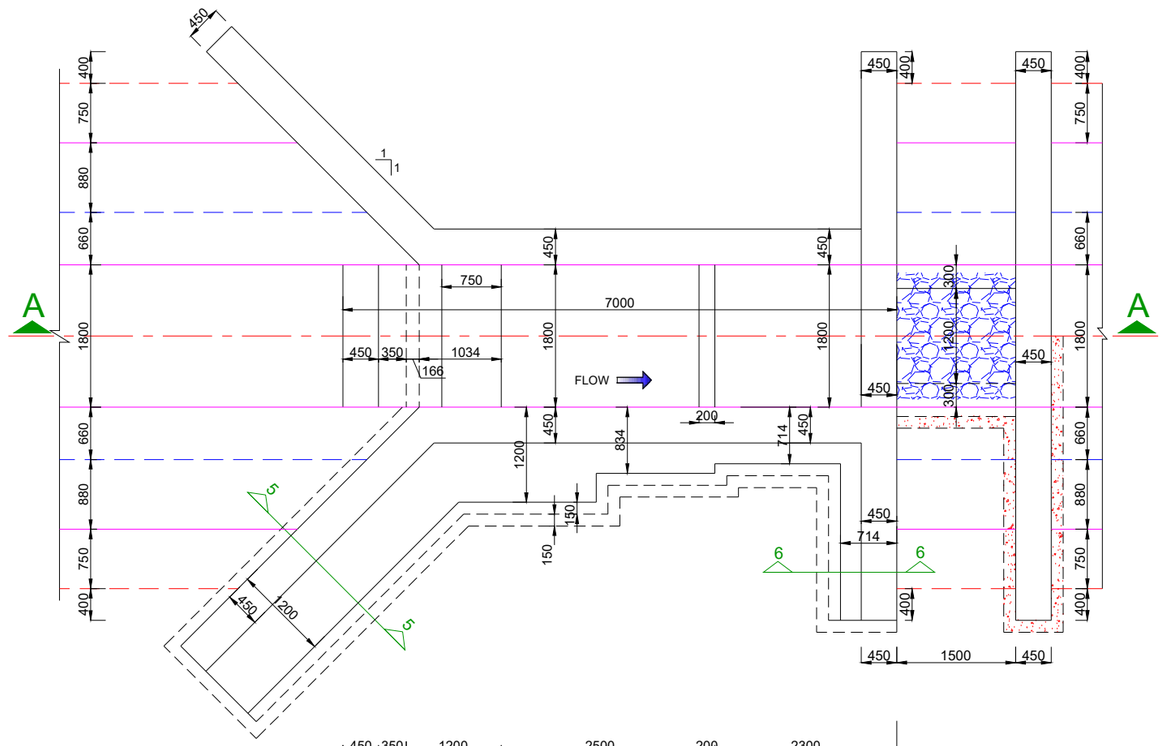
| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

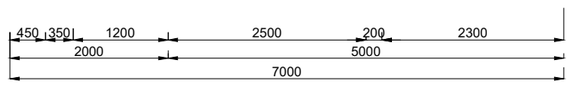
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.250 | 0.250 | CUMEC |
| VERTICAL DROP | 0.610 | 0.610 | METRE |
| FULL SUPPLY DEPTH | 0.440 | 0.440 | METRE |
| BED WIDTH | 1.800 | 1.800 | METRE |
| BED SLOPE | 1 : 4300 | 1 : 4300 | |

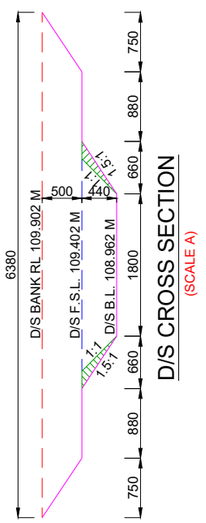


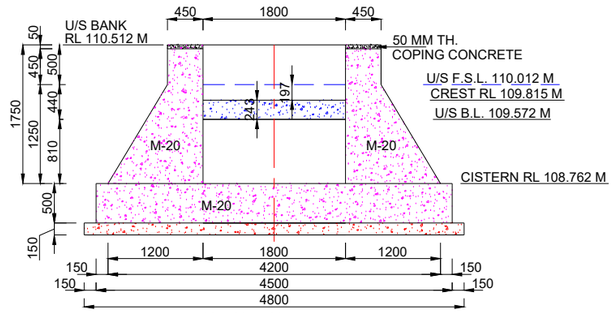




HALF TOP / HALF FOUNDATION PLAN

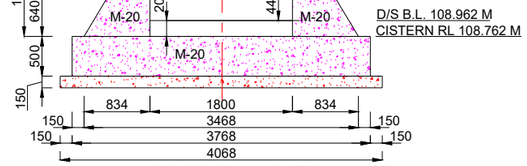
(SCALE A)



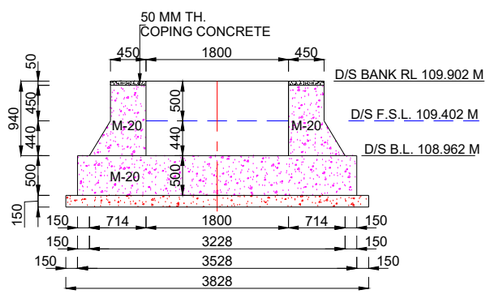

SECTION AT 1-1

(SCALE A)



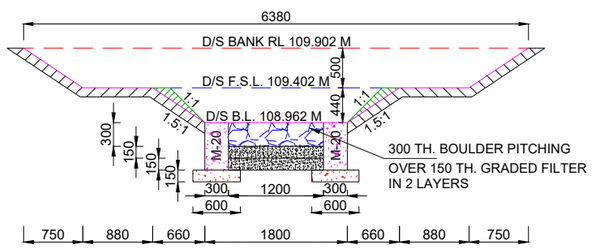

SECTION AT 2-2

(SCALE A)




SECTION AT 3-3

(SCALE A)



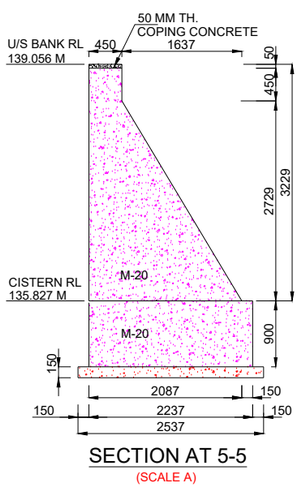

SECTION AT 4-4

(SCALE A)

SCALE A:-

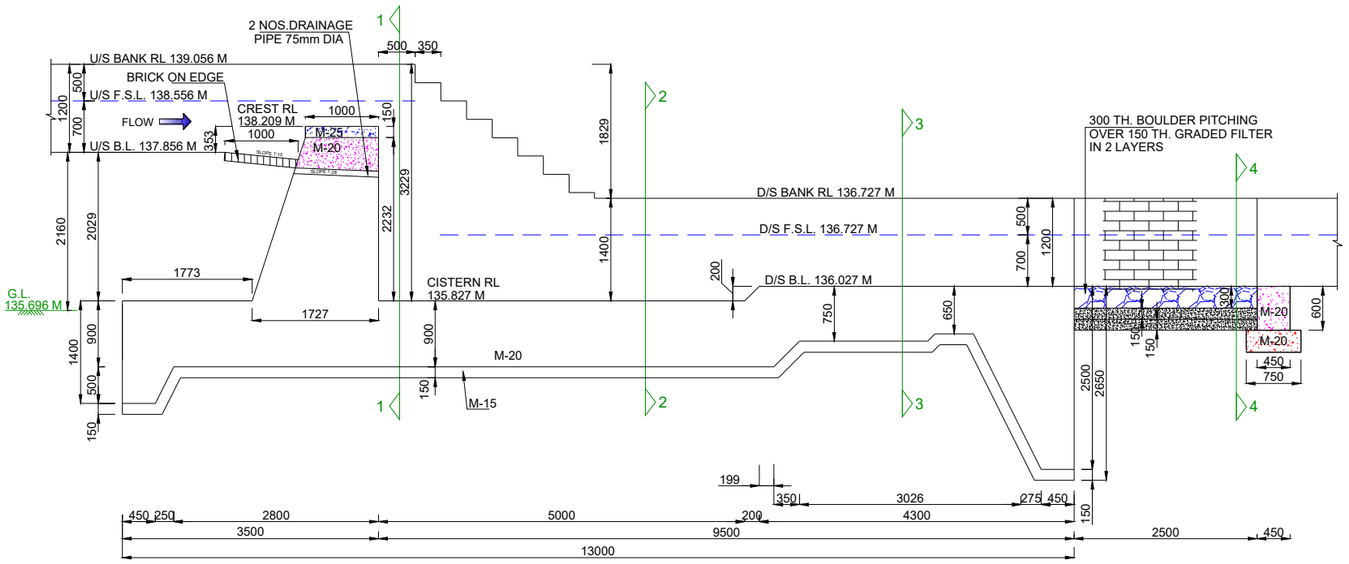
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| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 0.610 M HT. FALL AT KM. 18.280 OF MAHUARY SUB DY. (OFFTAKE FROM RD - 47+487 KM. (L), NORTH KOEL RMC) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11/ FALL 1 of 1 |



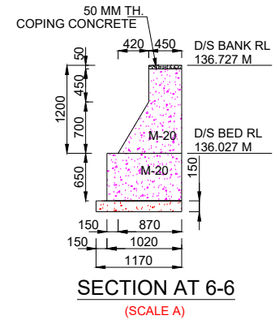

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

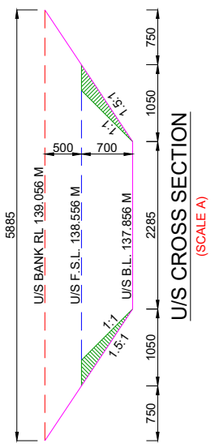
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
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3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

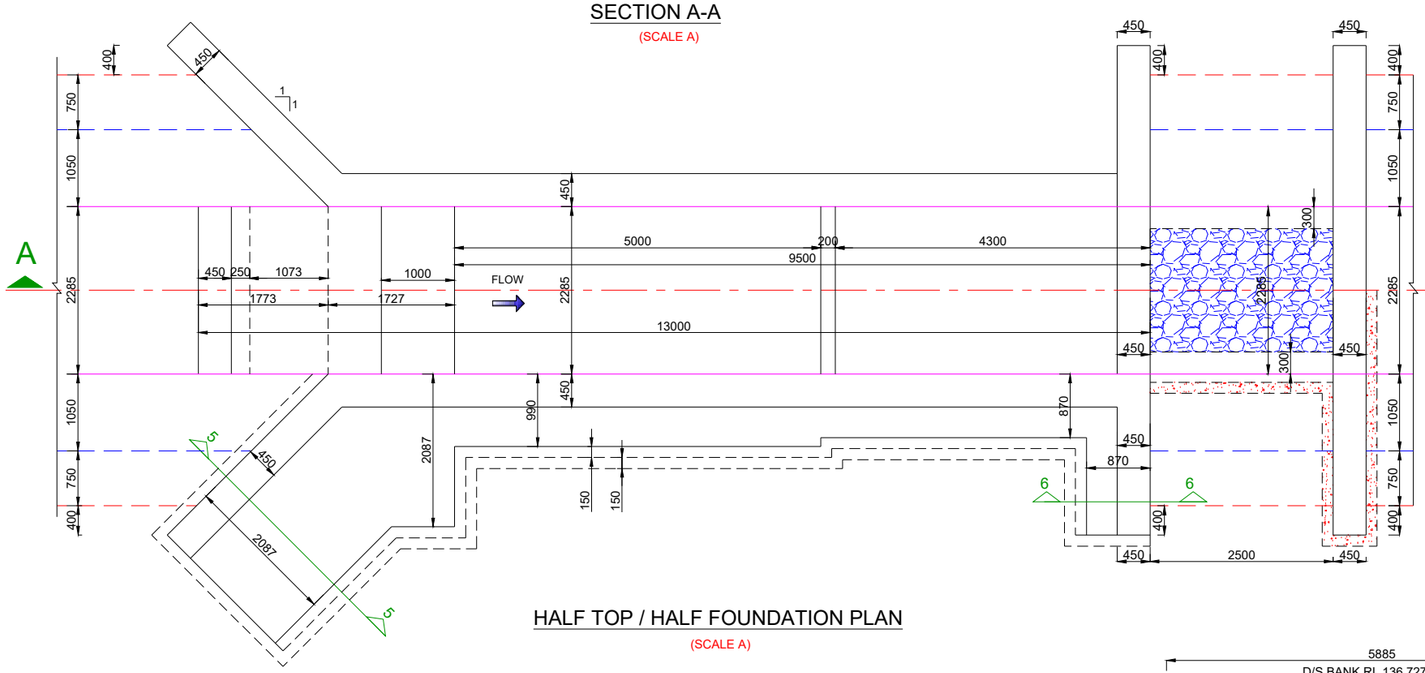
## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.760 | 0.760 | CUMEC |
| VERTICAL DROP | 0.457 | 0.457 | METRE |
| FULL SUPPLY DEPTH | 0.700 | 0.700 | METRE |
| BED WIDTH | 2.285 | 2.285 | METRE |
| BED SLOPE | 1 : 3500 | 1 : 3500 | |



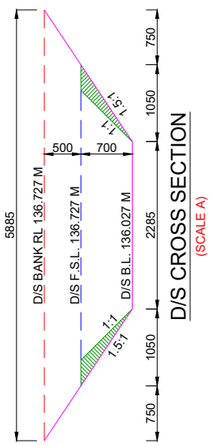

U/S CROSS SECTION

(SCALE A)



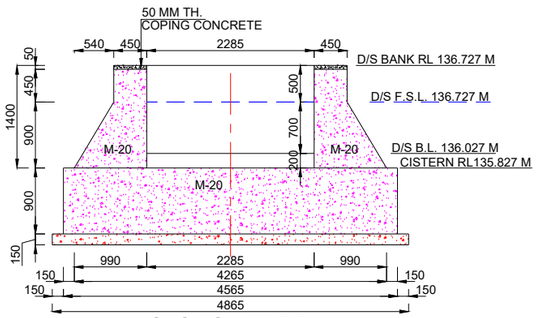

HALF TOP / HALF FOUNDATION PLAN

(SCALE A)



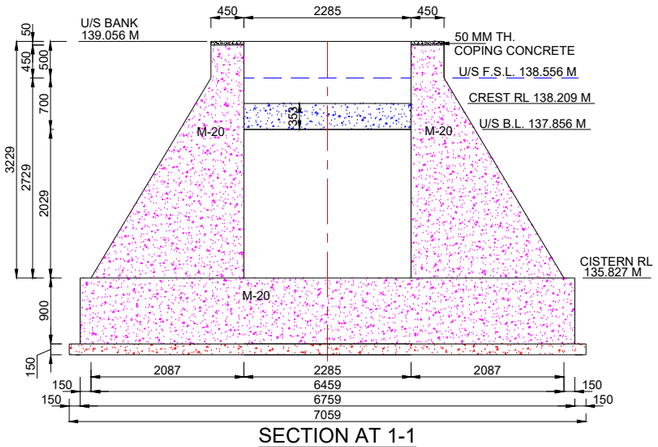

D/S CROSS SECTION

(SCALE A)



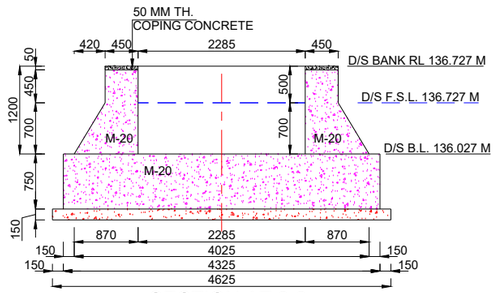

SECTION AT 2-2

(SCALE A)



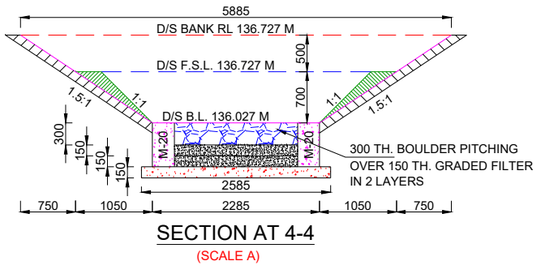

SECTION AT 1-1

(SCALE A)




SECTION AT 3-3

(SCALE A)



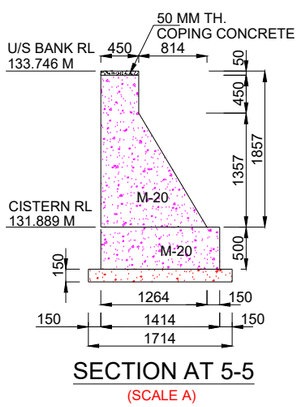

SECTION AT 4-4

(SCALE A)

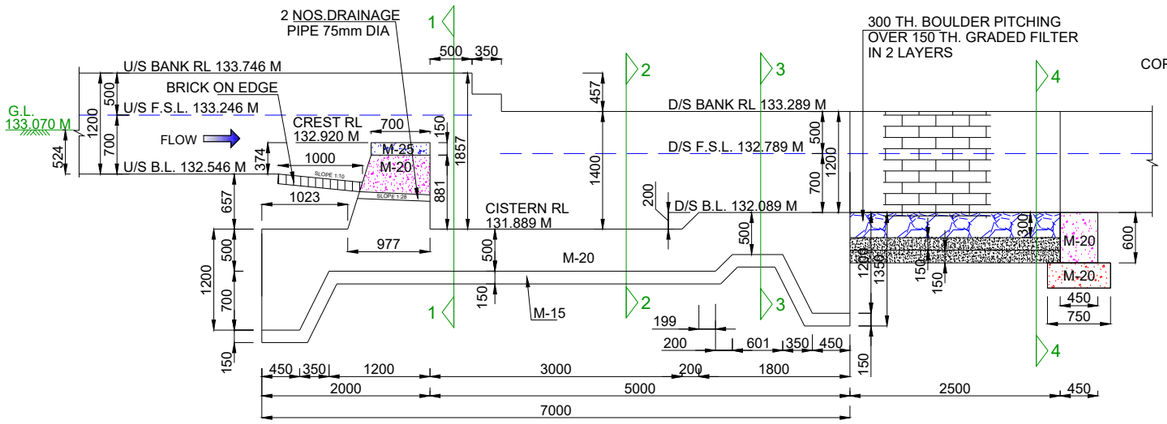
SCALE A:-

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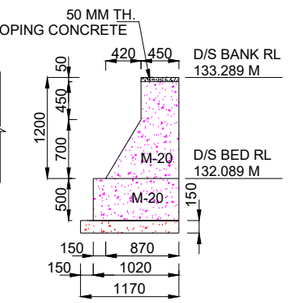
| | |
|---|---|
| Prepared by :- WAPCOS LTD. | |
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | SHARDA TYPE 1.829 M HT. FALL AT KM. 0.000 OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DY) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ FALL 1 of 1 |




SECTION AT 5-5
(SCALE A)




SECTION A-A
(SCALE A)




SECTION AT 6-6
(SCALE A)

## NOTES:-

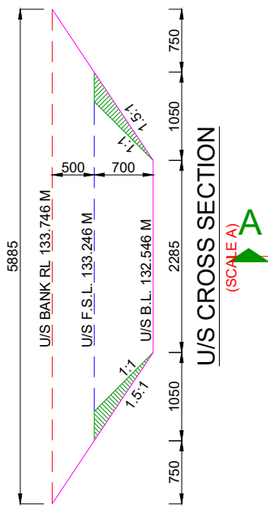
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2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

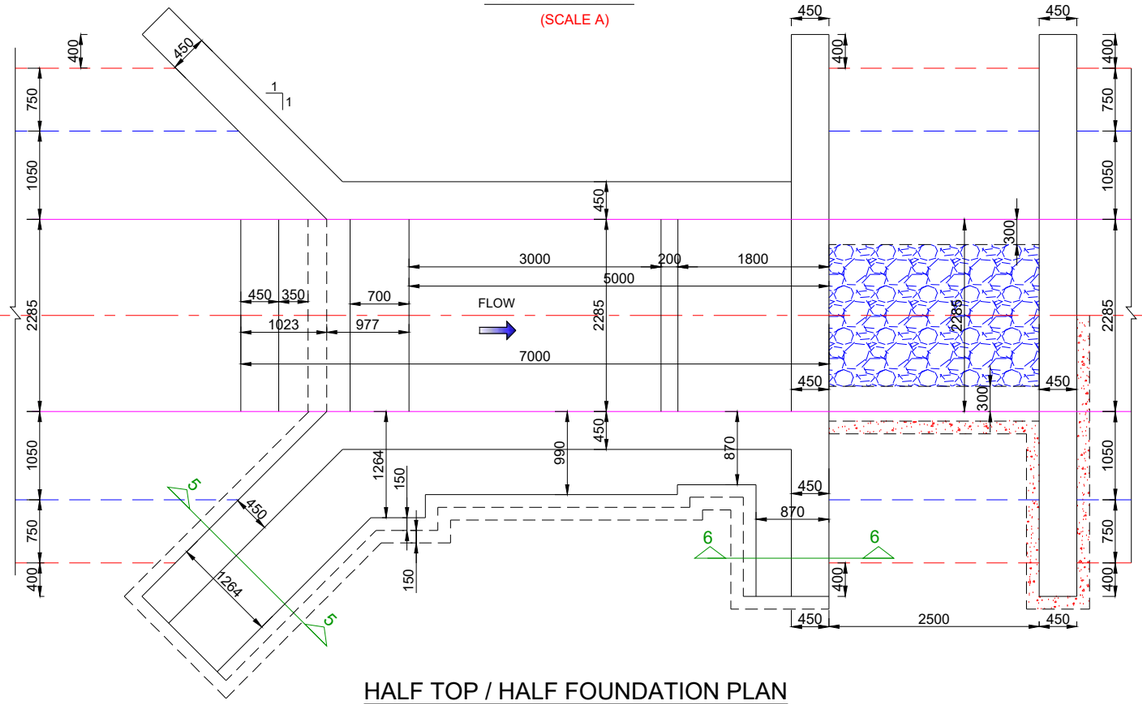
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

## HYDRAULIC:- DATA

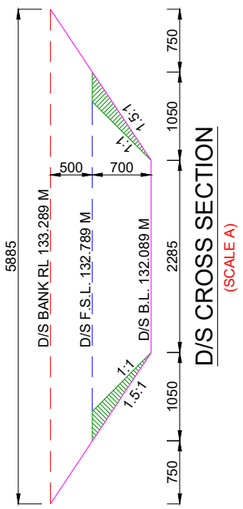
| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.760 | 0.760 | CUMEC |
| VERTICAL DROP | 0.457 | 0.457 | METRE |
| FULL SUPPLY DEPTH | 0.700 | 0.700 | METRE |
| BED WIDTH | 2.285 | 2.285 | METRE |
| BED SLOPE | 1 : 3500 | 1 : 3500 | |



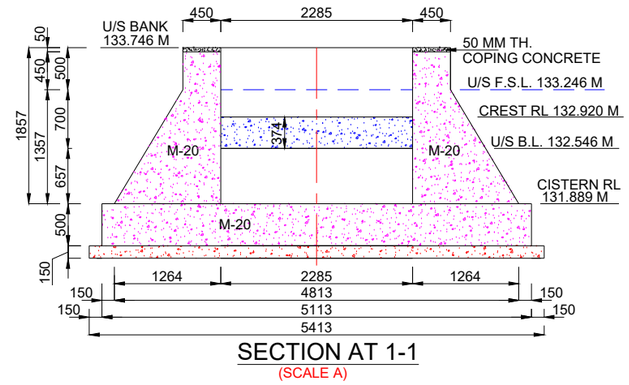

U/S CROSS SECTION
(SCALE A)



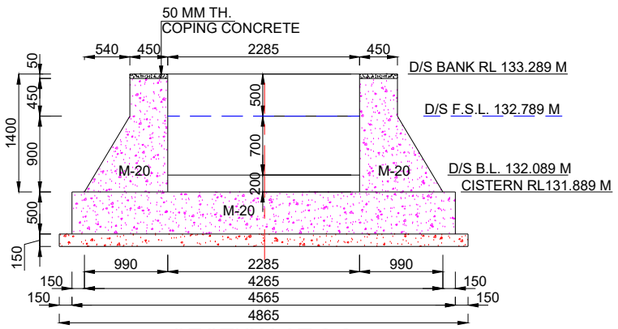

HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



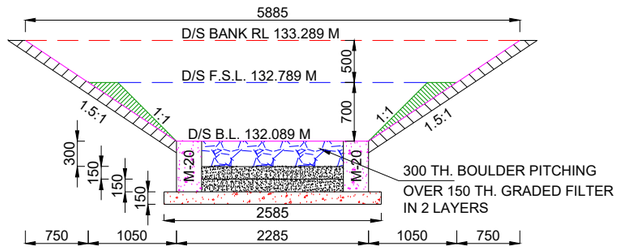

D/S CROSS SECTION
(SCALE A)



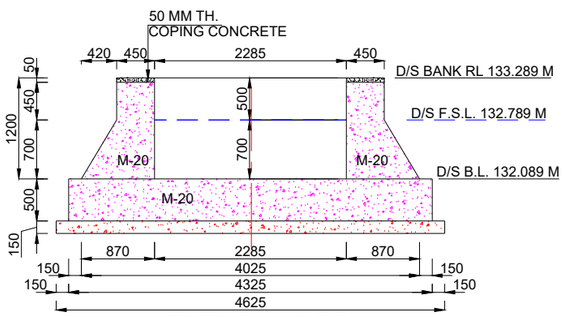

SECTION AT 1-1
(SCALE A)




SECTION AT 2-2
(SCALE A)




SECTION AT 4-4
(SCALE A)

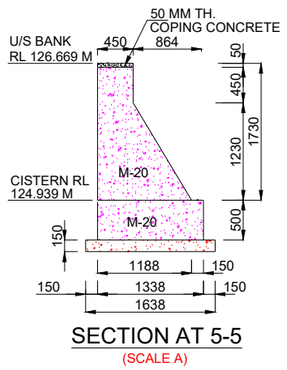



SECTION AT 3-3
(SCALE A)

SCALE A:-

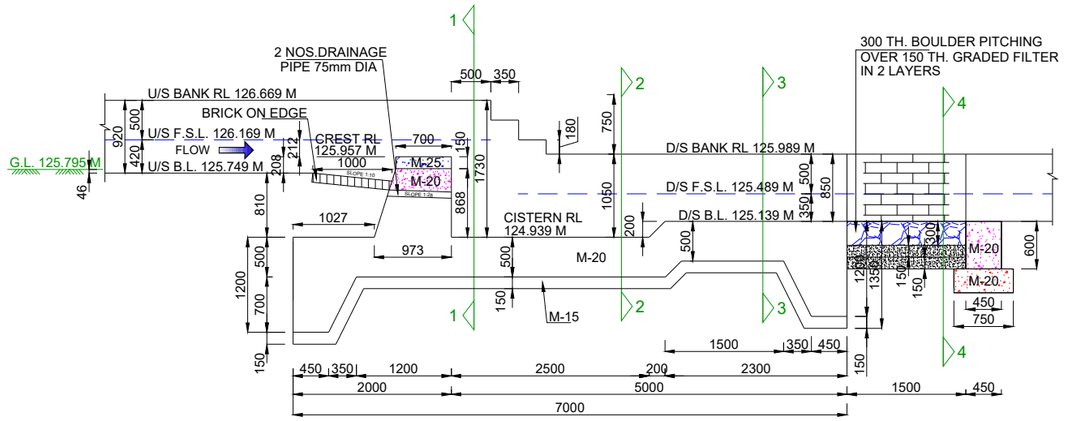
1000 0 1000 2000 3000

| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 0.457 M HT. FALL AT KM. 2.050 OF BARIAWA MR. (OFFTAKE FROM RD - 0+975 KM. (LT), MAHUARY SUB-DY) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ FALL 1 of 1 |
| | . | . . |



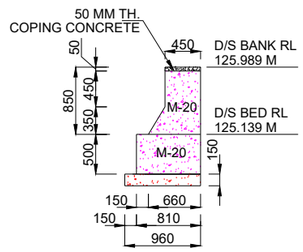

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

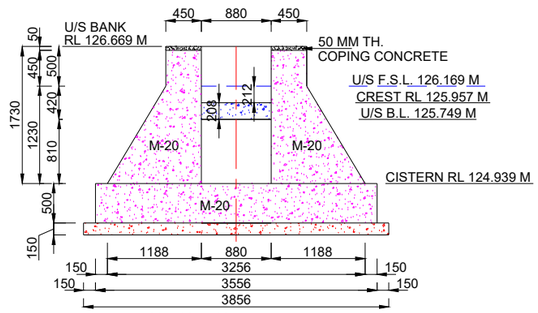
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| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

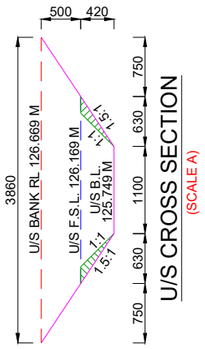
## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.140 | 0.140 | CUMEC |
| VERTICAL DROP | 0.610 | 0.610 | METRE |
| FULL SUPPLY DEPTH | 0.420 | 0.350 | METRE |
| BED WIDTH | 1.100 | 0.880 | METRE |
| BED SLOPE | 1 : 3500 | 1 : 3500 | |



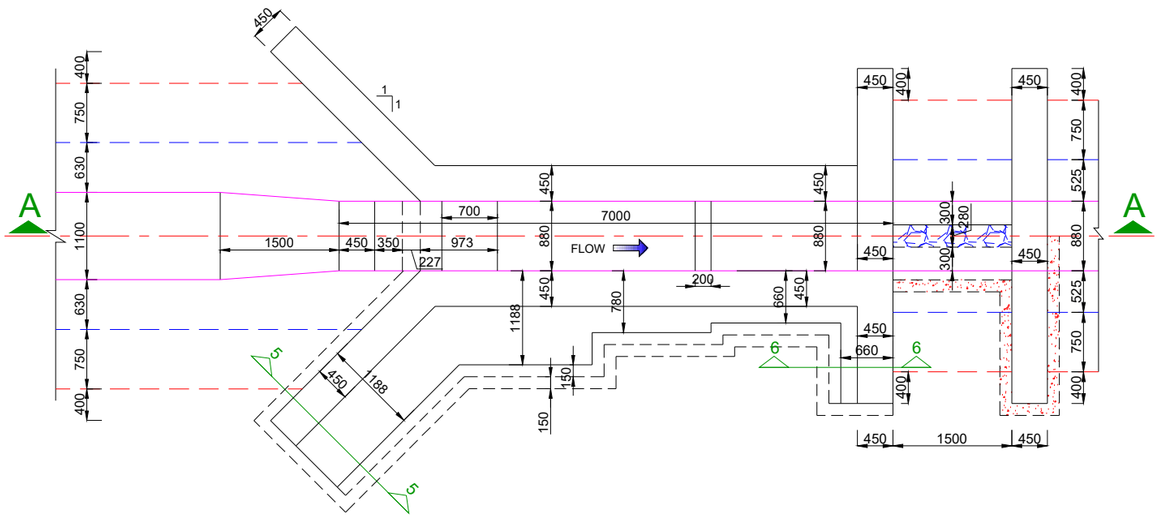

SECTION AT 1-1

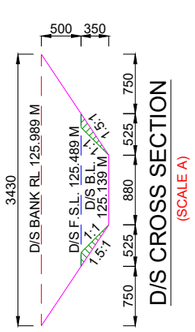
(SCALE A)




U/S CROSS SECTION

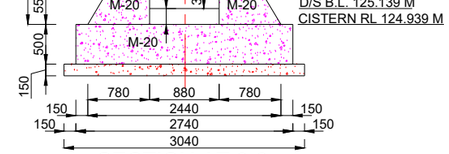
(SCALE A)



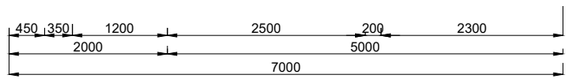

D/S CROSS SECTION

(SCALE A)



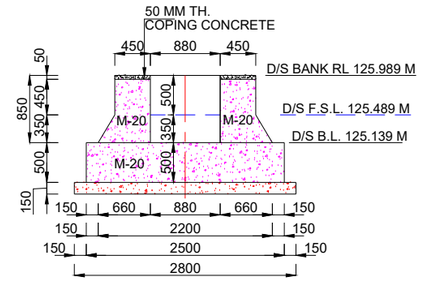

SECTION AT 2-2

(SCALE A)



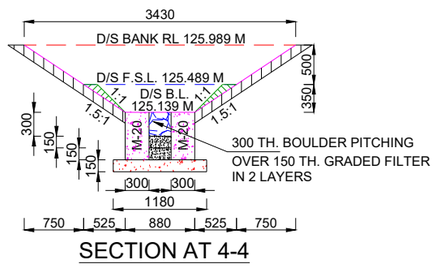

HALF TOP / HALF FOUNDATION PLAN

(SCALE A)




SECTION AT 3-3

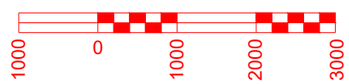
(SCALE A)




SECTION AT 4-4

(SCALE A)

SCALE A:-

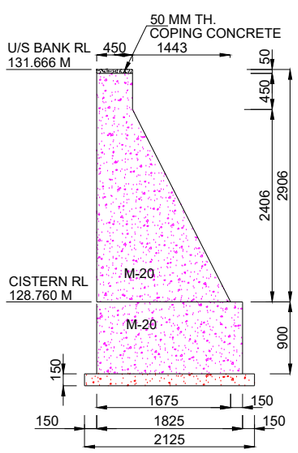



320

Prepared by :-

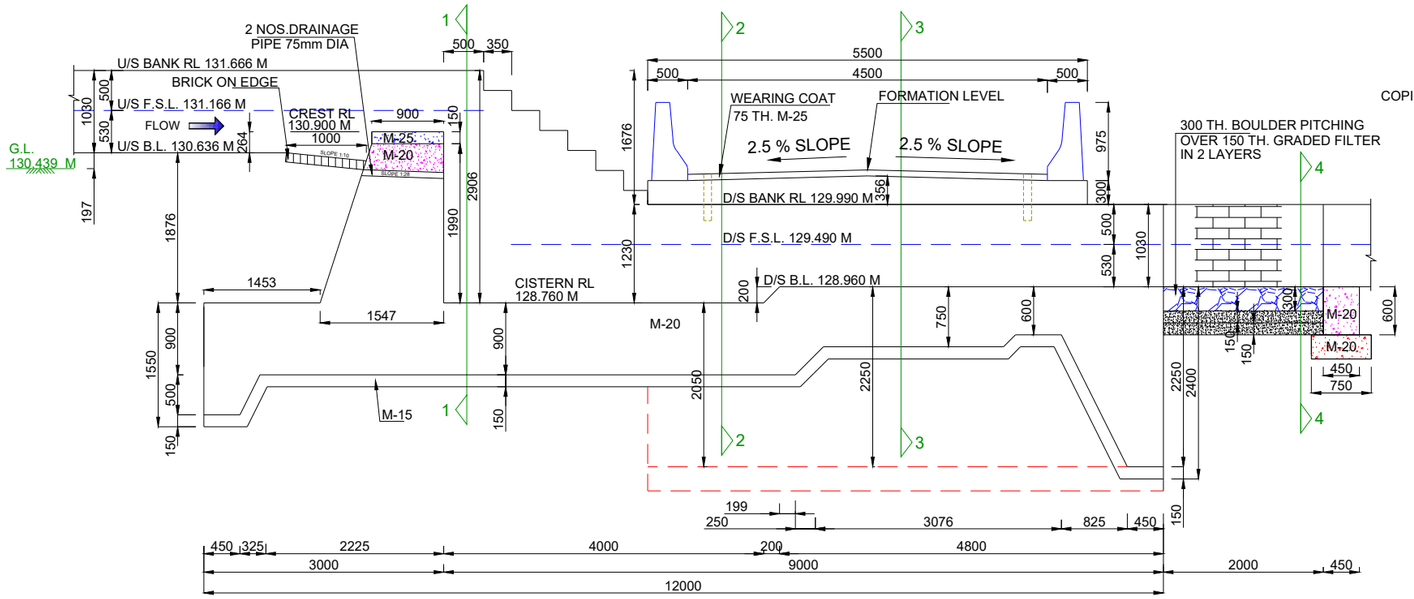
WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | SHARDA TYPE 0.610 M HT. FALL AT KM. 6.100 OF BARIAWA MR. (OFFTAKE RD - 0+975 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-01/ FALL 1 of 1 |
| . | . . |



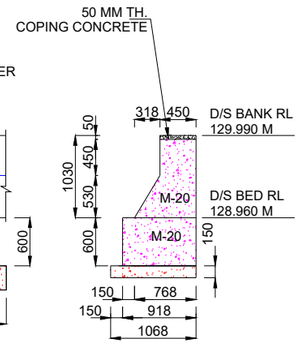

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

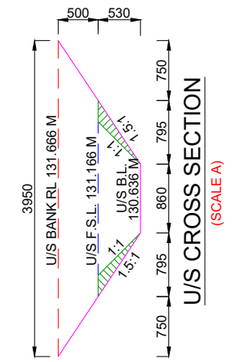
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| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

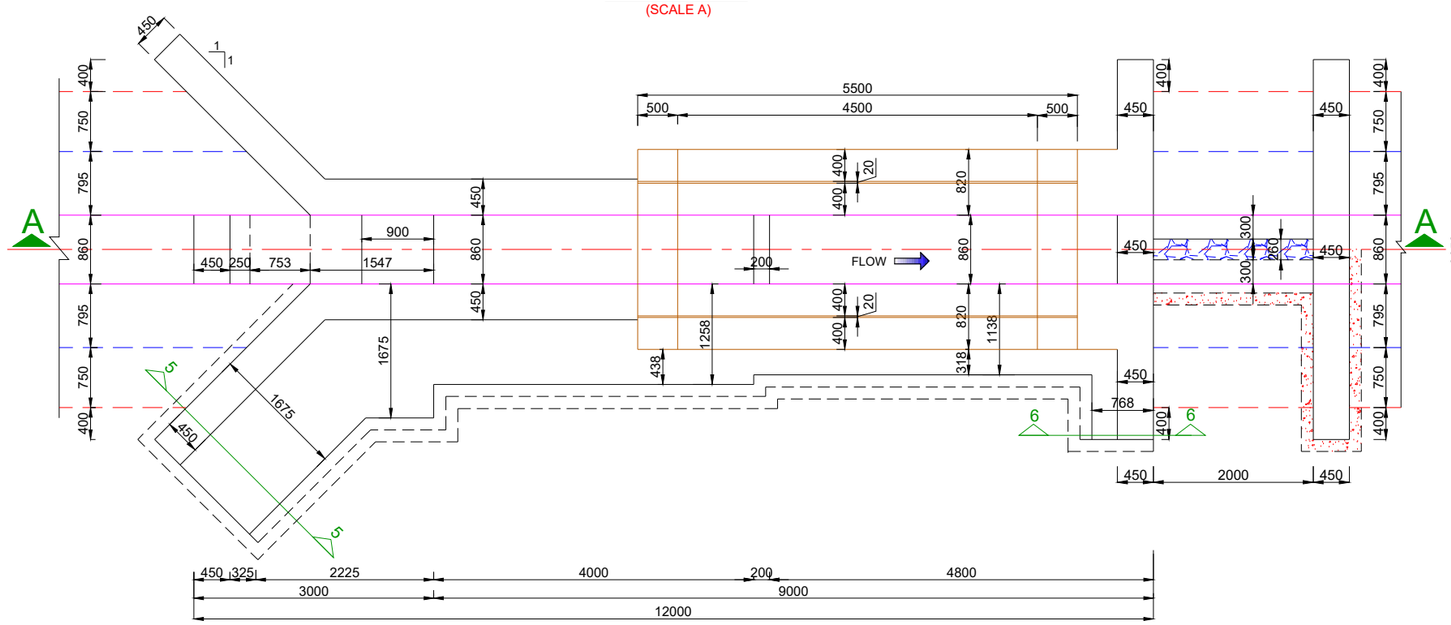
## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.190 | 0.190 | CUMEC |
| VERTICAL DROP | 1.676 | 1.676 | METRE |
| FULL SUPPLY DEPTH | 0.530 | 0.530 | METRE |
| BED WIDTH | 0.860 | 0.860 | METRE |
| BED SLOPE | 1 : 3500 | 1 : 3500 | |



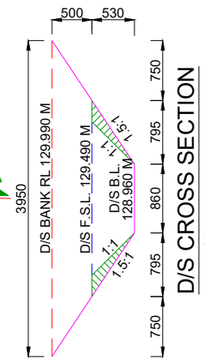

U/S CROSS SECTION

(SCALE A)



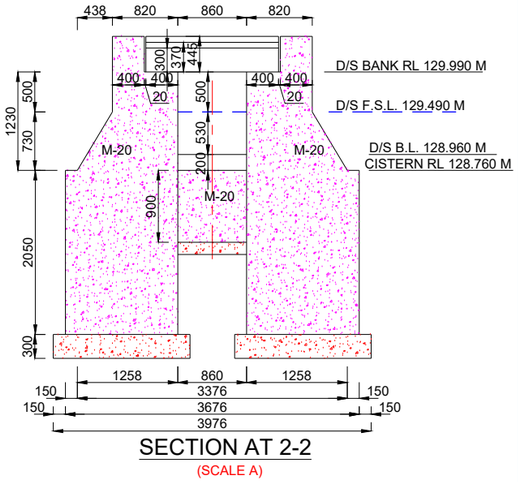

HALF TOP / HALF FOUNDATION PLAN

(SCALE A)



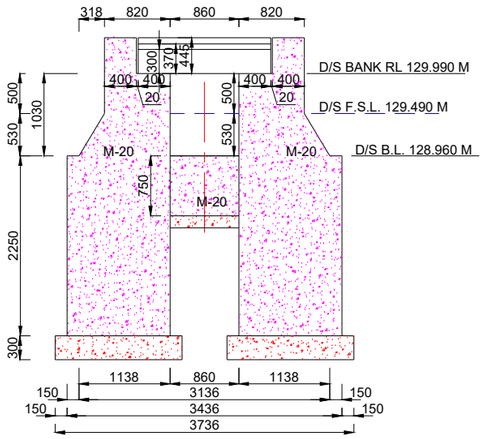

D/S CROSS SECTION

(SCALE A)



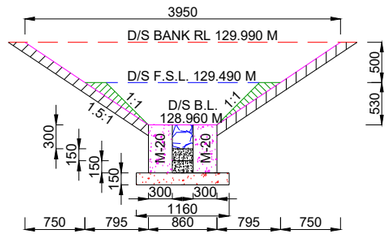

SECTION AT 2-2

(SCALE A)



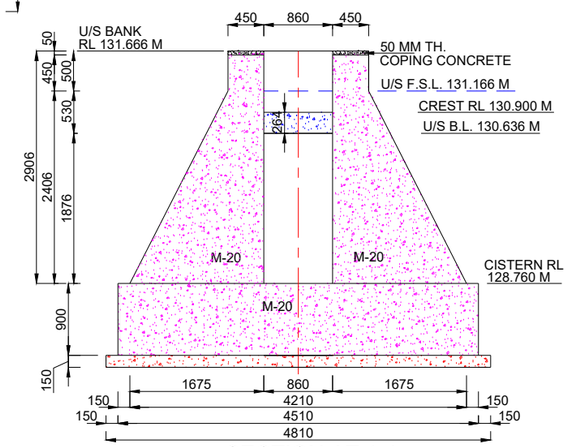

SECTION AT 3-3

(SCALE A)




SECTION AT 4-4

(SCALE A)




SECTION AT 1-1

(SCALE A)

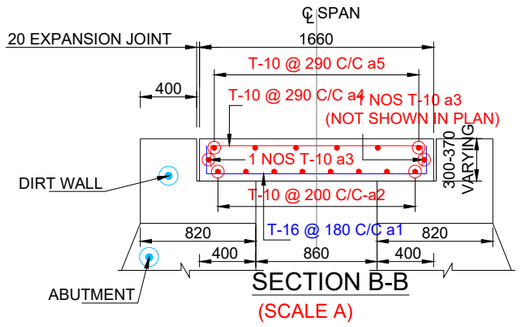
SCALE A:-

1000 0 1000 2000 3000

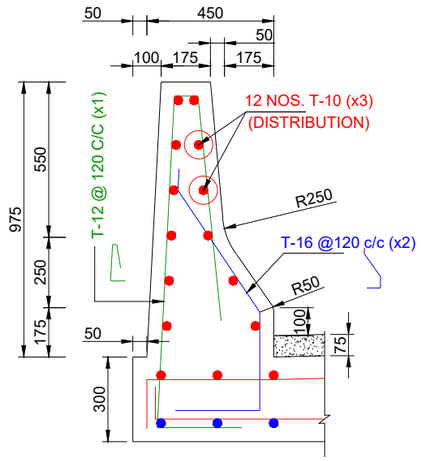
Prepared by :-

WAPCOS LTD.

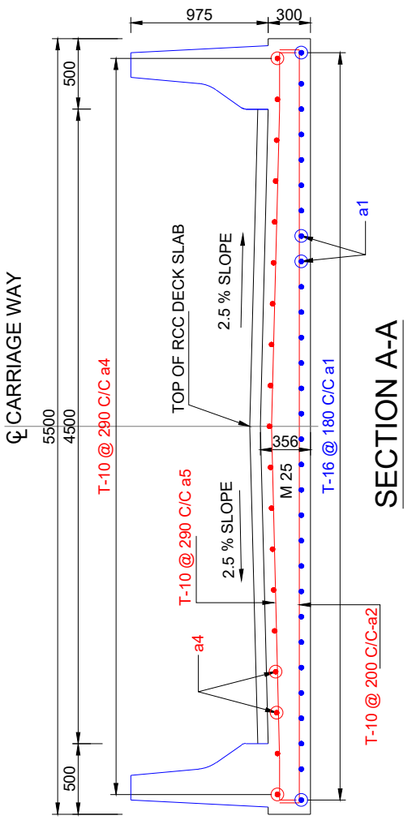
| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | SHARDA TYPE 1.676 M HT. FALL AT KM. 0.900 OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ FALL 1 of 1 |



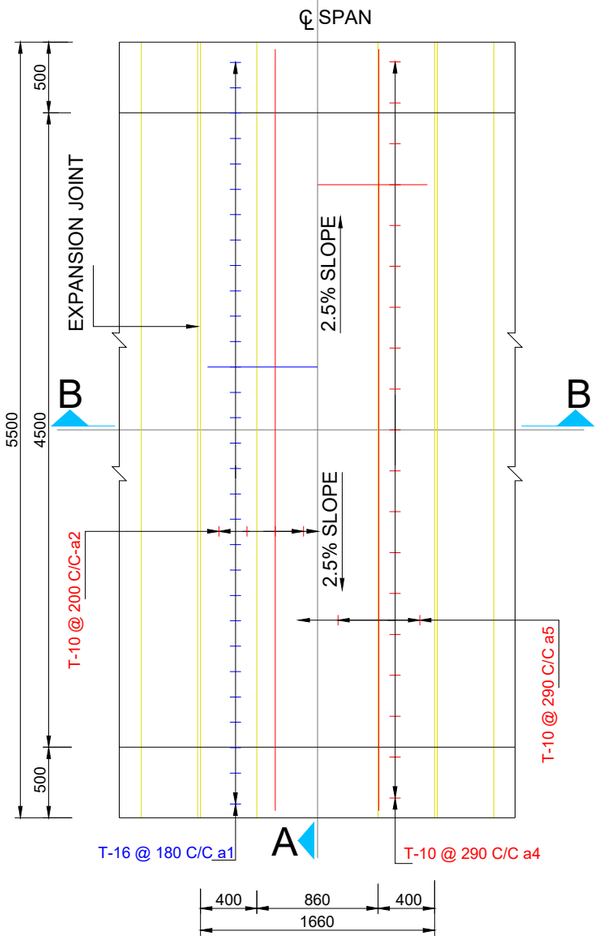

## SECTION B-B
(SCALE A)




## REINF. DETAILS OF CRASH BARRIER IN MAIN SLAB
(SCALE B)




## SECTION A-A




BOTTOM REINFORCEMENT TOP REINFORCEMENT

## PLAN SHOWING REINFORCEMENT DETAILS OF DECK SLAB
(SCALE A)

## BAR BENDING SCHEDULE

| S. No. | Type of bars | Shape of bars (not to scale) (Dimensions are in millimetres) | Dia of Bars (mm) | Spacing (mm) | Nos. of Bars |
|---|---|---|---|---|---|
| SLAB PER SPAN | | | | | |
| 1 | a1 | 200, R=80, 1560, 200 | 16 | 180 | 31 |
| 2 | a2 | 200, R=50, 5400, 200 | 10 | 200 | 8 |
| 3 | a3 | 5400 | 10 | - | 2 |
| 4 | a4 | 1560, 200, R=40, 200 | 10 | 290 | 19 |
| 5 | a5 | 200, 450, 2250, 2250, 450, 200 | 10 | 290 | 6 |
| CRASH BARRIER | | | | | |
| 1 | x1 | 75, 1176, 950, 300 | 12 | 120 | 14X2 |
| 2 | x2 | 75, 540, 350, 300 | 16 | 120 | 14X2 |
| 3 | x3 | 1560 | 12 | - | 10X2 |

## NOTES:-

1 ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2 THE DRAWING SHALL NOT BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3 ALL CONCRETE WORK SHALL CONFORM TO IS:456 - 2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,
BRIDGE SLAB & PARAPET M-25
4. ALL REINFORCEMENT BARS SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (Fe 500) COMFORMING I.S. 1786.
5. MIN. CLEAR COVER TO ANY REINF. INCLUDING STIRRUPS SHALL BE 40 MM OR UNLESS OTHERWISE SPECIFIED.
6. THE COVER INDICATED IN THIS DRAWINGS IS CLEAR COVER TO MAIN REINFORCEMENT BARS NEAREST TO THE CONCRETE SURFACE INCLUDING STIRRUPS AND BINDERS UNLESS MENTIONED OTHERWISE.
7. BENDING OF REINF. BARS SHALL CONFORM TO I.S. 2502.
8. REINF. BARS SHALL BE CUT AND ADJUSTED TO ACCOMODATE DRAINAGE SPOUT.
9. 75 MM THK. WEARING COAT IN M-25 CC SHALL BE PROVIDED.
10. APPROACH SLAB & APPROACH SLAB SUPPORT SHALL BE DECIDED BY FIELD ENGINEERS ACCORDING TO THE SITE CONDITIONS.
11. TARFELT BEARING SHALL BE PROVIDED UNDER SLAB AT SUPPORT.
12. THE REINFORCEMENT OF CRASH BARRIER SHALL BE INCORPORATED BEFORE CASTING OF THE DECK SLAB.
13. 8 MM DIA BAR @ 200 C/C IN BOTH DIRECTION SHALL BE PROVIDED IN WEARING COAT AT MIDDLE DEPTH.
14. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF SMALLER BAR.
15. THE DEVELOPMENT LENGTH OF BARS ARE GIVEN BELOW:

DEVELOPMENT LENGTH FULLY STRESSED DEFORMED BARS (fy=500N/mm$^2$) (IS 456 CLAUSE 26.2.1)

| TENSION BARS GRADE OF CONCRETE | | | | COMPRESSION BARS GRADE OF CONCRETE | | | |
|---|---|---|---|---|---|---|---|
| M15 | M20 | M25 | M30 | M15 | M20 | M25 | M30 |
| 68.00 | 56.60 | 48.50 | 45.30 | 54.40 | 45.30 | 38.80 | 36.30 |
| 81.60 | 68.00 | 58.30 | 54.40 | 65.30 | 54.40 | 46.60 | 43.50 |
| 108.80 | 90.60 | 77.70 | 72.50 | 87.00 | 87.00 | 62.10 | 58.00 |
| 135.90 | 113.30 | 97.10 | 90.60 | 108.80 | 108.80 | 77.70 | 72.50 |
| 169.90 | 141.60 | 121.40 | 113.30 | 135.90 | 135.90 | 97.10 | 90.60 |
| 217.50 | 181.30 | 155.40 | 145.00 | 174.00 | 174.00 | 124.30 | 116.00 |

1. THE DEVELOPMENT LENGTHS GIVEN ABOVE ARE FOR A STRESS OF 0.87 fy IN THE BAR
2. THE DEVELOPMENT LENGTH INCLUDES ANCHORAGE VALUES OF HOOKS IN TENSION REINFORCEMENT.

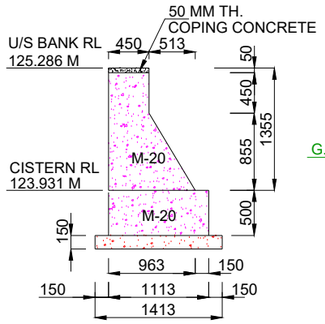
16. LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR IS POSSIBLE IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOW WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50 % ONLY (IRC:112 - 2011) CLAUSE: 15.2.5.1)
LAP LENGTH = $\alpha$1. lbnet
WHERE, $\alpha$1 = 1.0 for p%≤25%
$\alpha$1 = 1.15 for 25%≤p%≤33%
$\alpha$1 = 1.4 for 33%≤p%≤50%
17. THE STRAIGHT LENGTH OF THE LAP SHOULD NOT BE LESS THAN 15Ø OR 200 MM (WHICH EVER IS MORE)
18. THE LAP LENGTH MUST BE AT LEAST EQUAL TO DEVELOPMENT LENGTH IN NO CASE, THE LAP LENGTH SHOULD BE LESS THAN 30Ø FOR FLEXURAL AND DIRECT TENSION AND 24Ø FOR COMPRESSION.
19. LAP SPLICES SHALL BE CONSIDERED AS STAGGERED IF THE C/C DISTANCE OF SPLICES IS NOT LESS THAN 1.3 TIMES THE LAP LENGTH CALCULATED.
20. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF SMALLER BAR.

SCALE A:- 400 0 400 800 1200

SCALE B:- 200 0 200 400 600

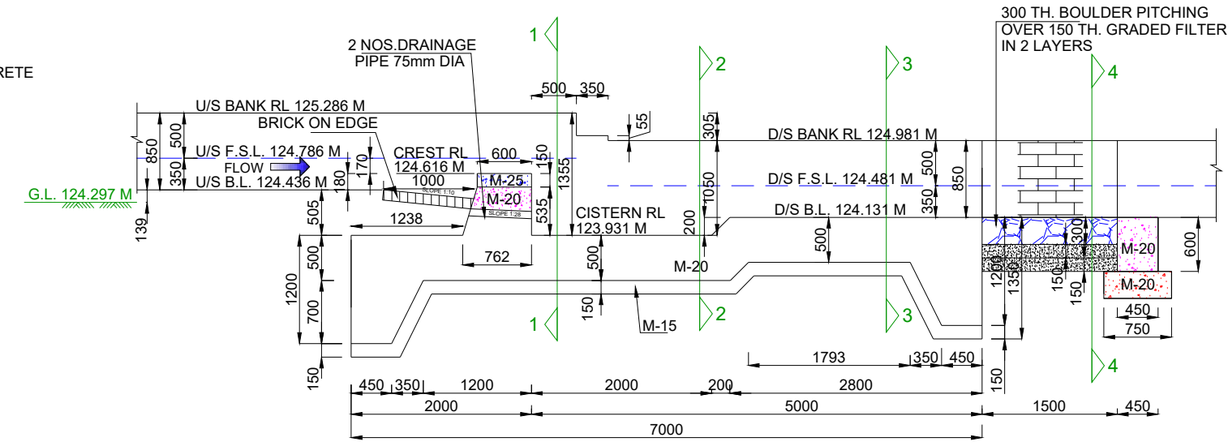
Prepared by :-
WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | REINFORCEMENT DETAILS OF SLAB FOR FALL CUM BRG. AT KM. 0.900 OF TETRIA MR. (OFFTAKE FROM RD -5+363 KM.(RT), BISHUNPUR SUB-DY CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ FALL 2 of 2 |



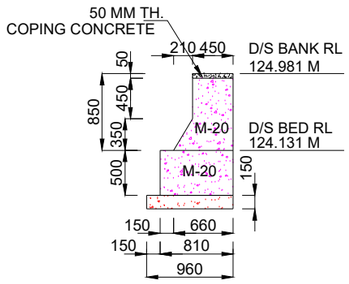

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

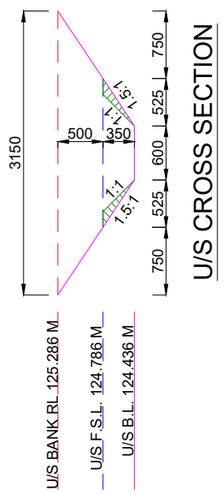
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

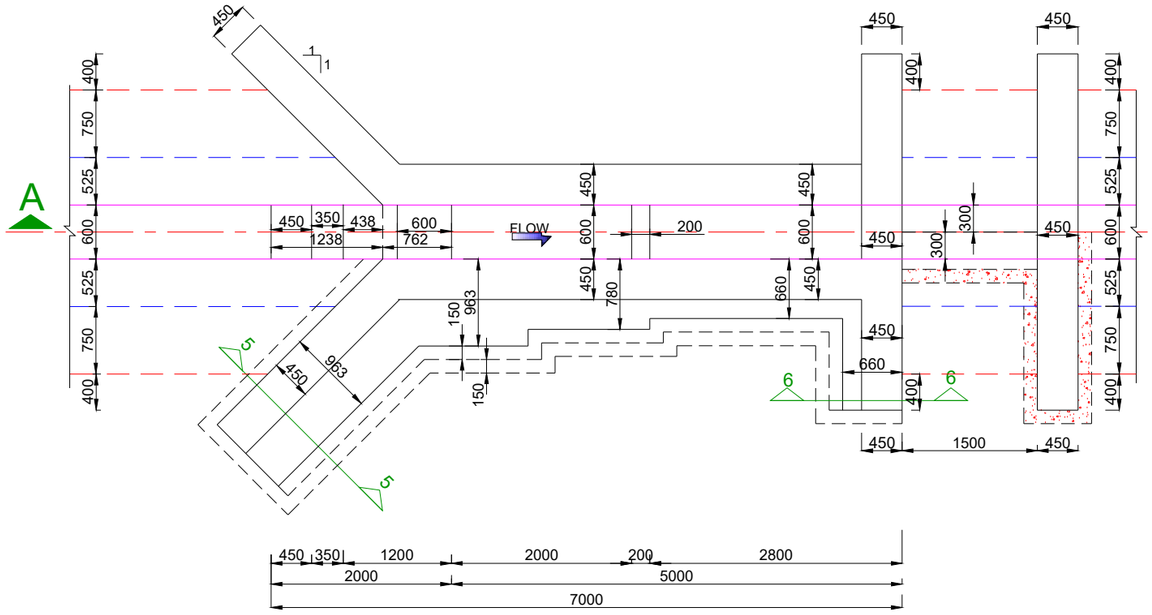
## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.070 | 0.070 | CUMEC |
| VERTICAL DROP | 0.305 | 0.305 | METRE |
| FULL SUPPLY DEPTH | 0.350 | 0.350 | METRE |
| BED WIDTH | 0.600 | 0.600 | METRE |
| BED SLOPE | 1 : 3500 | 1 : 3500 | |



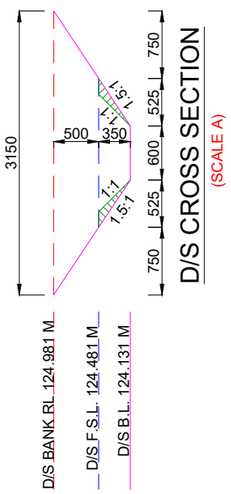

U/S CROSS SECTION

(SCALE A)



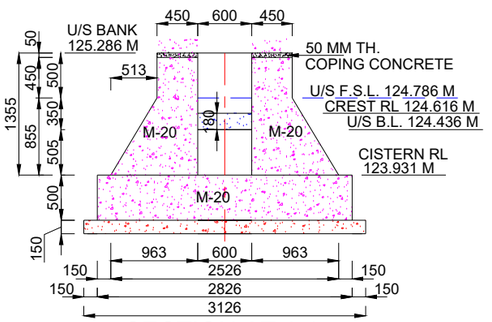

HALF TOP / HALF FOUNDATION PLAN

(SCALE A)



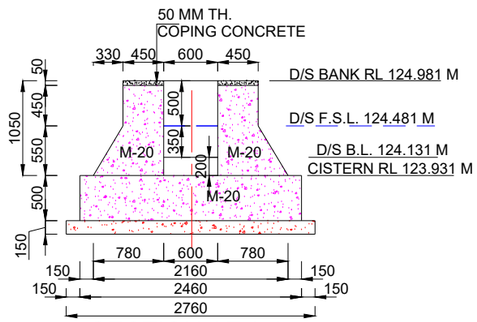

D/S CROSS SECTION

(SCALE A)



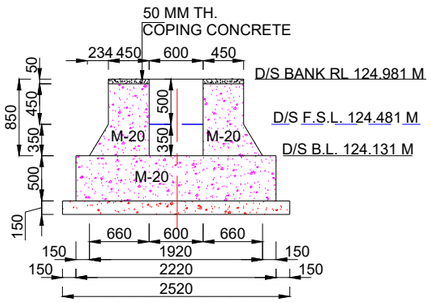

SECTION AT 1-1

(SCALE A)



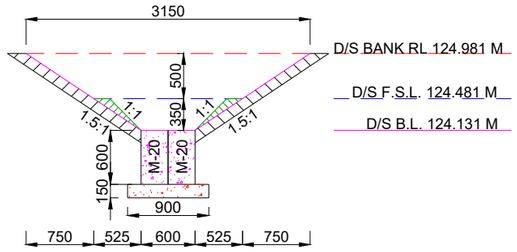

SECTION AT 2-2

(SCALE A)




SECTION AT 3-3

(SCALE A)



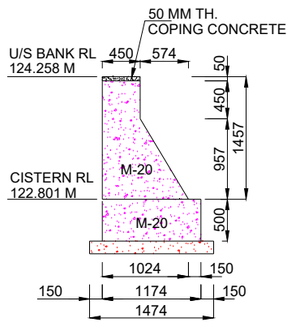

SECTION AT 4-4

(SCALE A)

SCALE A:-

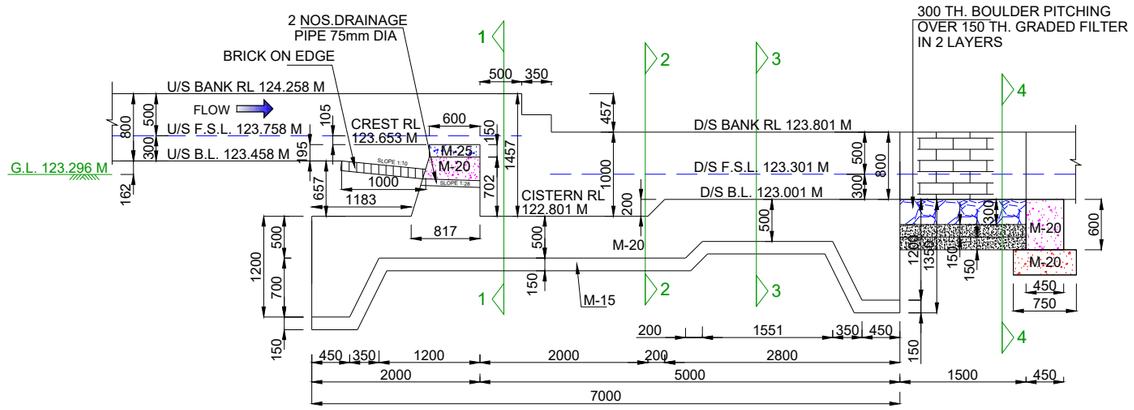
1000 0 1000 2000 3000

| | |
|---|---|
| Prepared by :- WAPCOS LTD. | |
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | SHARDA TYPE 0.305 M HT. FALL AT KM. 3.950 OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ FALL 1 of 1 |



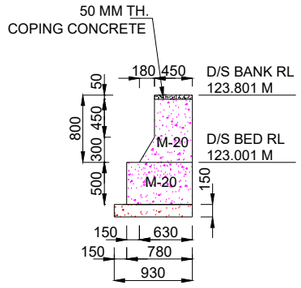

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

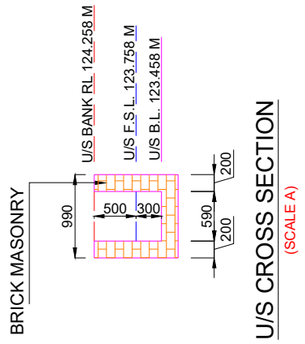
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| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

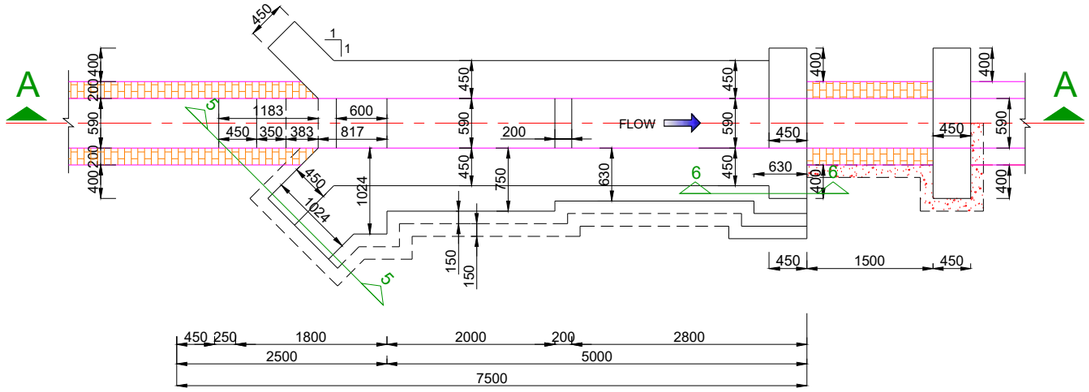
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.030 | 0.030 | CUMEC |
| VERTICAL DROP | 0.457 | 0.457 | METRE |
| FULL SUPPLY DEPTH | 0.300 | 0.300 | METRE |
| BED WIDTH | 0.590 | 0.590 | METRE |
| BED SLOPE | 1 : 3500 | 1 : 3500 | |

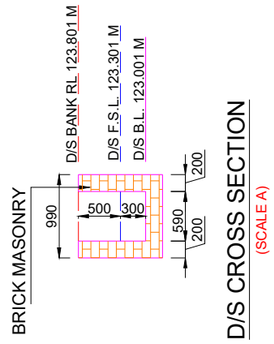



U/S CROSS SECTION (SCALE A)

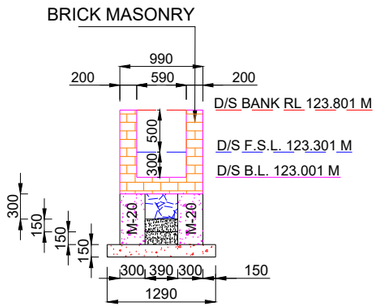



HALF TOP / HALF FOUNDATION PLAN

(SCALE A)

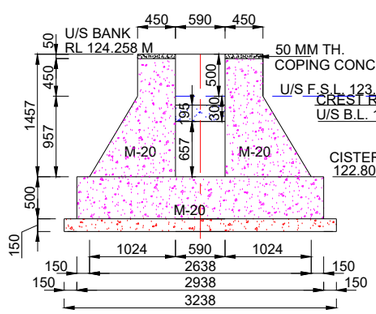



D/S CROSS SECTION (SCALE A)



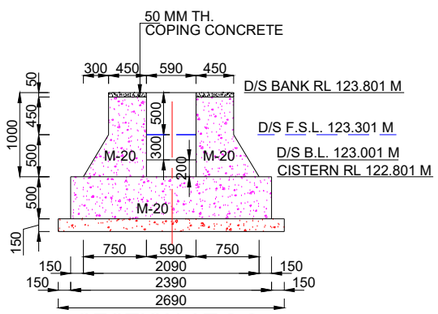

SECTION AT 4-4

(SCALE A)



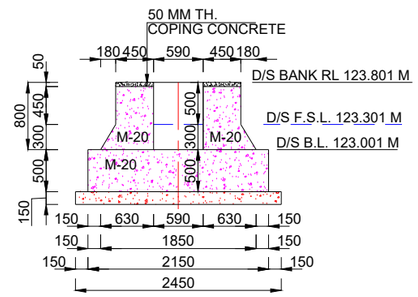

SECTION AT 1-1

(SCALE A)




SECTION AT 2-2

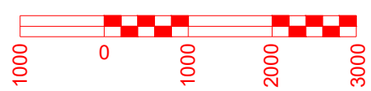
(SCALE A)



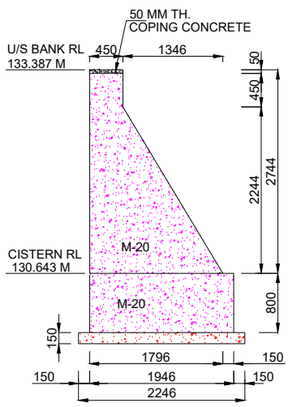

SECTION AT 3-3

(SCALE A)

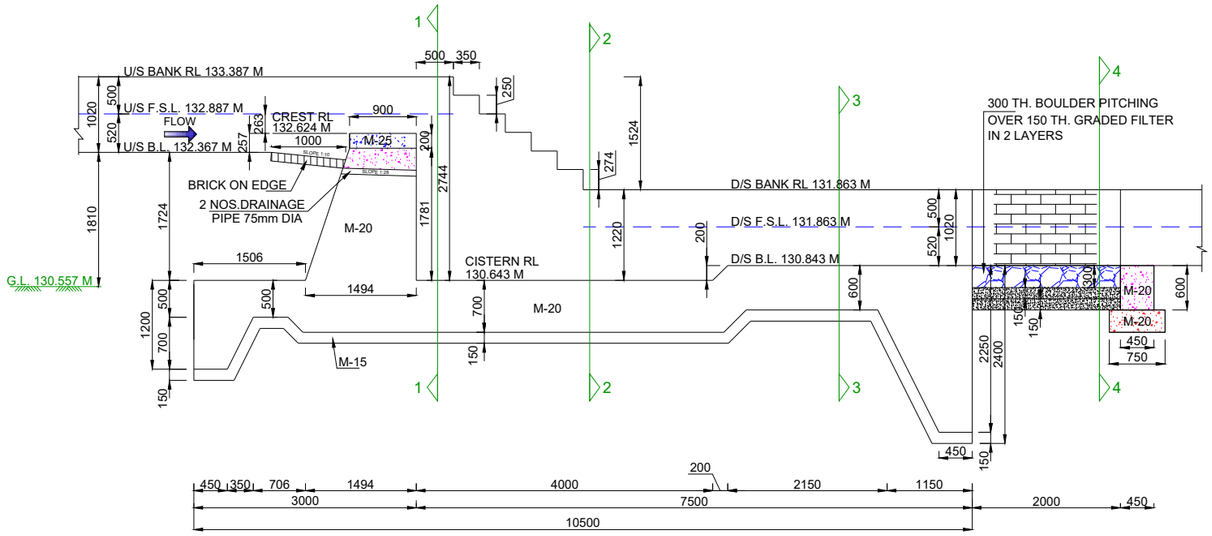
SCALE A:-



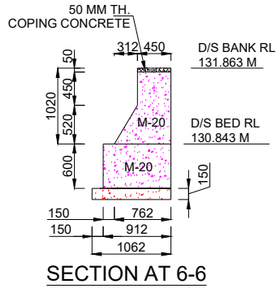

| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 0.457 M HT. FALL AT KM. 4.600 OF ITMA MR. (OFFTAKE FROM RD - 3+985 KM. (LT), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ FALL 1 of 1 |
| | . | . . |




SECTION AT 5-5
(SCALE A)




SECTION A-A
(SCALE A)




SECTION AT 6-6
(SCALE A)

## NOTES:-

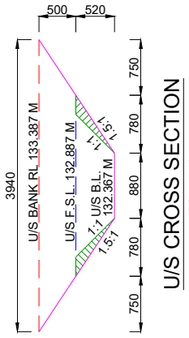
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3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

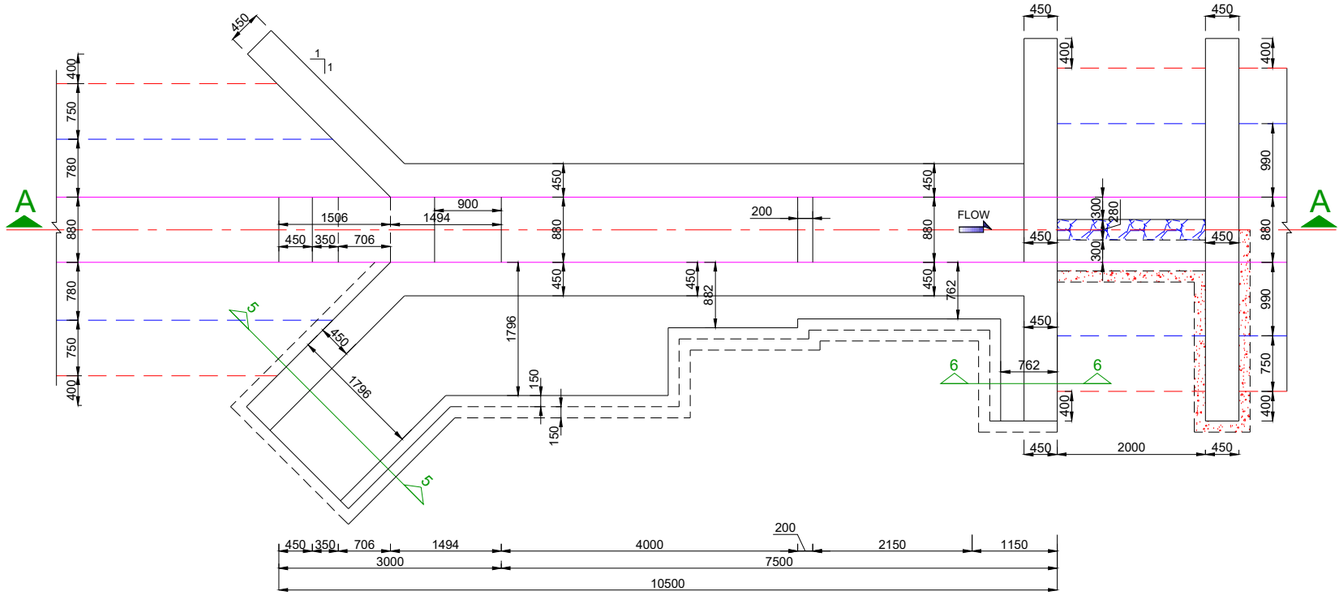
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

## HYDRAULIC:- DATA

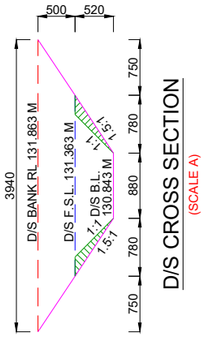
| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.190 | 0.190 | CUMEC |
| VERTICAL DROP | 1.524 | 1.524 | METRE |
| FULL SUPPLY DEPTH | 0.520 | 0.520 | METRE |
| BED WIDTH | 0.880 | 0.880 | METRE |
| BED SLOPE | 1 : 3000 | 1 : 3000 | |



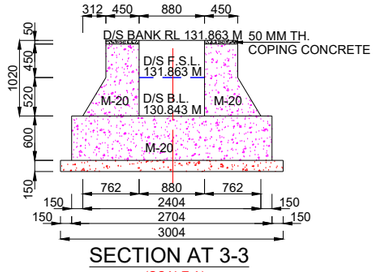

U/S CROSS SECTION
(SCALE A)



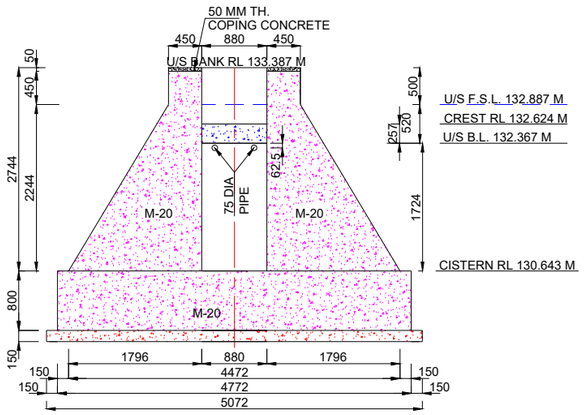

HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



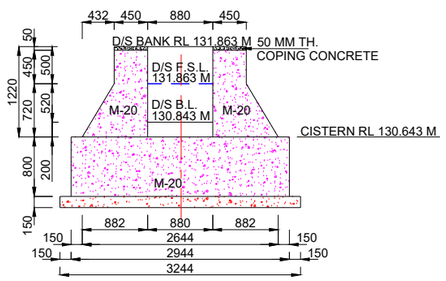

D/S CROSS SECTION
(SCALE A)



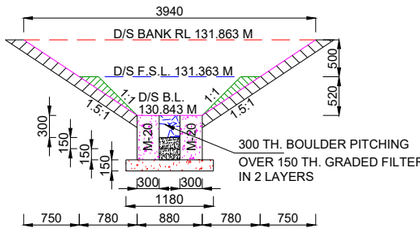

SECTION AT 3-3
(SCALE A)




SECTION AT 1-1
(SCALE A)




SECTION AT 2-2
(SCALE A)

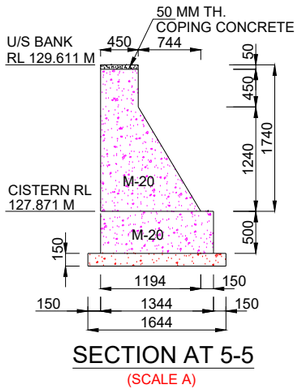



SECTION AT 4-4
(SCALE A)

SCALE A:-

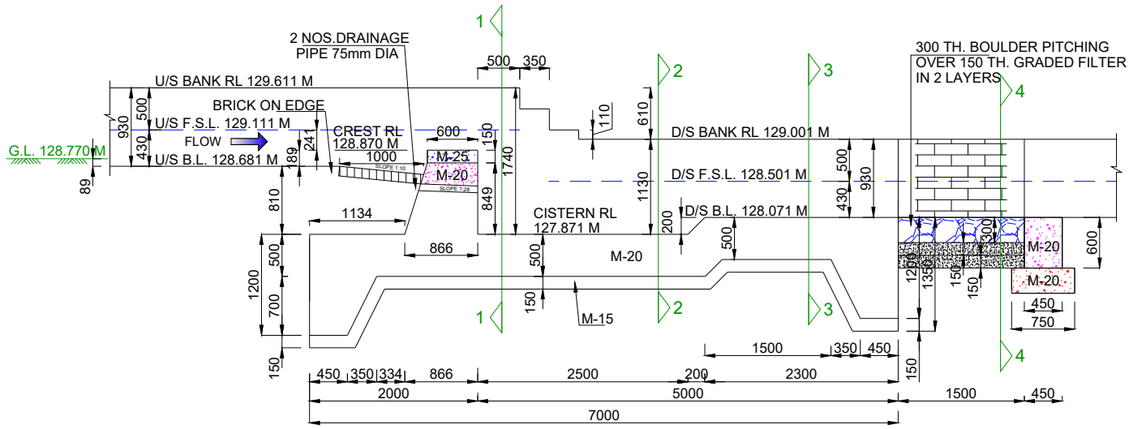
1000 0 1000 2000 3000

| | |
|---|---|
| Prepared by :- WAPCOS LTD. | |
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | SHARDA TYPE 1.524 M HT. FALL AT KM. 0.000 OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ FALL 1 of 1 |



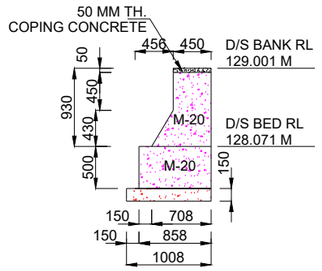

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

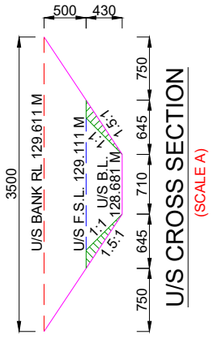
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| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

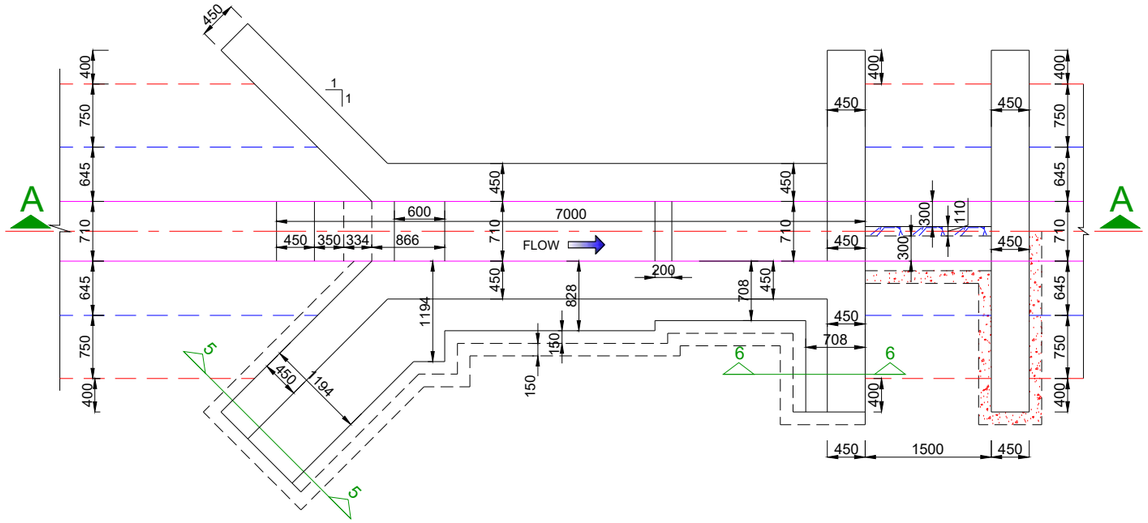
## HYDRAULIC:- DATA

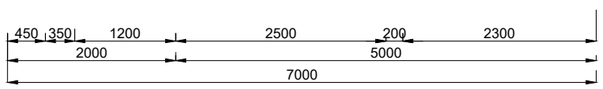
| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.110 | 0.110 | CUMEC |
| VERTICAL DROP | 0.610 | 0.610 | METRE |
| FULL SUPPLY DEPTH | 0.430 | 0.430 | METRE |
| BED WIDTH | 0.710 | 0.710 | METRE |
| BED SLOPE | 1 : 3000 | 1 : 3000 | |




U/S CROSS SECTION

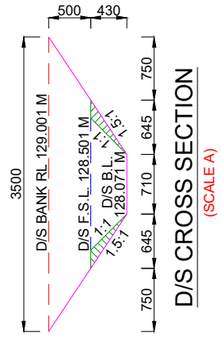
(SCALE A)



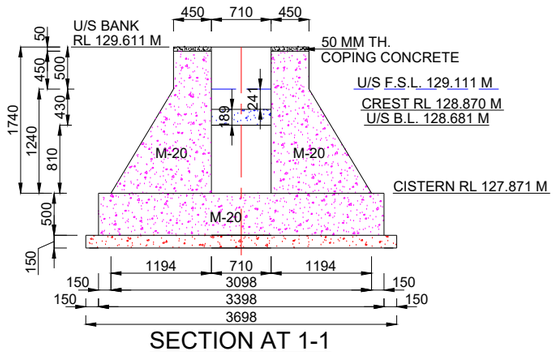

HALF TOP / HALF FOUNDATION PLAN

(SCALE A)



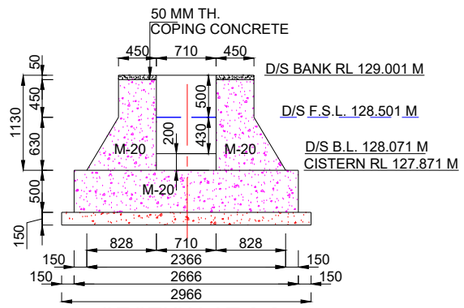

D/S CROSS SECTION

(SCALE A)



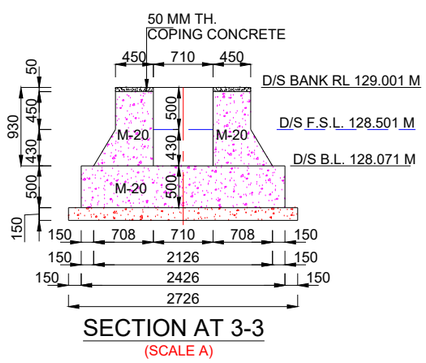

SECTION AT 1-1

(SCALE A)



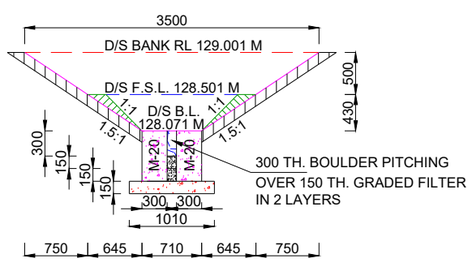

SECTION AT 2-2

(SCALE A)




SECTION AT 3-3

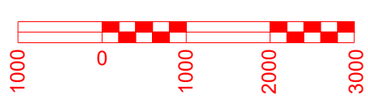
(SCALE A)



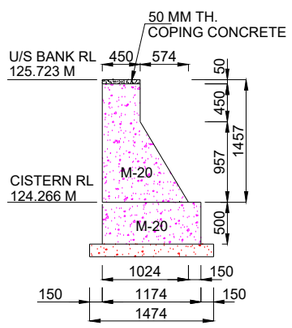

SECTION AT 4-4

(SCALE A)

SCALE A:-

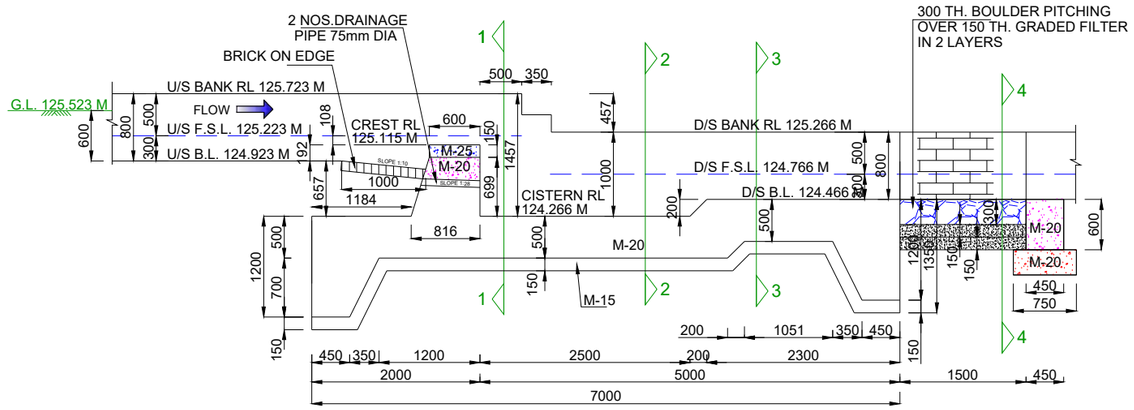



| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 0.610 M HT. FALL AT KM. 1.000 OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ FALL 1 of 1 |
| | . | . . |



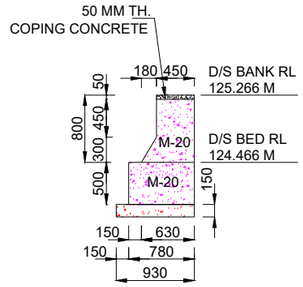

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

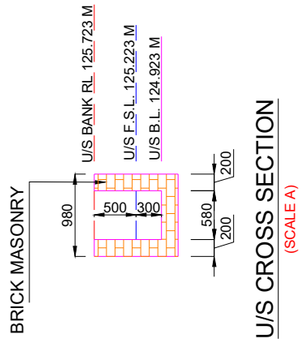
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

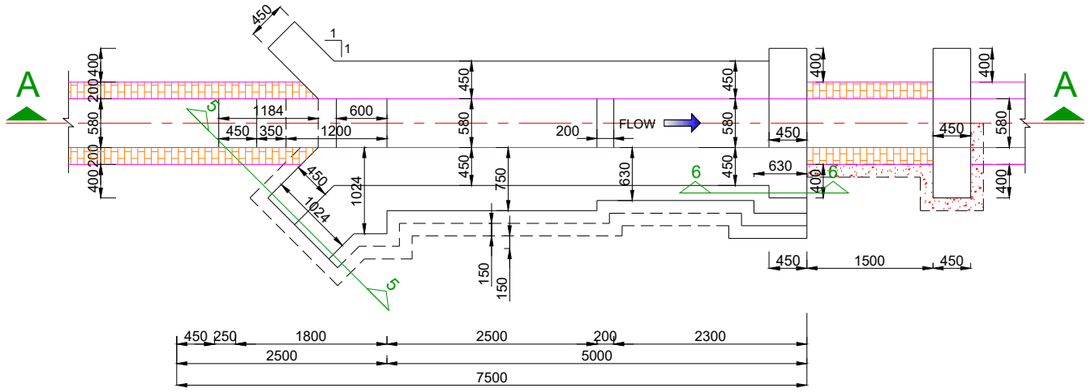
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.030 | 0.030 | CUMEC |
| VERTICAL DROP | 0.457 | 0.457 | METRE |
| FULL SUPPLY DEPTH | 0.300 | 0.300 | METRE |
| BED WIDTH | 0.580 | 0.580 | METRE |
| BED SLOPE | 1 : 3000 | 1 : 3000 | |

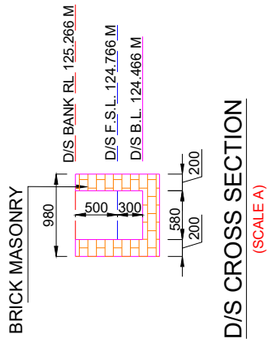



U/S CROSS SECTION (SCALE A)

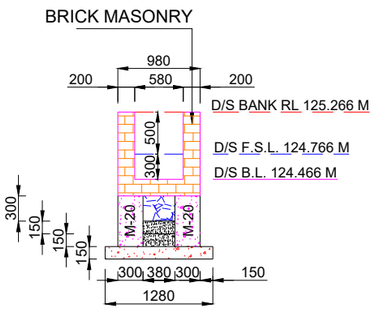



HALF TOP / HALF FOUNDATION PLAN

(SCALE A)

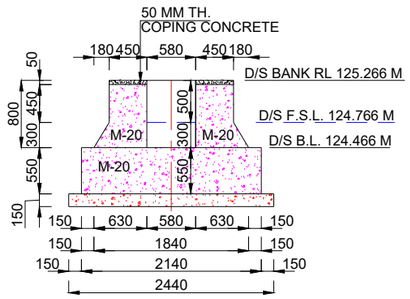



D/S CROSS SECTION (SCALE A)



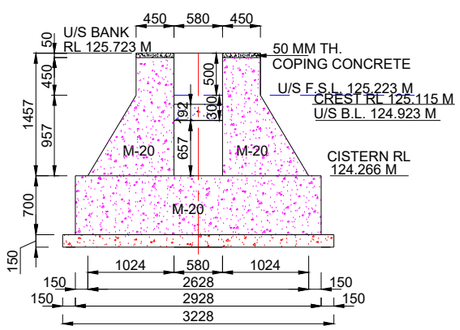

SECTION AT 4-4

(SCALE A)



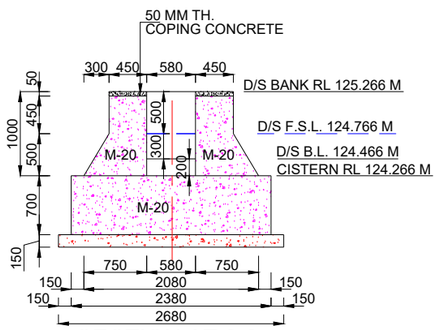

SECTION AT 3-3

(SCALE A)




SECTION AT 1-1

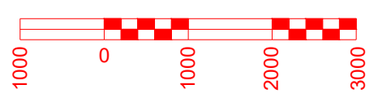
(SCALE A)



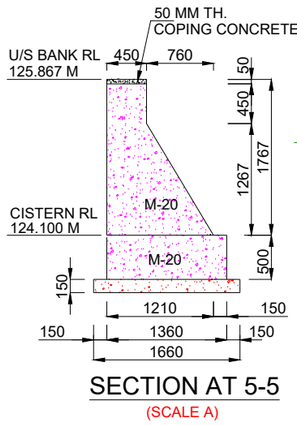

SECTION AT 2-2

(SCALE A)

SCALE A:-

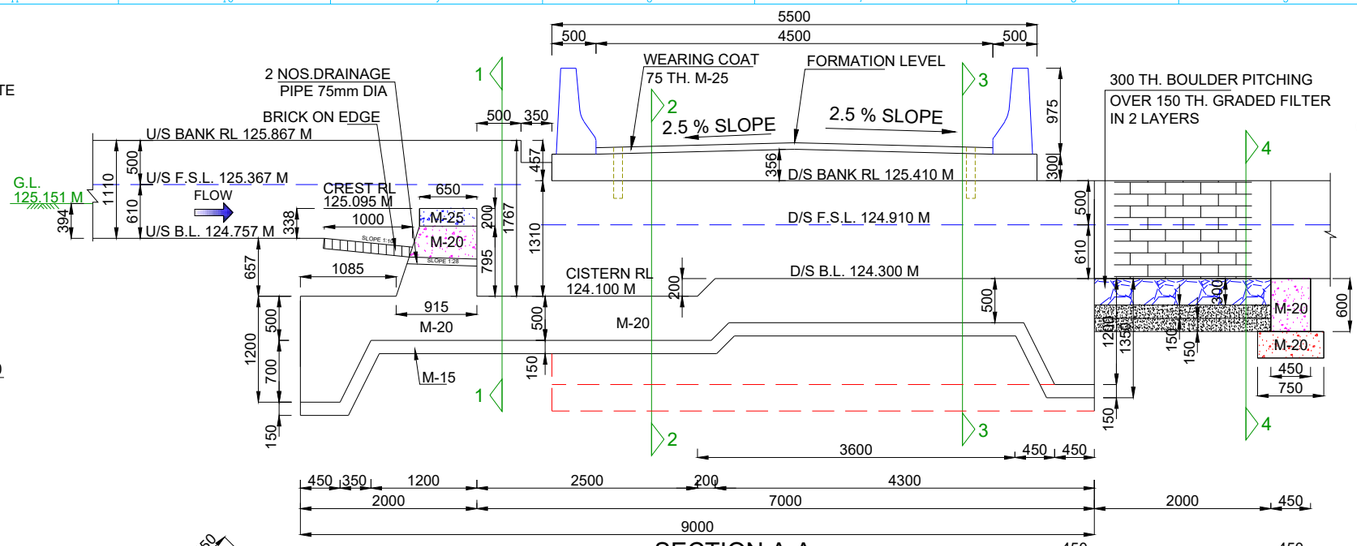



| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 0.457 M HT. FALL AT KM. 3.125 OF MALI MR. (OFFTAKE FROM RD - 4+520 KM. (R), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-03/ FALL 1 of 1 |
| | . | . . |



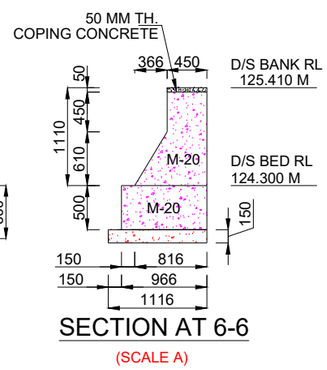

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

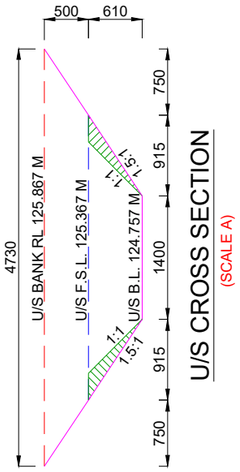
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
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3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

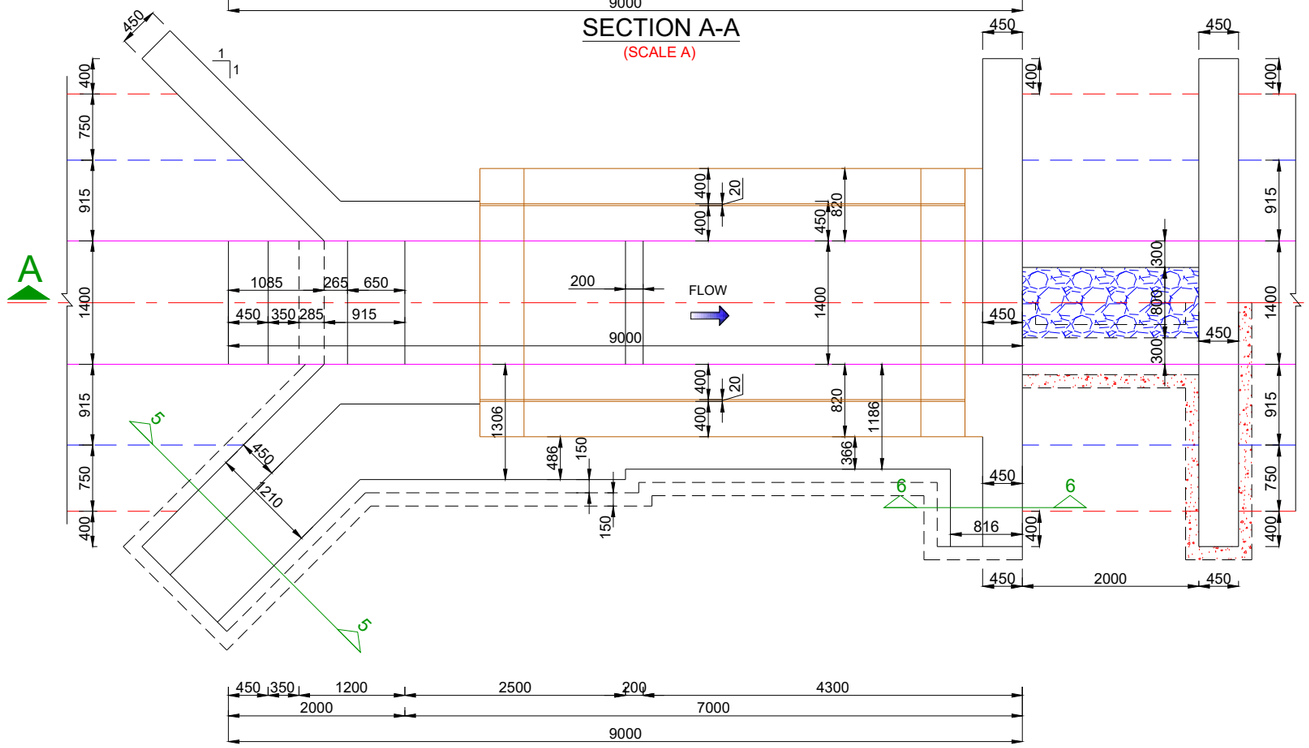
## HYDRAULIC:- DATA

| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.350 | 0.350 | CUMEC |
| VERTICAL DROP | 0.457 | 0.457 | METRE |
| FULL SUPPLY DEPTH | 0.610 | 0.610 | METRE |
| BED WIDTH | 1.400 | 1.400 | METRE |
| BED SLOPE | 1 : 3500 | 1 : 3500 | |




U/S CROSS SECTION

(SCALE A)

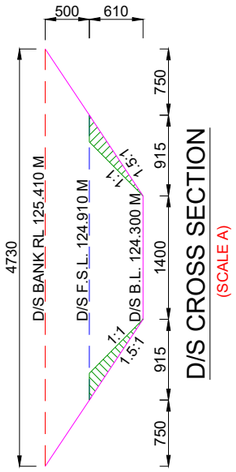






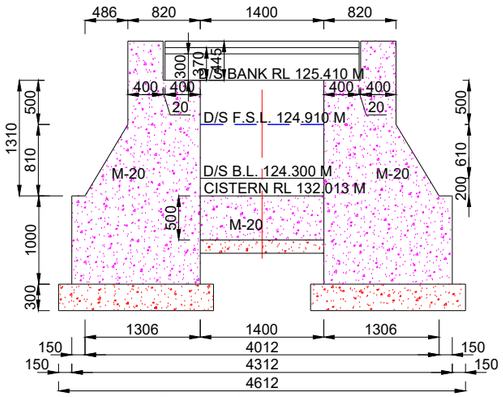
HALF TOP / HALF FOUNDATION PLAN

(SCALE A)



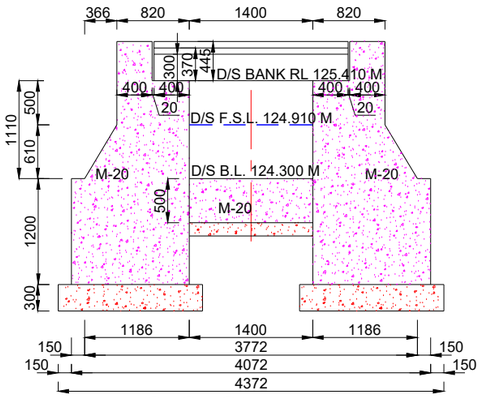

D/S CROSS SECTION

(SCALE A)



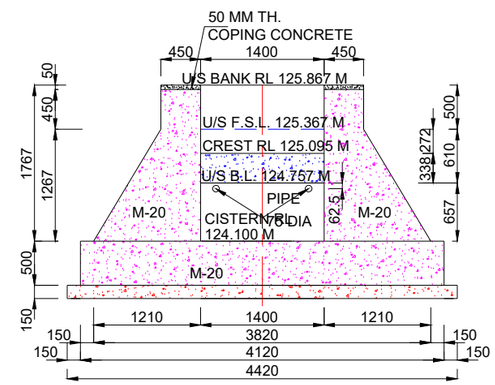

SECTION AT 2-2

(SCALE A)



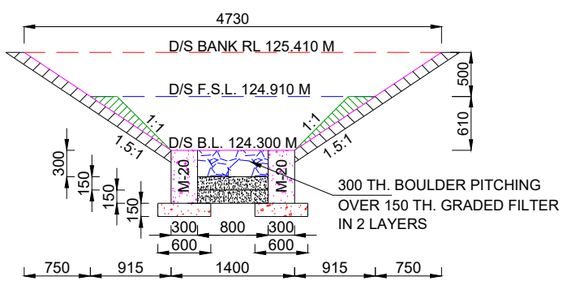

SECTION AT 3-3

(SCALE A)




SECTION AT 1-1

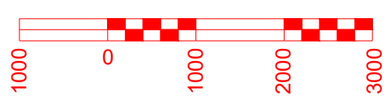
(SCALE A)



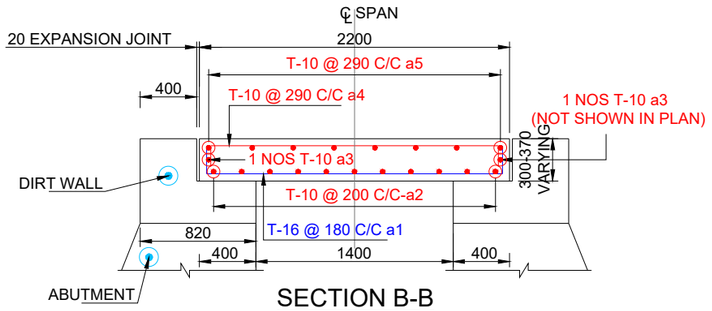

SECTION AT 4-4

(SCALE A)

SCALE A:-

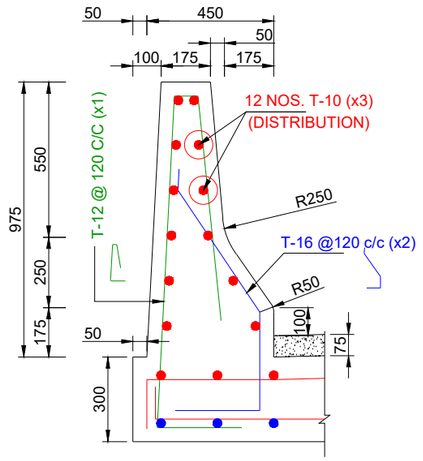



| | |
|---|---|
| Prepared by :- WAPCOS LTD. | |
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | SHARDA TYPE 0.457 M HT. FALL AT KM. 0.545 OF THUMBHI MR. (OFFTAKE RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ FALL 1 of 1 |



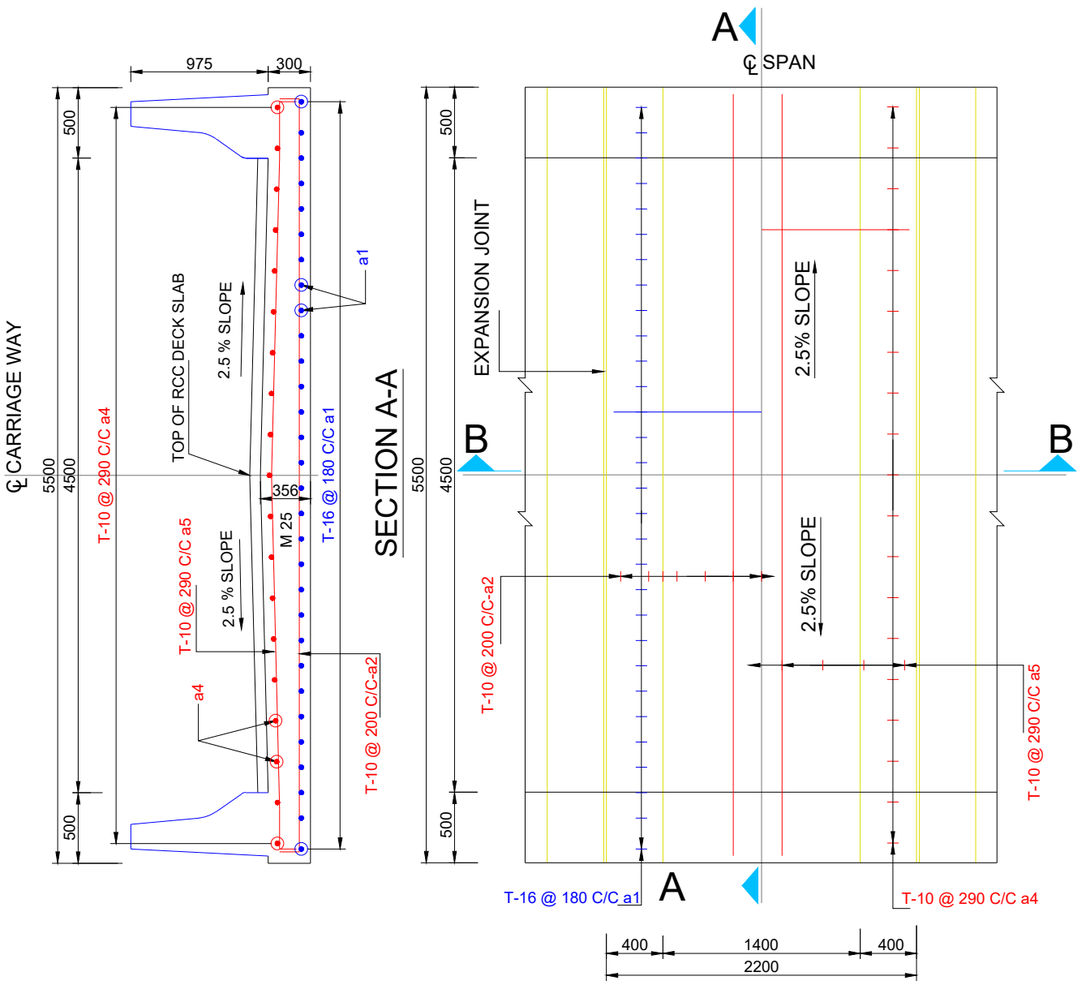

SECTION B-B

(SCALE A)




REINF. DETAILS OF CRASH BARRIER IN MAIN SLAB

(SCALE B)




BOTTOM REINFORCEMENT TOP REINFORCEMENT

PLAN SHOWING REINFORCEMENT DETAILS OF DECK SLAB

(SCALE A)

## BAR BENDING SCHEDULE

| S. No. | Type of bars | Shape of bars (not to scale) (Dimensions are in millimetres) | Dia of Bars (mm) | Spacing (mm) | Nos. of Bars |
|---|---|---|---|---|---|
| SLAB PER SPAN | | | | | |
| 1 | a1 | 200, R=80, 2100, 200 | 16 | 180 | 31 |
| 2 | a2 | 200, R=50, 5400, 200 | 10 | 200 | 11 |
| 3 | a3 | 5400 | 10 | - | 2 |
| 4 | a4 | 2100, 200, R=40, 200 | 10 | 290 | 19 |
| 5 | a5 | 200, 450, 2250, 2250, 450, 200 | 10 | 290 | 8 |
| CRASH BARRIER | | | | | |
| 1 | x1 | 75, 1176, 950, 300 | 12 | 120 | 18X2 |
| 2 | x2 | 75, 540, 350, 300 | 16 | 120 | 18X2 |
| 3 | x3 | 2100 | 12 | - | 10X2 |

## NOTES:-

1 ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.

2 THE DRAWING SHALL NOT BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.

3 ALL CONCRETE WORK SHALL CONFORM TO IS:456 - 2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

BRIDGE SLAB & PARAPET M-25

4. ALL REINFORCEMENT BARS SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (Fe 500) COMFORMING I.S. 1786.

5. MIN. CLEAR COVER TO ANY REINF. INCLUDING STIRRUPS SHALL BE 40 MM OR UNLESS OTHERWISE SPECIFIED.

6. THE COVER INDICATED IN THIS DRAWINGS IS CLEAR COVER TO MAIN REINFORCEMENT BARS NEAREST TO THE CONCRETE SURFACE INCLUDING STIRRUPS AND BINDERS UNLESS MENTIONED OTHERWISE.

7. BENDING OF REINF. BARS SHALL CONFORM TO I.S. 2502.

8. REINF. BARS SHALL BE CUT AND ADJUSTED TO ACCOMODATE DRAINAGE SPOUT.

9. 75 MM THK. WEARING COAT IN M-25 CC SHALL BE PROVIDED.

10. APPROACH SLAB & APPROACH SLAB SUPPORT SHALL BE DECIDED BY FIELD ENGINEERS ACCORDING TO THE SITE CONDITIONS.

11. TARFELT BEARING SHALL BE PROVIDED UNDER SLAB AT SUPPORT.

12. THE REINFORCEMENT OF CRASH BARRIER SHALL BE INCORPORATED BEFORE CASTING OF THE DECK SLAB.

13. 8 MM DIA BAR @ 200 C/C IN BOTH DIRECTION SHALL BE PROVIDED IN WEARING COAT AT MIDDLE DEPTH.

14. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF SMALLER BAR.

15. THE DEVELOPMENT LENGTH OF BARS ARE GIVEN BELOW:

DEVELOPMENT LENGTH FULLY STRESSED DEFORMED BARS (fy=500N/mm$^2$) (IS 456 CLAUSE 26.2.1)

| TENSION BARS GRADE OF CONCRETE | | | | COMPRESSION BARS GRADE OF CONCRETE | | | |
|---|---|---|---|---|---|---|---|
| M15 | M20 | M25 | M30 | M15 | M20 | M25 | M30 |
| 68.00 | 56.60 | 48.50 | 45.30 | 54.40 | 45.30 | 38.80 | 36.30 |
| 81.60 | 68.00 | 58.30 | 54.40 | 65.30 | 54.40 | 46.60 | 43.50 |
| 108.80 | 90.60 | 77.70 | 72.50 | 87.00 | 87.00 | 62.10 | 58.00 |
| 135.90 | 113.30 | 97.10 | 90.60 | 108.80 | 108.80 | 77.70 | 72.50 |
| 169.90 | 141.60 | 121.40 | 113.30 | 135.90 | 135.90 | 97.10 | 90.60 |
| 217.50 | 181.30 | 155.40 | 145.00 | 174.00 | 174.00 | 124.30 | 116.00 |

1. THE DEVELOPMENT LENGTHS GIVEN ABOVE ARE FOR A STRESS OF 0.87 fy IN THE BAR
2. THE DEVELOPMENT LENGTH INCLUDES ANCHORAGE VALUES OF HOOKS IN TENSION REINFORCEMENT.

16. LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR IS POSSIBLE IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOW WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50 % ONLY (IRC:112 - 2011) CLAUSE: 15.2.5.1)

LAP LENGTH = $\alpha$1. lbnet

WHERE, $\alpha$1 = 1.0 for p%≤25%

$\alpha$1 = 1.15 for 25%≤p%≤33%

$\alpha$1 = 1.4 for 33%≤p%≤50%

17. THE STRAIGHT LENGTH OF THE LAP SHOULD NOT BE LESS THAN 15Ø OR 200 MM (WHICH EVER IS MORE)

18. THE LAP LENGTH MUST BE AT LEAST EQUAL TO DEVELOPMENT LENGTH IN NO CASE, THE LAP LENGTH SHOULD BE LESS THAN 30Ø FOR FLEXURAL AND DIRECT TENSION AND 24Ø FOR COMPRESSION.

19. LAP SPLICES SHALL BE CONSIDERED AS STAGGERED IF THE C/C DISTANCE OF SPLICES IS NOT LESS THAN 1.3 TIMES THE LAP LENGTH CALCULATED.

20. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF SMALLER BAR.

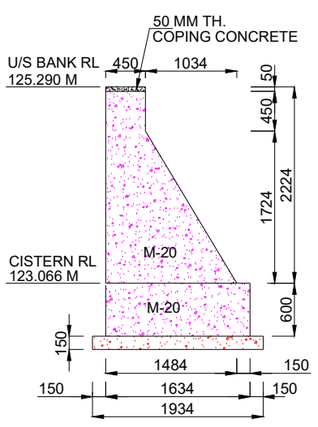
SCALE A:- 400 0 400 800 1200

SCALE B:- 200 0 200 400 600

Prepared by :-

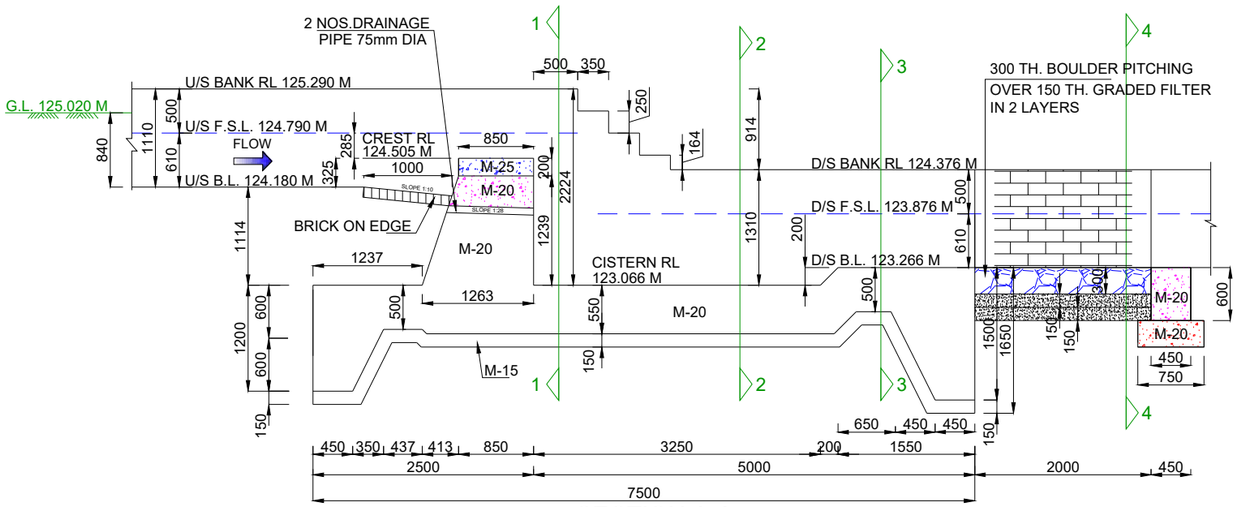
WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | REINFORCEMENT DETAILS OF SLAB FOR FALL CUM BRG. AT KM. 0.545 OF THUMBHI MR. (OFFTAKE RD - 7+260 KM. (L), MAHUARY SUB-DY CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ FALL 2 of 2 |



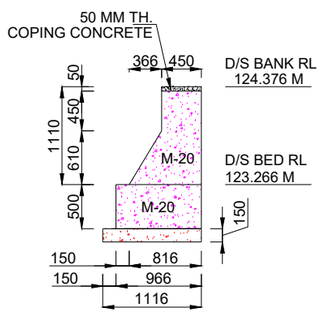

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

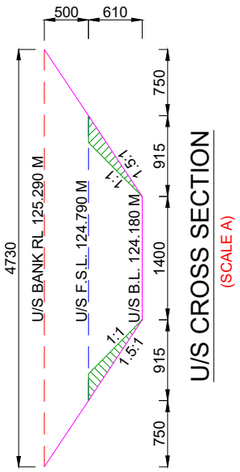
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

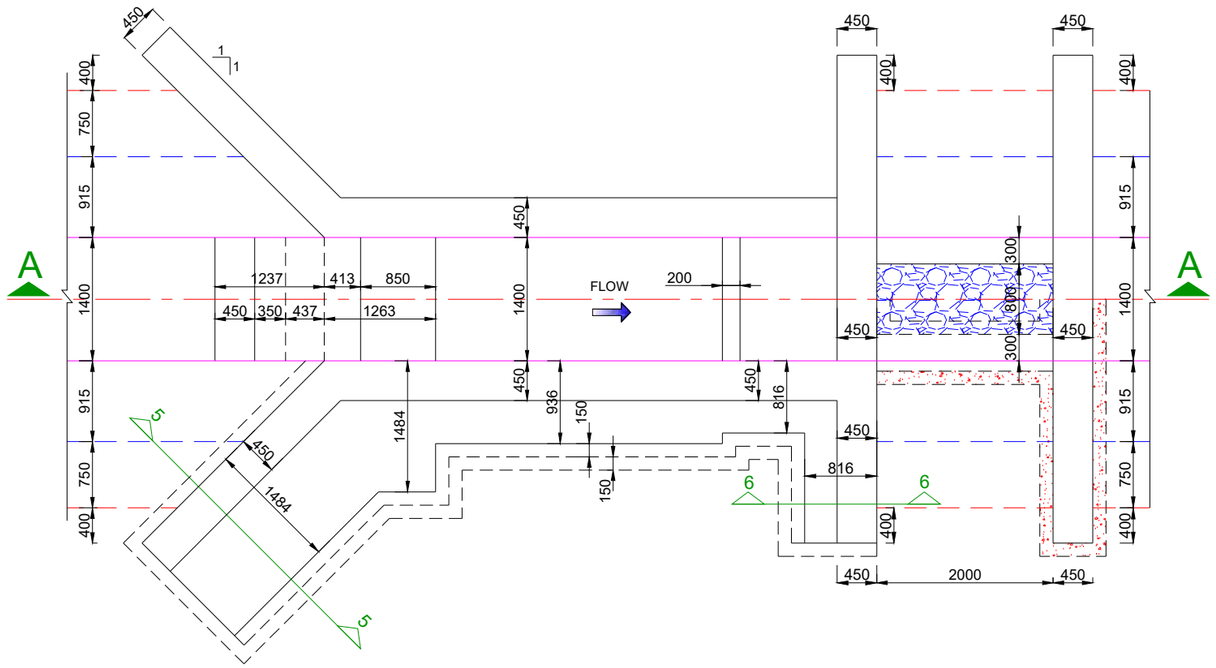
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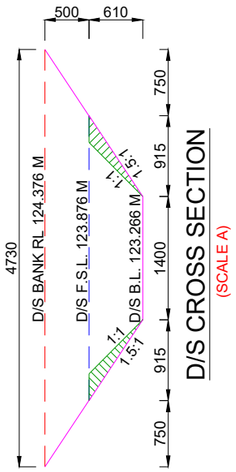
| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.350 | 0.350 | CUMEC |
| VERTICAL DROP | 0.914 | 0.914 | METRE |
| FULL SUPPLY DEPTH | 0.610 | 0.610 | METRE |
| BED WIDTH | 1.400 | 1.400 | METRE |
| BED SLOPE | 1 : 3500 | 1 : 3500 | |




U/S CROSS SECTION

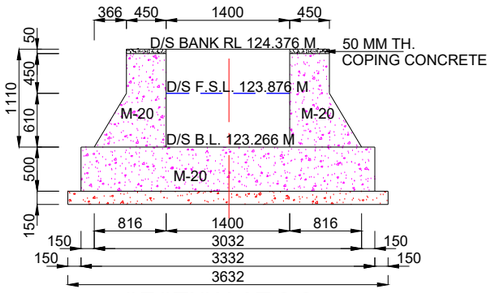
(SCALE A)



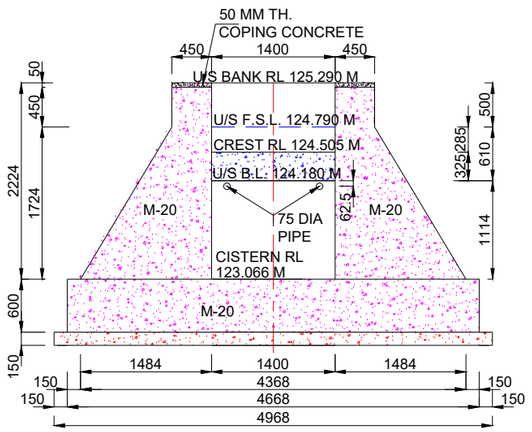

D/S CROSS SECTION

(SCALE A)



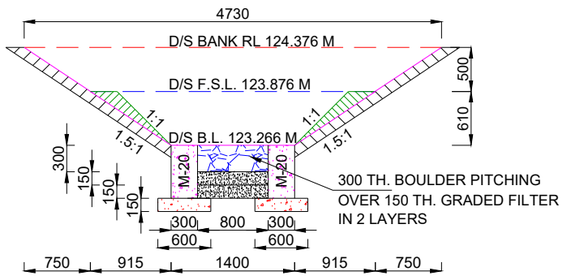

SECTION AT 3-3

(SCALE A)



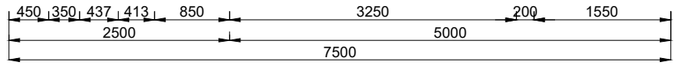

SECTION AT 1-1

(SCALE A)



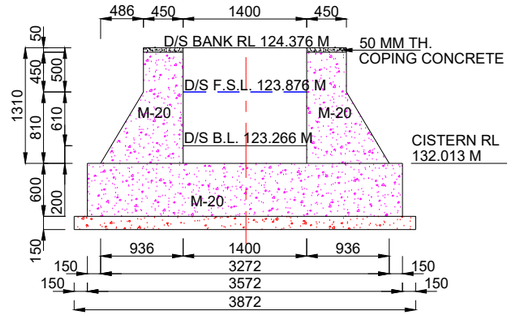

SECTION AT 4-4

(SCALE A)




HALF TOP / HALF FOUNDATION PLAN

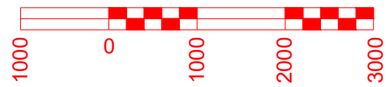
(SCALE A)




SECTION AT 2-2

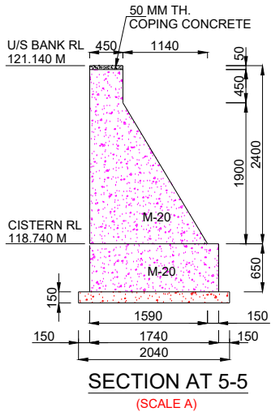
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SCALE A:-



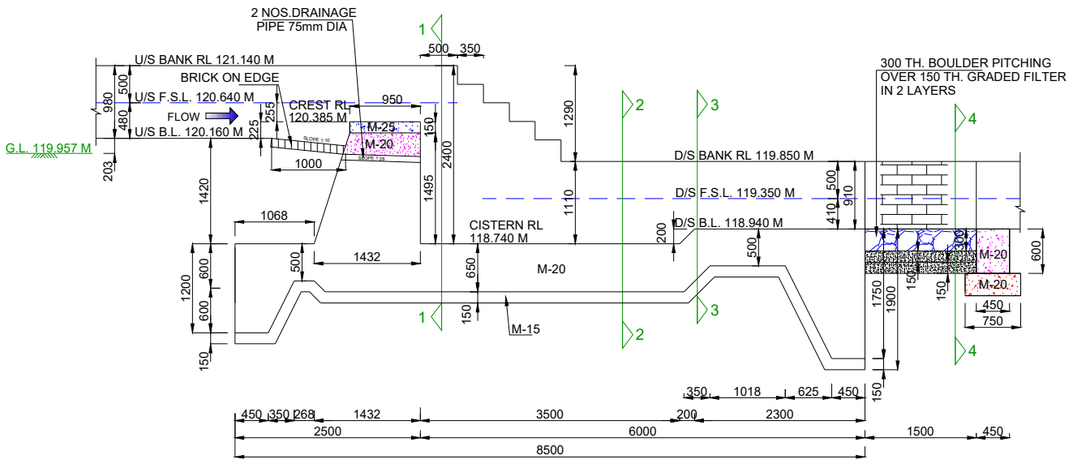

| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 0.914 M HT. FALL AT KM. 0.965 OF THUMBHI MR. (OFFTAKE RD - 7+260 KM. (L), MAHUARY SUB-DISTRIBUTARY CANAL) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/ FALL 1 of 1 |
| | . | . . |

330



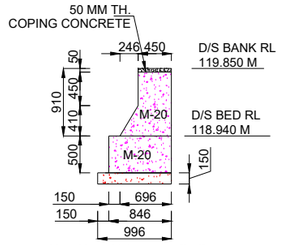

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

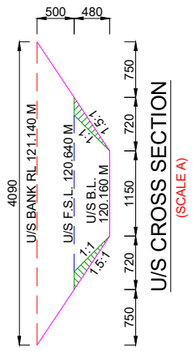
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3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

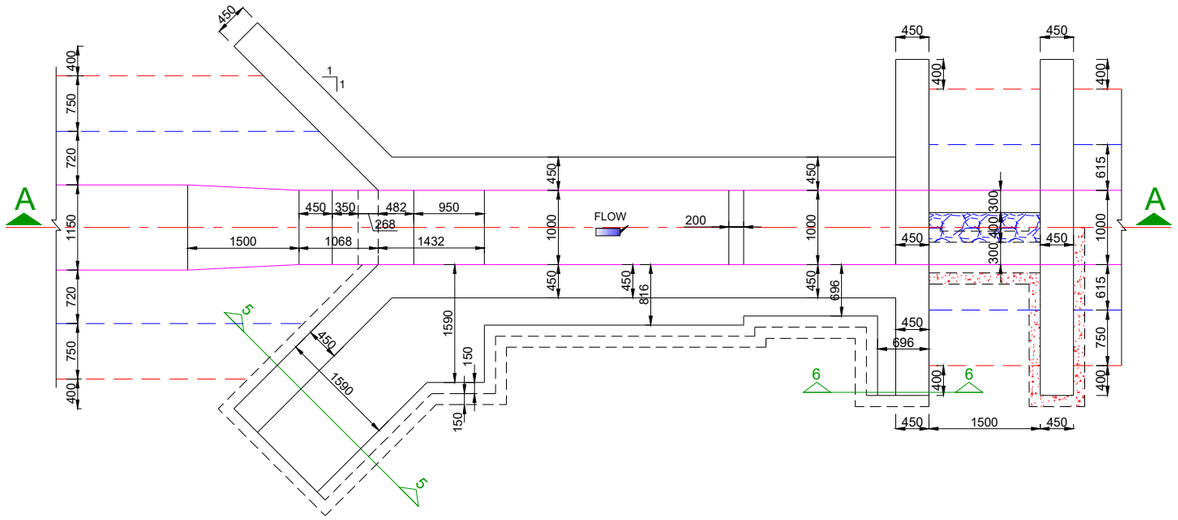
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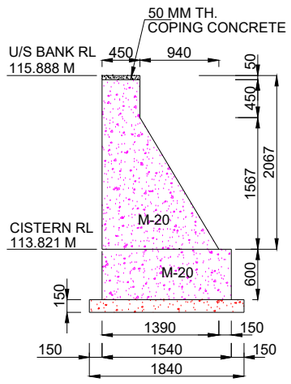
| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.200 | 0.200 | CUMEC |
| VERTICAL DROP | 1.220 | 1.220 | METRE |
| FULL SUPPLY DEPTH | 0.480 | 0.410 | METRE |
| BED WIDTH | 1.150 | 1.000 | METRE |
| BED SLOPE | 1 : 3400 | 1 : 3400 | |




U/S CROSS SECTION

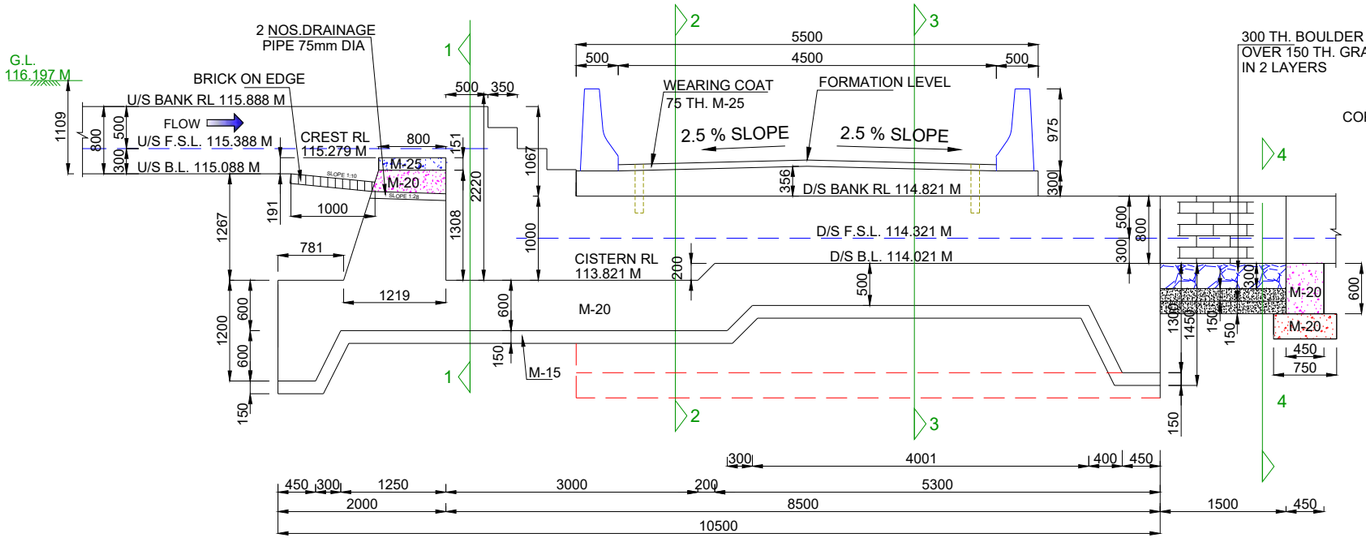
(SCALE A)


A
A
1
1
FLOW
200
450
350
482
950
268
1500
1068
1432
1000
450
816
696
1590
150
5
5
6
6
400
750
1150
720
450
1590
450
1500
450
450
450
400
615
1000
750
300
400
450
450
450



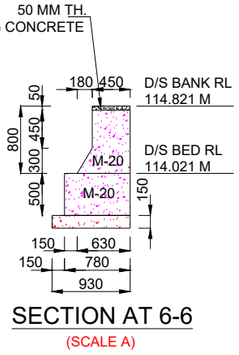

SECTION AT 5-5

(SCALE A)




SECTION A-A

(SCALE A)




SECTION AT 6-6

(SCALE A)

## NOTES:-

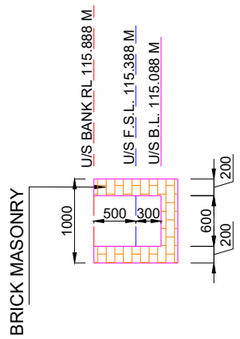
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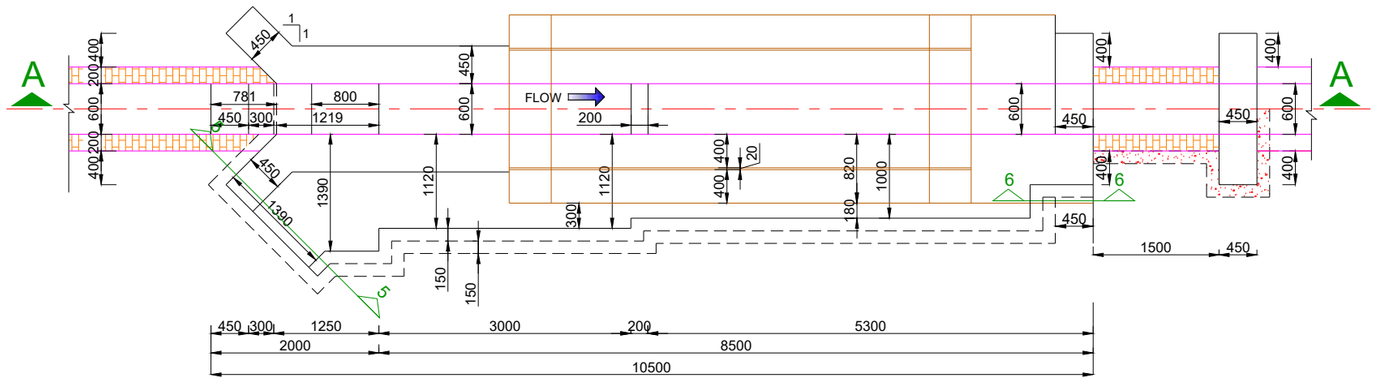
| | |
|---|---|
| FLOOR | M 20 |
| FOUNDATION OF ABUTMENTS & WING WALL | M 20 |
| PCC UNDER FLOOR | M 15 |
| ABUTMENTS / WING WALLS | M 20 |

4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

## HYDRAULIC:- DATA

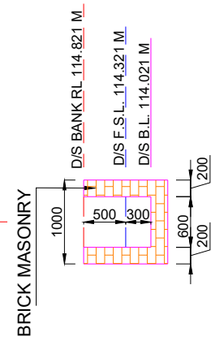
| | U/S | D/S | UNIT |
|---|---|---|---|
| FULL SUPPLY DISCHARGE | 0.030 | 0.030 | CUMEC |
| VERTICAL DROP | 1.067 | 1.067 | METRE |
| FULL SUPPLY DEPTH | 0.300 | 0.300 | METRE |
| BED WIDTH | 0.600 | 0.600 | METRE |
| BED SLOPE | 1 : 3000 | 1 : 3000 | |

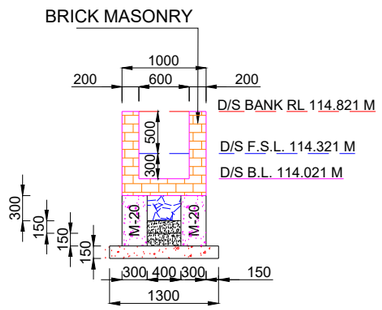



HALF TOP / HALF FOUNDATION PLAN

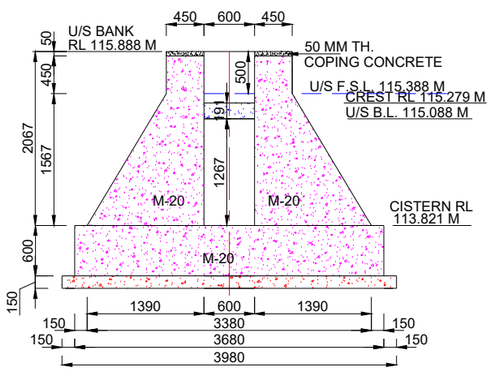
(SCALE A)



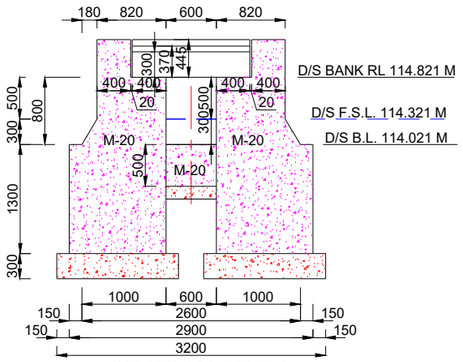

SECTION AT 4-4

(SCALE A)



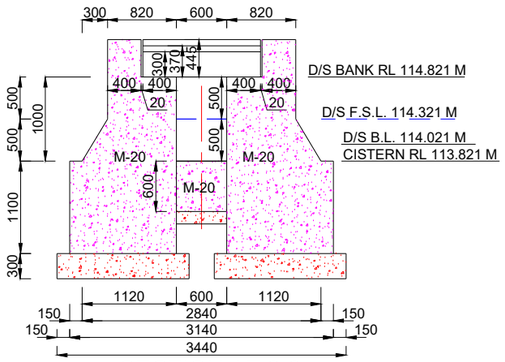

SECTION AT 1-1

(SCALE A)




SECTION AT 3-3

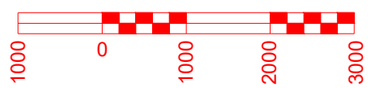
(SCALE A)



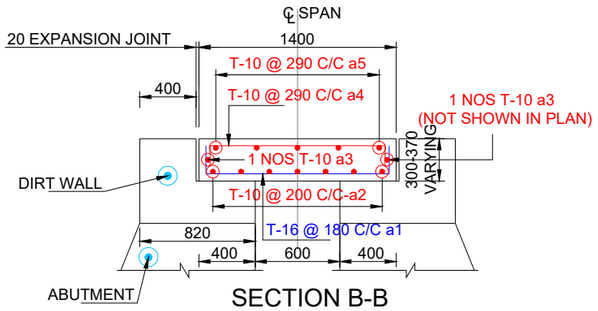

SECTION AT 2-2

(SCALE A)

SCALE A:-

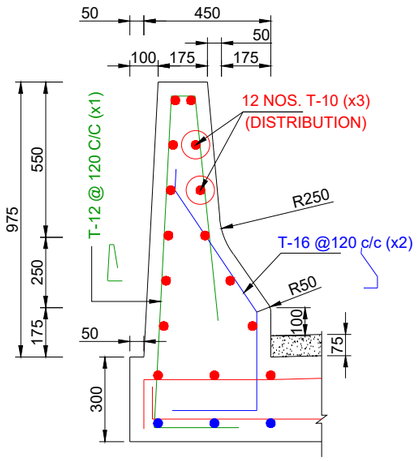



| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | SHARDA TYPE 1.067 M HT. FALL AT KM. 2.450 OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DY CANAL) |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-04-05/ FALL 1 of 1 |
| | . | . . |



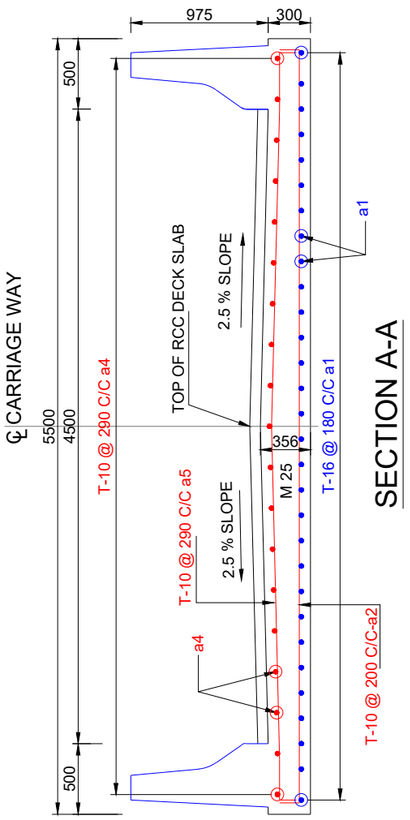

SECTION B-B

(SCALE A)

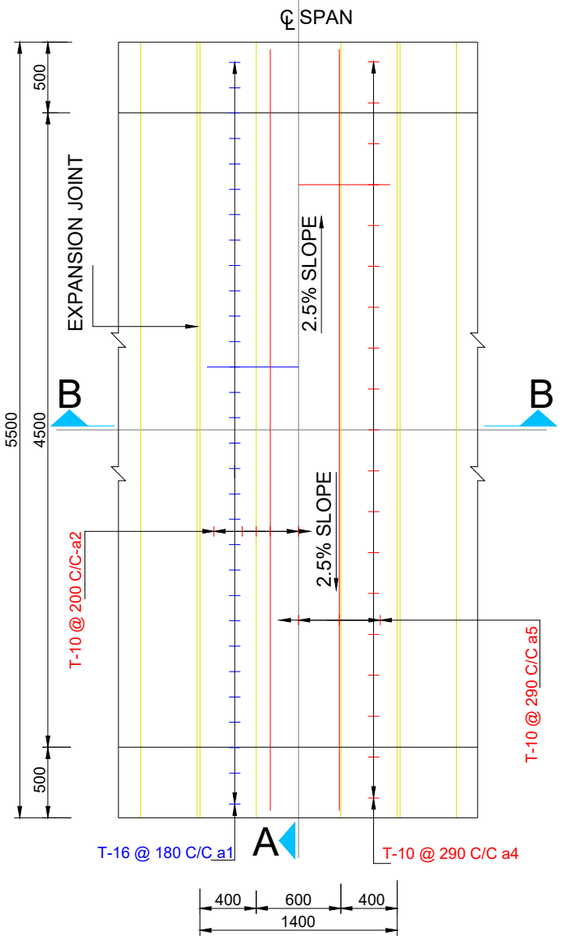



REINF. DETAILS OF CRASH BARRIER IN MAIN SLAB

(SCALE B)




SECTION A-A




BOTTOM REINFORCEMENT TOP REINFORCEMENT

PLAN SHOWING REINFORCEMENT DETAILS OF DECK SLAB

(SCALE A)

## BAR BENDING SCHEDULE

| S. No. | Type of bars | Shape of bars (not to scale) (Dimensions are in millimetres) | Dia of Bars (mm) | Spacing (mm) | Nos. of Bars |
|---|---|---|---|---|---|
| SLAB PER SPAN | | | | | |
| 1 | a1 | 200, R=80, 1300, 200 | 16 | 180 | 31 |
| 2 | a2 | 200, R=50, 5400, 200 | 10 | 200 | 7 |
| 3 | a3 | 5400 | 10 | - | 2 |
| 4 | a4 | 1300, 200, R=40, 200 | 10 | 290 | 19 |
| 5 | a5 | 200, 450, 2250, 2250, 450, 200 | 10 | 290 | 5 |
| CRASH BARRIER | | | | | |
| 1 | x1 | 75, 1176, 950, 300 | 12 | 120 | 11X2 |
| 2 | x2 | 75, 540, 350, 300 | 16 | 120 | 11X2 |
| 3 | x3 | 1300 | 12 | - | 10X2 |

## NOTES:-

1 ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.

2 THE DRAWING SHALL NOT BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.

3 ALL CONCRETE WORK SHALL CONFORM TO IS:456 - 2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,
BRIDGE SLAB & PARAPET M-25

4. ALL REINFORCEMENT BARS SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (Fe 500) COMFORMING I.S. 1786.

5. MIN. CLEAR COVER TO ANY REINF. INCLUDING STIRRUPS SHALL BE 40 MM OR UNLESS OTHERWISE SPECIFIED.

6. THE COVER INDICATED IN THIS DRAWINGS IS CLEAR COVER TO MAIN REINFORCEMENT BARS NEAREST TO THE CONCRETE SURFACE INCLUDING STIRRUPS AND BINDERS UNLESS MENTIONED OTHERWISE.

7. BENDING OF REINF. BARS SHALL CONFORM TO I.S. 2502.

8. REINF. BARS SHALL BE CUT AND ADJUSTED TO ACCOMODATE DRAINAGE SPOUT.

9. 75 MM THK. WEARING COAT IN M-25 CC SHALL BE PROVIDED.

10. APPROACH SLAB & APPROACH SLAB SUPPORT SHALL BE DECIDED BY FIELD ENGINEERS ACCORDING TO THE SITE CONDITIONS.

11. TARFELT BEARING SHALL BE PROVIDED UNDER SLAB AT SUPPORT.

12. THE REINFORCEMENT OF CRASH BARRIER SHALL BE INCORPORATED BEFORE CASTING OF THE DECK SLAB.

13. 8 MM DIA BAR @ 200 C/C IN BOTH DIRECTION SHALL BE PROVIDED IN WEARING COAT AT MIDDLE DEPTH.

14. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF SMALLER BAR.

15. THE DEVELOPMENT LENGTH OF BARS ARE GIVEN BELOW:

| DEVELOPMENT LENGTH FULLY STRESSED DEFORMED BARS (fy=500N/mm²) (IS 456 CLAUSE 26.2.1) | | | | | | | |
|---|---|---|---|---|---|---|---|
| TENSION BARS GRADE OF CONCRETE | | | | COMPRESSION BARS GRADE OF CONCRETE | | | |
| M15 | M20 | M25 | M30 | M15 | M20 | M25 | M30 |
| 68.00 | 56.60 | 48.50 | 45.30 | 54.40 | 45.30 | 38.80 | 36.30 |
| 81.60 | 68.00 | 58.30 | 54.40 | 65.30 | 54.40 | 46.60 | 43.50 |
| 108.80 | 90.60 | 77.70 | 72.50 | 87.00 | 87.00 | 62.10 | 58.00 |
| 135.90 | 113.30 | 97.10 | 90.60 | 108.80 | 108.80 | 77.70 | 72.50 |
| 169.90 | 141.60 | 121.40 | 113.30 | 135.90 | 135.90 | 97.10 | 90.60 |
| 217.50 | 181.30 | 155.40 | 145.00 | 174.00 | 174.00 | 124.30 | 116.00 |

1. THE DEVELOPMENT LENGTHS GIVEN ABOVE ARE FOR A STRESS OF 0.87 fy IN THE BAR
2. THE DEVELOPMENT LENGTH INCLUDES ANCHORAGE VALUES OF HOOKS IN TENSION REINFORCEMENT.

16. LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR IS POSSIBLE IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOW WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50 % ONLY (IRC:112 - 2011) CLAUSE: 15.2.5.1)
LAP LENGTH = $\alpha$1. lbnet
WHERE, $\alpha$1 = 1.0 for p%≤25%
$\alpha$1 = 1.15 for 25%≤p%≤33%
$\alpha$1 = 1.4 for 33%≤p%≤50%

17. THE STRAIGHT LENGTH OF THE LAP SHOULD NOT BE LESS THAN 15Ø OR 200 MM (WHICH EVER IS MORE)

18. THE LAP LENGTH MUST BE AT LEAST EQUAL TO DEVELOPMENT LENGTH IN NO CASE, THE LAP LENGTH SHOULD BE LESS THAN 30Ø FOR FLEXURAL AND DIRECT TENSION AND 24Ø FOR COMPRESSION.

19. LAP SPLICES SHALL BE CONSIDERED AS STAGGERED IF THE C/C DISTANCE OF SPLICES IS NOT LESS THAN 1.3 TIMES THE LAP LENGTH CALCULATED.

20. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF SMALLER BAR.

SCALE A:- 400 0 400 800 1200

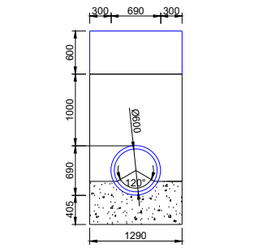
SCALE B:- 200 0 200 400 600



Prepared by :-

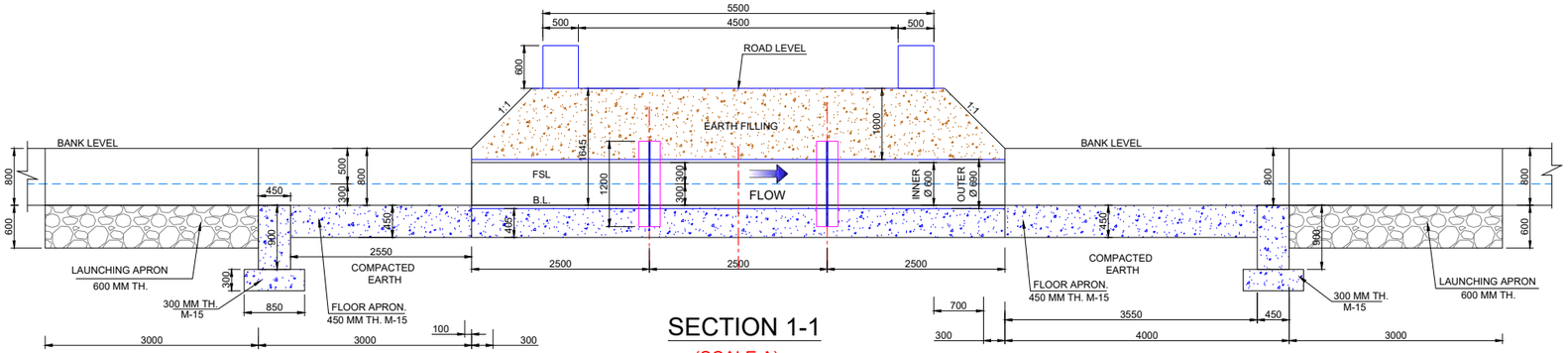
WAPCOS LTD.

| | |
|---|---|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| Drawing Title :- | REINFORCEMENT DETAILS OF SLAB FOR FALL CUM BRG. AT KM. 0.900 OF SOTHIDIH MR. (OFFTAKE FROM RD - 12+065 KM. (R), MAHUARY SUB-DY CANAL) |
| Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-02/ FALL 2 of 2 |
| . | . . |



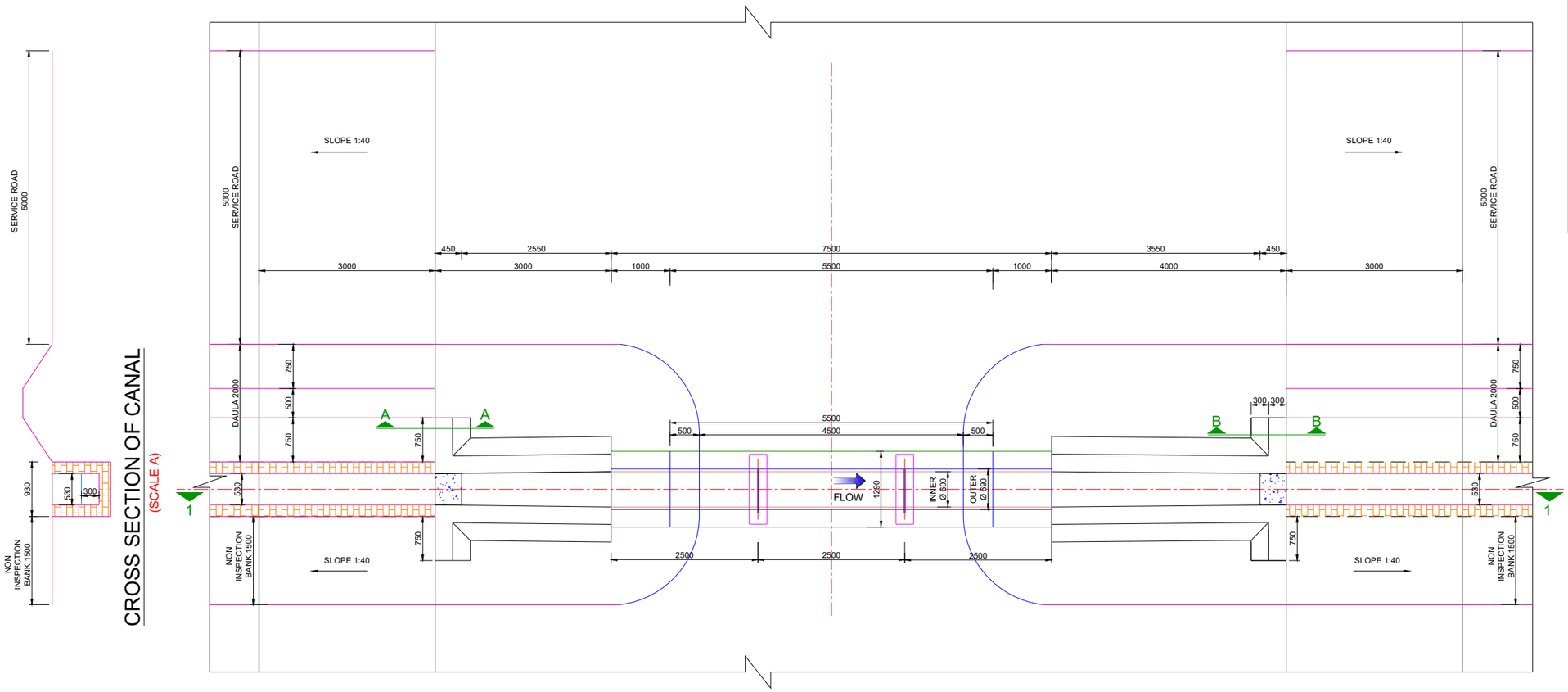

DETAILS OF JOINT OF PIPE

(SCALE A)




SECTION 1-1

(SCALE A)




LAYOUT PLAN

(SCALE A)

## DESIGN DATA:-

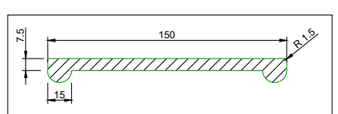
| | |
|---|---|
| DISCHARGE | 0.030 CUMEC |
| BED LEVEL | 116.123 M |
| BED WIDTH | 0.530 M |
| WATER DEPTH | 0.300 M |
| FREE BOARD | 0.500 M |
| CARRIAGE WAY | 5.500 M |
| NO. OF PIPE | 1 NOS. |
| SIDE SLOPE | 1 IN 1 |
| INTERNAL DIA OF PIPE | 0.600 M |

## NOTES :-

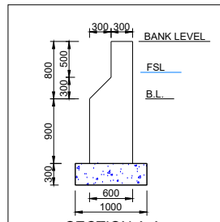
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT TO BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456, GRADE OF CONCRETE IN DIFFERENT COMPONENT SHALL BE
   TRANSITION WALL M-20
   BASE CONCRETE & CURTAIN WALL M-15

### TRANSITIONS WALL

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT TO BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. WEEP HOLES WITH A DIAMETER OF 80MM, SPACED AT 1500MM IN A STAGGERED ARRANGEMENT, SHALL BE PROVIDED IN THE TRANSITION WALL WITH A 1:20 SLOPE TOWARDS THE CANAL TO ENSURE PROPER DRAINAGE.
4. SKIN REINFORCEMENT OF 12 Ø @250 MM C/C FOR TEMPERATURE STRESSES SHALL BE PROVIDED IN TRANSITIONS WALL.
5. MIN. CLEAR COVER TO ANY REINF. INCLUDING STIRRUPS SHALL BE 50 MM OR UNLESS OTHERWISE SPECIFIED.



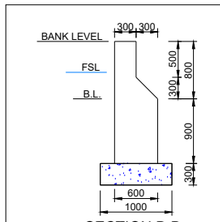

DETAILS OF TYPICAL WATER STOP FOR CONSTRUCTION JOINT




SECTION A-A

SECTION OF U/S TRANSITIONS

(SCALE A)




SECTION B-B

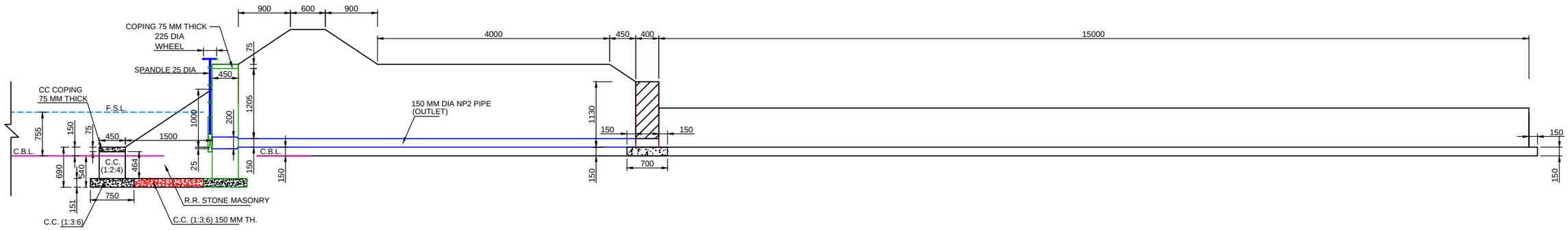
SECTION OF D/S TRANSITIONS

(SCALE A)

SCALE A:-

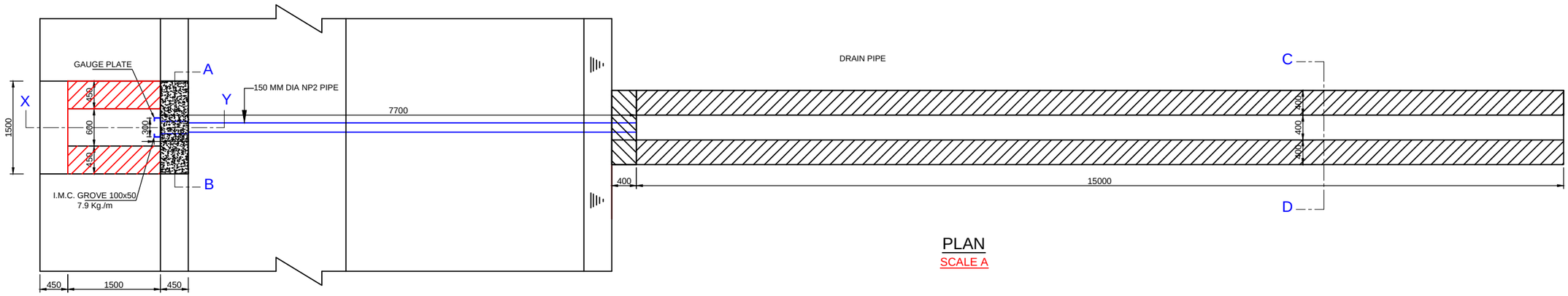
SCALE B:-

| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT KM 5.545 OF THUMBHI MR. |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ BC/ R-11-04/PIPE BRG. 1 of 1 |
| | Drawn by:- | Checked by:- / Approved by:- |

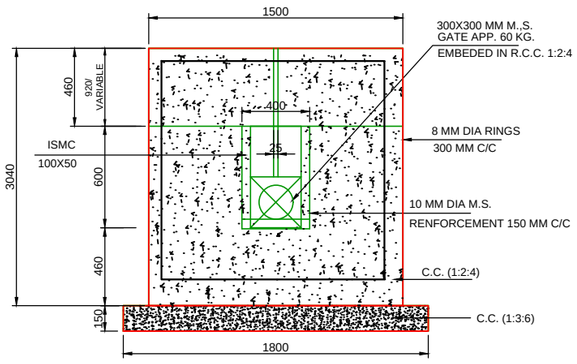



## SECTION X-Y
SCALE A

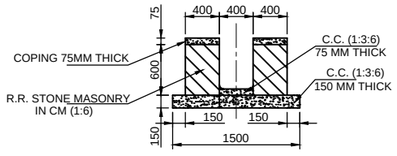
## ELEVATION
SCALE A




## PLAN
SCALE A




## SECTION A-B
SCALE B




## SECTION C-D
SCALE A

## NOTES

1. ALL DIMENSIONS ARE IN MM EXCEPT LEVELS IN METRES UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSION SHALL BE SCALED OFF.
2. ALL MASONRY WORKS SHALL BE DONE AS PER SPECIFICATION OF GOVT. OF JHARKHAND
3. THIS DWG. IS FOR OUTLET PIPE OF 150 MM DIA EMBEDED IN MASONRY.
4. 300X300 MM SIZE GATE SHALL BE FIXED IN ISMC. 100X50 FRAME.
5. THE GATE SHALL BE LIFTED THROUGH SPANDLE, THIS SPANDLE SHALL BE KEY LOCKED TO AVOID UNNECCESSARY OPERATION BY UN-AUTHORIZED PERSON.
6. THE 600 MM DIA DRAIN PIPE SHALL BE PROVIDED BELOW GULE DRAIN IF REQUIRED AT THE LOCATION.

SCALE A:- 0 1000 2000 3000 4000MM

SCALE B:- 0 2000 4000 6000 8000MM

| | | |
|---|---|---|
| Prepared by :- WAPCOS LTD. | Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |
| | Drawing Title :- | TYPICAL OUTLET DRAWING |
| | Drawing No. :- | WAP/ INFRA/ NORTHKOEL/ OUTLET 1 of 1 |
| | Drawn by:- | Checked by:- / Approved by:- |