TENDER DOCUMENT

FOR

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

Estimated Cost (Rs. 50.81 Crores)

TENDER NO: WAP/NK/RMC/DIST/AURANGABAD/2025

TENDER DRAWINGS

Issued to M/s

_____

WAPCOS

(भारत सरकार का उपक्रम-जल शक्ति मंत्रालय)

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

NORTH KOEL RESERVOIR PROJECT

FEBRUARY 2025

Completion of Balance Works of North Koel Reservoir Project

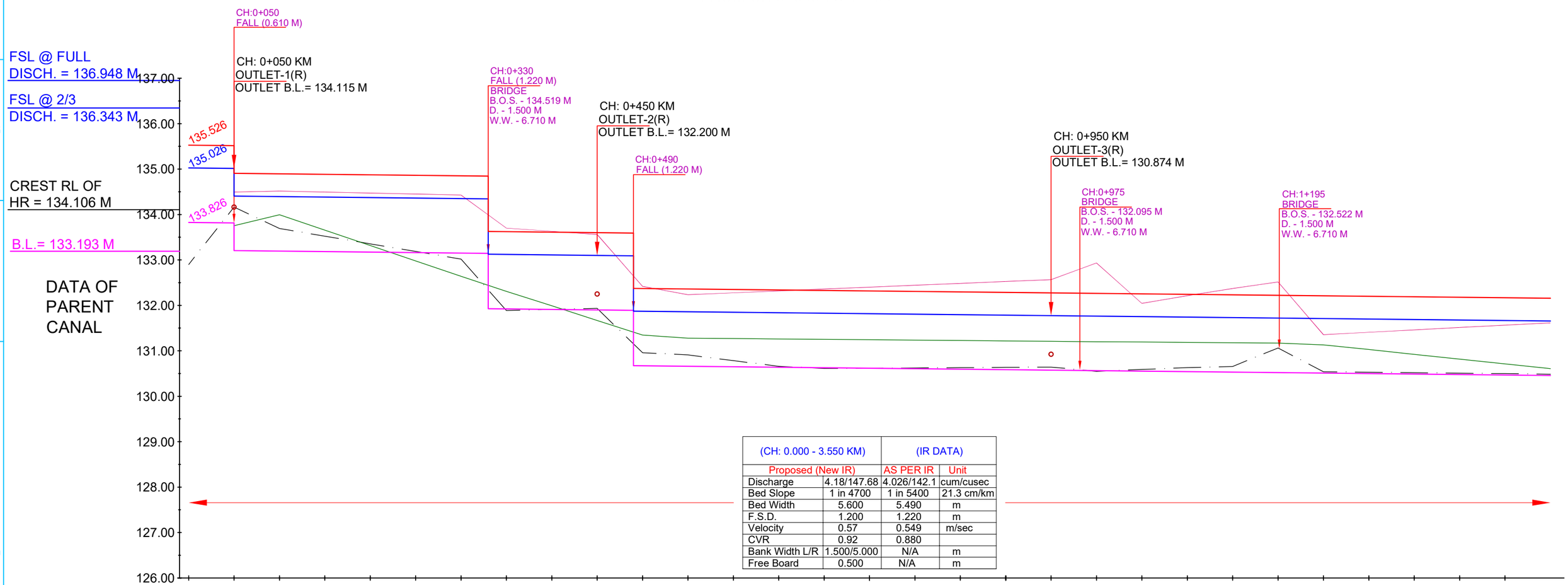
DRAWING REPORT – HETAMPUR DY.
(OFFTAKING FROM RIGHT MAIN CANAL AT 73.100 KM)

WAPCOS LIMITED
(GOVT. OF INDIA UNDERTAKING)
76- C SECTOR-18 INDUSTRIAL AREA,
GURUGRAM-122015 (HARYANA)

INDEX		
S.NO	**DESCRIPTION**	**PAGE NO.**

L-SECTION

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 0+000 TO 1+500



(CH: 0.000 - 3.550 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	4.18/147.68	4.026/142.1	cum/cusec
Bed Slope	1 in 4700	1 in 5400	21.3 cm/km
Bed Width	5.600	5.490	m
F.S.D.	1.200	1.220	m
Velocity	0.57	0.549	m/sec
CVR	0.92	0.880	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

DESIGN DATA	TOP OF BANK LEVEL	135.526	135.515 134.905	134.895	134.884	134.873	134.863	134.852	134.846 133.626 133.622	133.611	133.600	133.592 132.372 132.370	132.359	132.348	132.338	132.327	132.316	132.306	132.295	132.285	132.274	132.263	132.253	132.242	132.231	132.221	132.210	132.199	132.189	132.178	132.167	132.157
	F.S.L.	135.026	135.015 134.405	134.395	134.384	134.373	134.363	134.352	134.346 133.126 133.122	133.111	133.100	133.092 131.872 131.870	131.859	131.848	131.838	131.827	131.816	131.806	131.795	131.785	131.774	131.763	131.753	131.742	131.731	131.721	131.710	131.699	131.689	131.678	131.667	131.657
	Proposed Bed Level	133.826	133.815 133.205	133.195	133.184	133.173	133.163	133.152	133.146 131.926 131.922	131.911	131.900	131.892 130.672 130.670	130.659	130.648	130.638	130.627	130.616	130.606	130.595	130.585	130.574	130.563	130.553	130.542	130.531	130.521	130.510	130.499	130.489	130.478	130.467	130.457
EXISTING DATA	Bed Level	132.901	134.163	133.692	133.524	133.355	133.188	133.019	131.886	131.911	131.934	130.958	130.901	130.783	130.660	130.610	130.616	130.622	130.629	130.635	130.642	130.548	130.591	130.628	130.655	131.063	130.540	130.529	130.519	130.508	130.498	130.487
	TOP OF BANK LEVEL		134.493	134.516	134.495	134.473	134.451	134.429	133.700	133.631	133.562	132.419	132.236	132.277	132.319	132.360	132.402	132.443	132.485	132.526	132.568	132.935	132.043	132.212	132.371	132.517	131.356	131.408	131.460	131.513	131.564	131.616
	NSL		133.755	133.994	133.655	133.318	132.979	132.640	132.310	131.990	131.669	131.345	131.279	131.270	131.261	131.252	131.244	131.235	131.226	131.217	131.209	131.200	131.194	131.186	131.178	131.170	131.132	131.028	130.923	130.818	130.713	130.609
	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

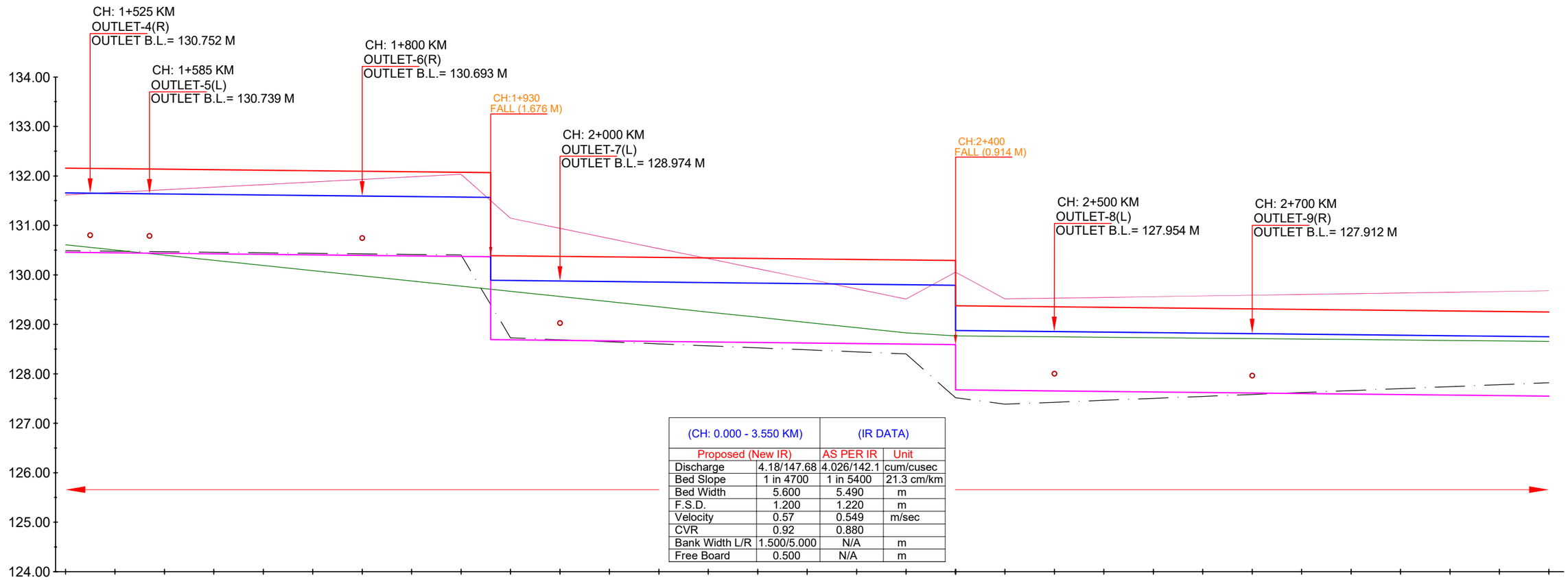
LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 01 of 11

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 1+500 TO 3+000



(CH: 0.000 - 3.550 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	4.18/147.68	4.026/142.1	cum/cusec
Bed Slope	1 in 4700	1 in 5400	21.3 cm/km
Bed Width	5.600	5.490	m
F.S.D.	1.200	1.220	m
Velocity	0.57	0.549	m/sec
CVR	0.92	0.880	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

	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
DESIGN DATA	TOP OF BANK LEVEL	132.157	132.152	132.146	132.139	132.136	132.125	132.114	132.104	132.093	132.082	132.072	132.065	130.389	130.385	130.374	130.364	130.353	130.343	130.332	130.321	130.311	130.300	130.289	129.375	129.365	129.354	129.343	129.333	129.322	129.312	129.301	129.290	129.280	129.269	129.258	129.248
	F.S.L.	131.657	131.652	131.646	131.639	131.636	131.625	131.614	131.604	131.593	131.582	131.572	131.565	129.889	129.885	129.874	129.864	129.853	129.843	129.832	129.821	129.811	129.800	129.789	128.875	128.865	128.854	128.843	128.833	128.822	128.812	128.801	128.790	128.780	128.769	128.758	128.748
	Proposed Bed Level	130.457	130.452	130.446	130.439	130.436	130.425	130.414	130.404	130.393	130.382	130.372	130.365	128.689	128.685	128.674	128.664	128.653	128.643	128.632	128.621	128.611	128.600	128.589	127.675	127.665	127.654	127.643	127.633	127.622	127.612	127.601	127.590	127.580	127.569	127.558	127.548
EXISTING DATA	Bed Level	130.487		130.477	130.466	130.456	130.446	130.435	130.425	130.414	130.404	128.727	128.687	128.646	128.605	128.565	128.524	128.485	128.443	128.403	127.515	127.386	127.424	127.465	127.503	127.543	127.582	127.621	127.661	127.700	127.740	127.779	127.818
	TOP OF BANK LEVEL	131.616		131.669	131.721	131.773	131.825	131.878	131.930	131.982	132.034	131.145	130.940	130.736	130.532	130.328	130.124	129.920	129.716	129.511	130.056	129.514	129.529	129.544	129.559	129.574	129.589	129.604	129.619	129.634	129.649	129.664	129.679
	NSL	130.609	130.504	130.399	130.295	130.190	130.085	129.980	129.876	129.771	129.667	129.562	129.457	129.352	129.247	129.143	129.038	128.933	128.828	128.766	128.757	128.748	128.738	128.729	128.720	128.711	128.702	128.693	128.683	128.674	128.665	128.656

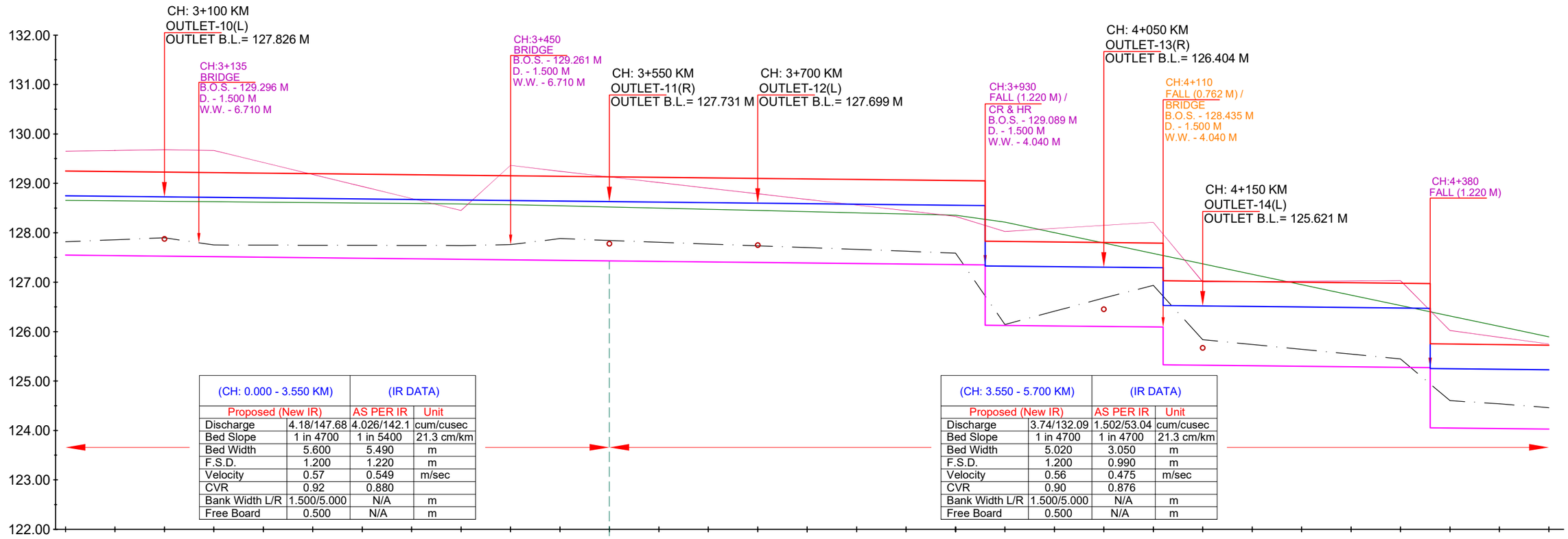
LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 02 of 11

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 3+000 TO 4+500



(CH: 0.000 - 3.550 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	4.18/147.68	4.026/142.1	cum/cusec
Bed Slope	1 in 4700	1 in 5400	21.3 cm/km
Bed Width	5.600	5.490	m
F.S.D.	1.200	1.220	m
Velocity	0.57	0.549	m/sec
CVR	0.92	0.880	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

(CH: 3.550 - 5.700 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	3.74/132.09	1.502/53.04	cum/cusec
Bed Slope	1 in 4700	1 in 4700	21.3 cm/km
Bed Width	5.020	3.050	m
F.S.D.	1.200	0.990	m
Velocity	0.56	0.475	m/sec
CVR	0.90	0.876	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

	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
DESIGN DATA	TOP OF BANK LEVEL	129.248	129.237	129.226	129.216	129.205	129.195	129.184	129.173	129.163	129.152	129.141	129.131	129.120	129.109	129.099	129.088	129.077	129.067	129.056	129.050 127.830 127.826	127.815	127.804	127.794 127.792 127.030	127.021	127.010	127.000	126.989	126.978	126.972 125.752 125.748	125.737	125.727
	F.S.L.	128.748	128.737	128.726	128.716	128.705	128.695	128.684	128.673	128.663	128.652	128.641	128.631	128.620	128.609	128.599	128.588	128.577	128.567	128.556	128.550 127.330 127.326	127.315	127.304	127.294 127.292 126.530	126.521	126.510	126.500	126.489	126.478	126.472 125.252 125.248	125.237	125.227
	Proposed Bed Level	127.548	127.537	127.526	127.516	127.505	127.495	127.484	127.473	127.463	127.452	127.441	127.431	127.420	127.409	127.399	127.388	127.377	127.367	127.356	127.350 126.130 126.126	126.115	126.104	126.094 126.092 125.330	125.321	125.310	125.300	125.289	125.278	125.272 124.052 124.048	124.037	124.027
EXISTING DATA	Bed Level	127.818	127.858	127.897	127.752	127.749	127.748	127.745	127.744	127.741	127.761	127.882	127.845	127.808	127.772	127.735	127.698	127.662	127.626	127.589	126.143	126.412	126.680	126.935	125.836	125.739	125.642	125.544	125.447	124.603	124.539	124.460
	TOP OF BANK LEVEL	129.679	129.694	129.709	129.693	129.450	129.207	128.964	128.722	128.478	129.392	129.272	129.158	129.044	128.930	128.816	128.702	128.588	128.474	128.360	128.055	128.116	128.178	128.239	127.034	127.040	127.047	127.053	127.059	126.050	125.914	125.778
	NSL	128.656	128.647	128.637	128.628	128.619	128.610	128.601	128.592	128.583	128.569	128.545	128.522	128.498	128.474	128.451	128.427	128.403	128.379	128.356	128.214	128.002	127.792	127.581	127.370	127.160	126.949	126.739	126.528	126.317	126.107	125.896

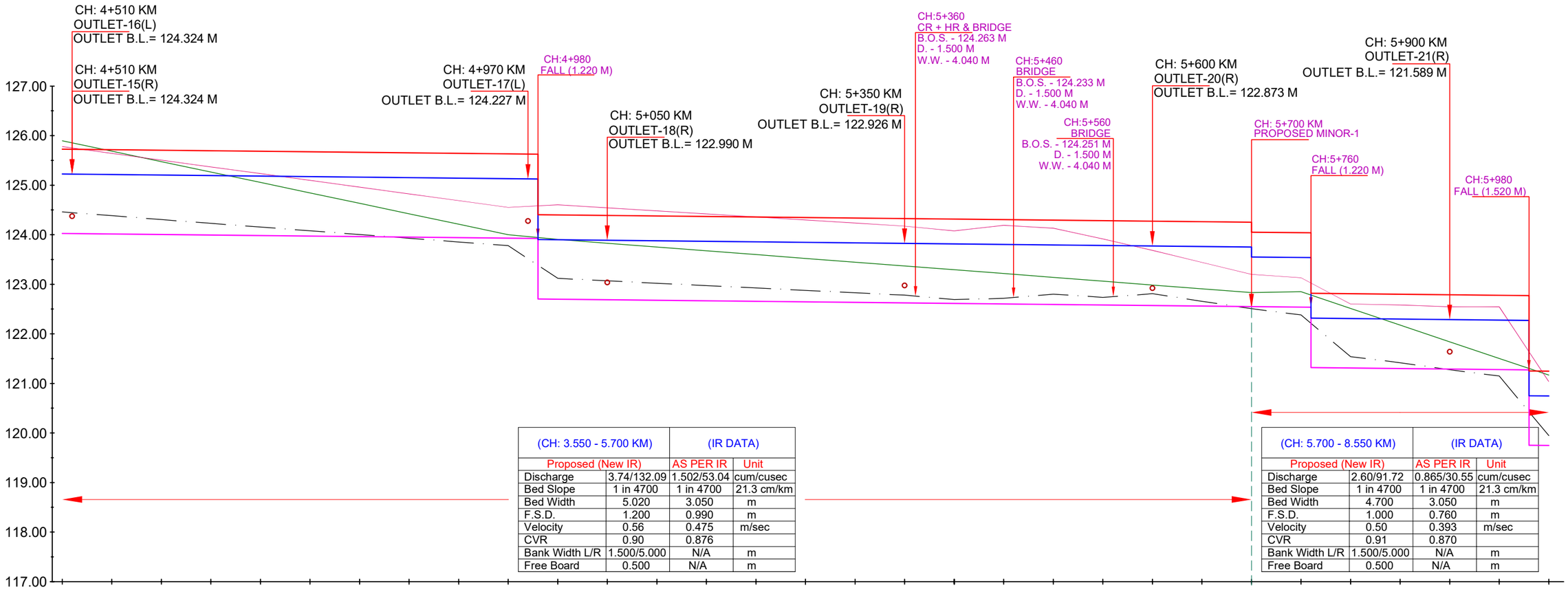
LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 03 of 11

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 4+500 TO 6+000



(CH: 3.550 - 5.700 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	3.74/132.09	1.502/53.04	cum/cusec
Bed Slope	1 in 4700	1 in 4700	21.3 cm/km
Bed Width	5.020	3.050	m
F.S.D.	1.200	0.990	m
Velocity	0.56	0.475	m/sec
CVR	0.90	0.876	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

(CH: 5.700 - 8.550 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	2.60/91.72	0.865/30.55	cum/cusec
Bed Slope	1 in 4700	1 in 4700	21.3 cm/km
Bed Width	4.700	3.050	m
F.S.D.	1.000	0.760	m
Velocity	0.50	0.393	m/sec
CVR	0.91	0.870	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

DESIGN DATA	TOP OF BANK LEVEL	125.727 125.724	125.716	125.705	125.695	125.684	125.673	125.663	125.652	125.641	125.631	125.627 125.624 124.404 124.400	124.390	124.379	124.368	124.358	124.347	124.336	124.326	124.315	124.304	124.294	124.283	124.273	124.262	124.251 124.051	124.041 123.038 122.318	122.810	122.799	122.789	122.778	122.772 121.252 121.247
	F.S.L.	125.227 125.224	125.216	125.205	125.195	125.184	125.173	125.163	125.152	125.141	125.131	125.127 125.124 123.904 123.900	123.890	123.879	123.868	123.858	123.847	123.836	123.826	123.815	123.804	123.794	123.783	123.773	123.762	123.751 123.551	123.541 123.538 122.318	122.310	122.299	122.289	122.278	122.272 120.752 120.747
	Proposed Bed Level	124.027 124.024	124.016	124.005	123.995	123.984	123.973	123.963	123.952	123.941	123.931	123.927 123.924 122.704 122.700	122.690	122.679	122.668	122.658	122.647	122.636	122.626	122.615	122.604	122.594	122.583	122.573	122.562	122.551	122.541 122.538 121.318	121.310	121.299	121.289	121.278	121.272 119.752 119.747
EXISTING DATA	Bed Level	124.460	124.386	124.305	124.230	124.155	124.080	124.004	123.930	123.854	123.780	123.120	123.070	123.022	122.974	122.925	122.878	122.828	122.781	122.691	122.716	122.802	122.736	122.810	122.658	122.508	122.381	121.541	121.418	121.276	121.150	119.947
	TOP OF BANK LEVEL	125.778	125.642	125.505	125.369	125.233	125.097	124.960	124.824	124.688	124.552	124.603	124.542	124.481	124.419	124.358	124.297	124.235	124.174	124.078	124.189	124.133	123.917	123.684	123.442	123.200	123.132	122.602	122.583	122.565	122.546	121.036
	NSL	125.896	125.686	125.476	125.265	125.055	124.844	124.634	124.423	124.213	124.002	123.905	123.829	123.753	123.676	123.600	123.523	123.447	123.371	123.294	123.217	123.140	123.063	122.986	122.910	122.834	122.850	122.514	122.176	121.840	121.503	121.168
	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	5+950	6+000

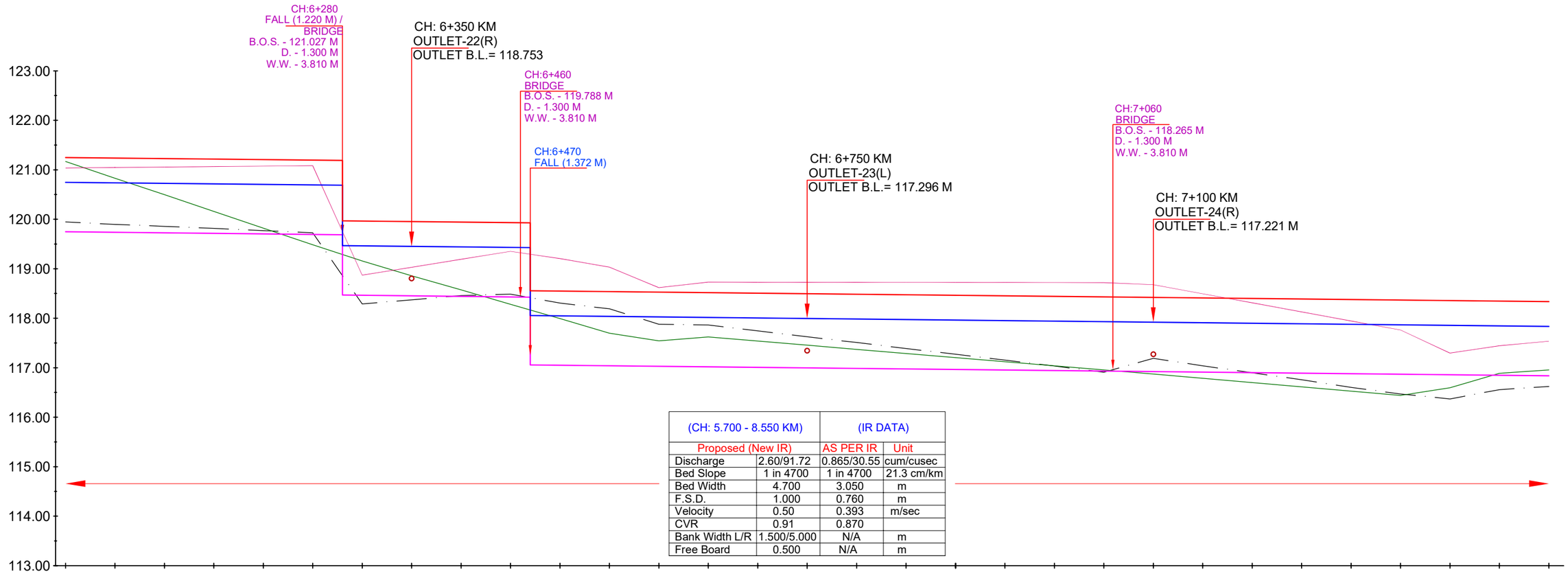
LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 04 of 11

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 6+000 TO 7+500



(CH: 5.700 - 8.550 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	2.60/91.72	0.865/30.55	cum/cusec
Bed Slope	1 in 4700	1 in 4700	21.3 cm/km
Bed Width	4.700	3.050	m
F.S.D.	1.000	0.760	m
Velocity	0.50	0.393	m/sec
CVR	0.91	0.870	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

DESIGN DATA	TOP OF BANK LEVEL	121.247	121.237	121.226	121.215	121.205	121.194	121.188 119.968 119.964	119.953	119.942	119.932	119.927 118.555	118.549	118.538	118.528	118.517	118.506	118.496	118.485	118.475	118.464	118.453	118.443	118.432	118.421	118.411	118.400	118.389	118.379	118.368	118.358	118.347	118.336
	F.S.L.	120.747	120.737	120.726	120.715	120.705	120.694	120.688 119.468 119.464	119.453	119.442	119.432	119.427 118.055	118.049	118.038	118.028	118.017	118.006	117.996	117.985	117.975	117.964	117.953	117.943	117.932	117.921	117.911	117.900	117.889	117.879	117.868	117.858	117.847	117.836
	Proposed Bed Level	119.747	119.737	119.726	119.715	119.705	119.694	119.688 118.468 118.464	118.453	118.442	118.432	118.427 117.055	117.049	117.038	117.028	117.017	117.006	116.996	116.985	116.975	116.964	116.953	116.943	116.932	116.921	116.911	116.900	116.889	116.879	116.868	116.858	116.847	116.836
EXISTING DATA	Bed Level	119.947	119.897	119.857	119.815	119.771	119.727	118.289	118.372	118.457	118.488		118.306	118.190	117.879	117.863	117.744	117.625	117.509	117.389	117.272	117.154	117.035	116.909	117.189	117.039	116.898	116.757	116.602	116.470	116.369	116.557	116.620
	TOP OF BANK LEVEL	121.036	121.046	121.056	121.066	121.075	121.085	118.870	119.031	119.191	119.352		119.206	119.032	118.619	118.729	118.728	118.727	118.726	118.725	118.723	118.723	118.722	118.720	118.678	118.495	118.312	118.129	117.946	117.763	117.297	117.443	117.536
	NSL	121.168	120.831	120.495	120.159	119.822	119.486	119.156	118.865	118.575	118.280		117.993	117.699	117.543	117.621	117.538	117.455	117.371	117.288	117.205	117.122	117.039	116.957	116.871	116.785	116.699	116.613	116.527	116.441	116.594	116.886	116.955
	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+300	7+350	7+400	7+450	7+500

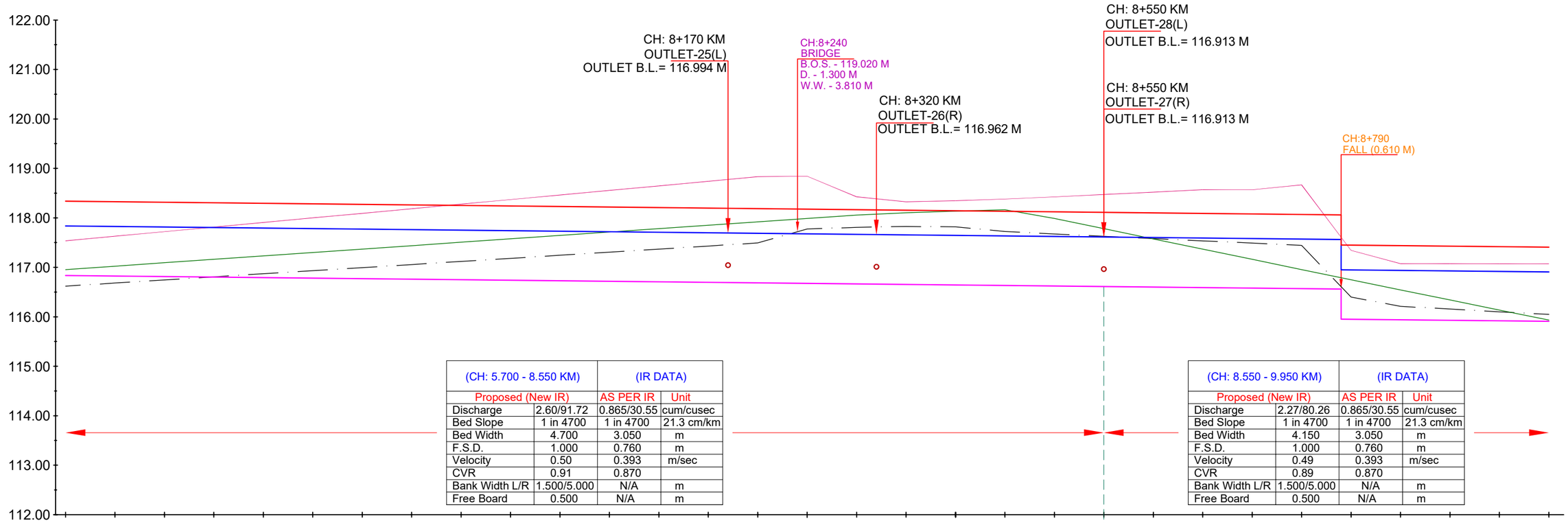
LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 05 of 11

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 7+500 TO 9+000



(CH: 5.700 - 8.550 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	2.60/91.72	0.865/30.55	cum/cusec
Bed Slope	1 in 4700	1 in 4700	21.3 cm/km
Bed Width	4.700	3.050	m
F.S.D.	1.000	0.760	m
Velocity	0.50	0.393	m/sec
CVR	0.91	0.870	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

(CH: 8.550 - 9.950 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	2.27/80.26	0.865/30.55	cum/cusec
Bed Slope	1 in 4700	1 in 4700	21.3 cm/km
Bed Width	4.150	3.050	m
F.S.D.	1.000	0.760	m
Velocity	0.49	0.393	m/sec
CVR	0.89	0.870	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

	Chainage IN KM	TOP OF BANK LEVEL	F.S.L.	Proposed Bed Level	Bed Level	TOP OF BANK LEVEL	NSL
DESIGN DATA / EXISTING DATA	7+500	118.336	117.836	116.836	116.620	117.536	116.955
	7+550	118.326	117.826	116.826	116.682	117.628	117.024
	7+600	118.315	117.815	116.815	116.745	117.721	117.093
	7+650	118.304	117.804	116.804	116.807	117.814	117.162
	7+700	118.294	117.794	116.794	116.870	117.906	117.231
	7+750	118.283	117.783	116.783	116.931	117.999	117.300
	7+800	118.272	117.772	116.772	116.994	118.092	117.369
	7+850	118.262	117.762	116.762	117.056	118.184	117.438
	7+900	118.251	117.751	116.751	117.119	118.277	117.507
	7+950	118.241	117.741	116.741	117.181	118.370	117.576
	8+000	118.230	117.730	116.730	117.244	118.462	117.645
	8+050	118.219	117.719	116.719	117.306	118.554	117.714
	8+100	118.209	117.709	116.709	117.368	118.647	117.783
	8+150	118.198	117.698	116.698	117.431	118.740	117.852
	8+200	118.194	117.694	116.694	117.493	118.832	117.921
	8+250	118.187	117.687	116.687	117.777	118.842	117.989
	8+300	118.177	117.677	116.677	117.807	118.425	118.058
	8+350	118.166	117.666	116.666	117.826	118.326	118.105
	8+400	118.162	117.662	116.662	117.819	118.347	118.135
	8+450	118.155	117.655	116.655	117.725	118.381	118.166
	8+500	118.145	117.645	116.645	117.674	118.424	117.988
	8+550	118.134	117.634	116.634	117.627	118.472	117.781
	8+600	118.123	117.623	116.623	117.581	118.521	117.575
	8+650	118.113	117.613	116.613	117.535	118.570	117.368
	8+700	118.102	117.602	116.602	117.490	118.568	117.161
	8+750	118.092	117.592	116.592	117.444	118.666	116.955
	8+800	118.081	117.581	116.581	116.400	117.344	116.750
	8+850	118.070	117.570	116.570	116.211	117.075	116.543
	8+900	118.062 117.452 117.450	117.562 116.952 116.950	116.562 115.952 115.950	116.139	117.073	116.340
	8+950	117.439	116.939	115.939	116.100	117.072	116.137
	9+000	117.428	116.928	115.928	116.048	117.071	115.933
		117.418	116.918	115.918			
		117.407	116.907	115.907			

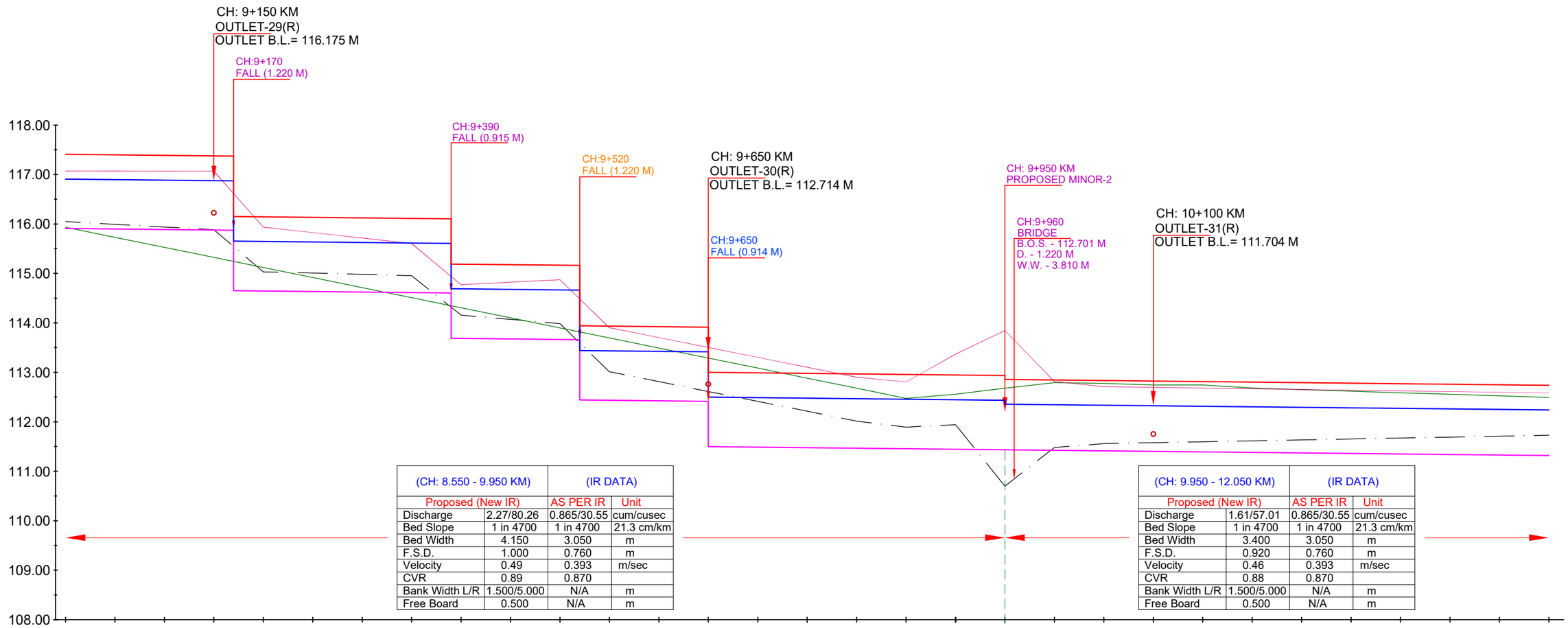
LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 06 of 11

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 9+000 TO 10+500



(CH: 8.550 - 9.950 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	2.27/80.26	0.865/30.55	cum/cusec
Bed Slope	1 in 4700	1 in 4700	21.3 cm/km
Bed Width	4.150	3.050	m
F.S.D.	1.000	0.760	m
Velocity	0.49	0.393	m/sec
CVR	0.89	0.870	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

(CH: 9.950 - 12.050 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	1.61/57.01	0.865/30.55	cum/cusec
Bed Slope	1 in 4700	1 in 4700	21.3 cm/km
Bed Width	3.400	3.050	m
F.S.D.	0.920	0.760	m
Velocity	0.46	0.393	m/sec
CVR	0.88	0.870	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

	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
DESIGN DATA	TOP OF BANK LEVEL	117.407	117.396	117.386	117.375	117.371 116.151	116.145	116.134	116.123	116.113	116.104 115.189 115.187	115.176	115.166	115.161 113.941	113.935	113.924	113.914 113.000	112.989	112.979	112.968	112.957	112.947	112.936 112.856	112.845	112.835	112.824	112.813	112.803	112.792	112.782	112.771	112.760	112.750	112.739
DESIGN DATA	F.S.L.	116.907	116.896	116.886	116.875	116.871 115.651	115.645	115.634	115.623	115.613	115.604 114.689 114.687	114.676	114.666	114.661 113.441	113.435	113.424	113.414 112.500	112.489	112.479	112.468	112.457	112.447	112.436 112.356	112.345	112.335	112.324	112.313	112.303	112.292	112.282	112.271	112.260	112.250	112.239
DESIGN DATA	Proposed Bed Level	115.907	115.896	115.886	115.875	115.871 114.651	114.645	114.634	114.623	114.613	114.604 113.689 113.687	113.676	113.666	113.661 112.441	112.435	112.424	112.414 111.500	111.489	111.479	111.468	111.457	111.447	111.436	111.425	111.415	111.404	111.393	111.383	111.372	111.362	111.351	111.340	111.330	111.319
EXISTING DATA	Bed Level	116.048	115.992	115.937	115.885	115.031	115.008	114.984	114.953	114.156	114.070	113.983	113.013	112.813	112.613	112.414	112.214	112.014	111.892	111.943	110.699	111.481	111.559	111.578	111.597	111.615	111.634	111.653	111.671	111.690	111.709	111.728
EXISTING DATA	TOP OF BANK LEVEL	117.071	117.069	117.068	117.067	115.936	115.826	115.715	115.604	114.773	114.822	114.872	113.903	113.703	113.503	113.303	113.102	112.903	112.806	113.366	113.846	112.814	112.710	112.696	112.682	112.667	112.653	112.639	112.625	112.611	112.597	112.583
EXISTING DATA	NSL	115.933	115.730	115.526	115.323	115.119	114.916	114.713	114.509	114.305	114.102	113.899	113.695	113.492	113.289	113.086	112.883	112.680	112.476	112.559	112.680	112.790	112.776	112.745	112.713	112.682	112.650	112.619	112.587	112.556	112.524	112.493

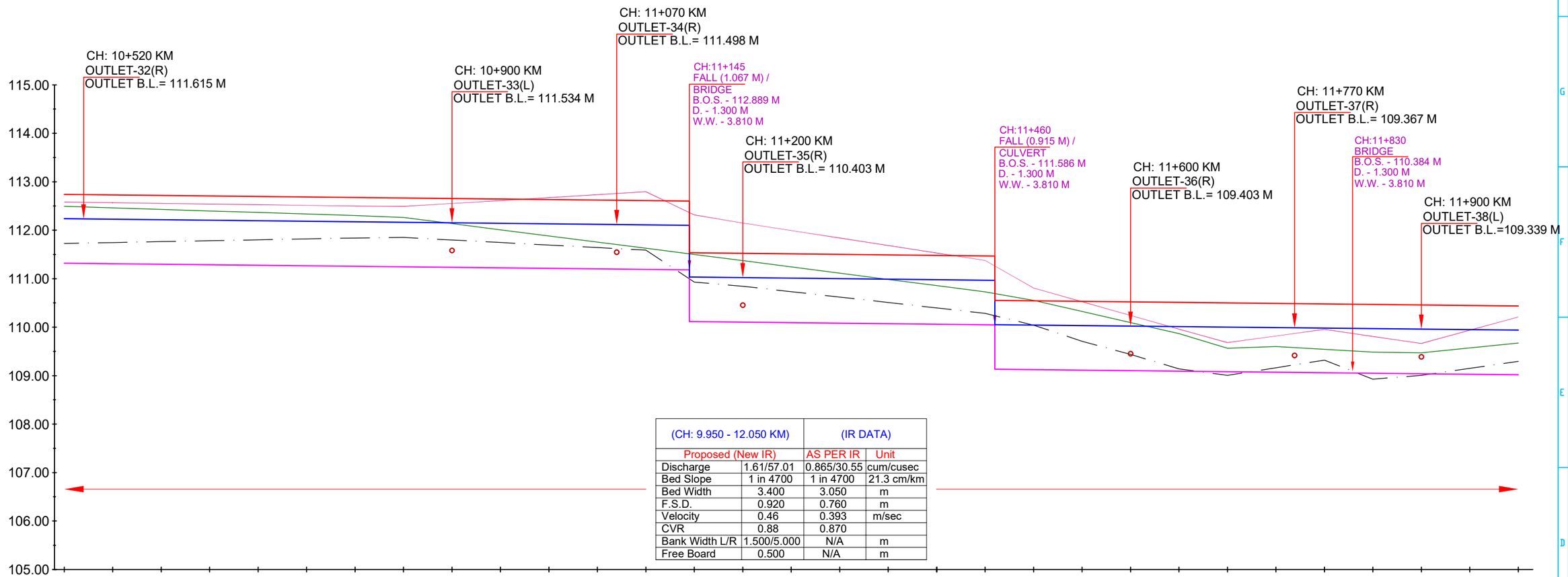
LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 07 of 11

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 10+500 TO 12+000



(CH: 9.950 - 12.050 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	1.61/57.01	0.865/30.55	cum/cusec
Bed Slope	1 in 4700	1 in 4700	21.3 cm/km
Bed Width	3.400	3.050	m
F.S.D.	0.920	0.760	m
Velocity	0.46	0.393	m/sec
CVR	0.88	0.870	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

	Chainage IN KM	TOP OF BANK LEVEL	F.S.L.	Proposed Bed Level	Bed Level	TOP OF BANK LEVEL	NSL
DESIGN DATA / EXISTING DATA	10+500	112.739	112.239	111.319	111.728	112.583	112.493
	10+550	112.735	112.235	111.315	111.746	112.569	112.461
	10+600	112.728	112.228	111.308	111.765	112.554	112.430
	10+650	112.718	112.218	111.298	111.784	112.540	112.398
	10+700	112.707	112.207	111.287	111.802	112.527	112.367
	10+750	112.696	112.196	111.276	111.821	112.512	112.335
	10+800	112.686	112.186	111.266	111.840	112.498	112.304
	10+850	112.675	112.175	111.255	111.851	112.491	112.263
	10+900	112.664	112.164	111.244	111.798	112.551	112.136
	10+950	112.654	112.154	111.234	111.747	112.612	112.009
	11+000	112.643	112.143	111.223	111.694	112.673	111.882
	11+050	112.633	112.133	111.213	111.643	112.733	111.755
	11+100	112.622	112.122	111.202	111.589	112.794	111.628
	11+150	112.618	112.118	111.198	110.932	112.315	111.501
	11+200	112.611	112.111	111.191	110.844	112.148	111.372
	11+250	112.602 112.535 111.534	112.102 112.035 111.034	111.182 111.115 110.114	110.732	111.993	111.243
	11+300	111.523	111.023	110.103	110.620	111.839	111.115
	11+350	111.512	111.012	110.092	110.510	111.685	110.986
	11+400	111.502	111.002	110.082	110.397	111.531	110.858
	11+450	111.491	110.991	110.071	110.286	111.377	110.730
	11+500	111.480	110.980	110.060	110.041	110.808	110.551
	11+550	111.470 111.468< 110.553	110.970 110.968 110.053	110.050 110.048 109.133	109.740	110.525	110.324
	11+600	110.544	110.044	109.124	109.439	110.242	110.096
	11+650	110.534	110.034	109.114	109.139	109.959	109.869
	11+700	110.523	110.023	109.103	109.005	109.681	109.656
	11+750	110.512	110.012	109.092	109.162	109.817	109.600
	11+800	110.502	110.002	109.082	109.320	109.956	109.544
	11+850	110.491	109.991	109.071	108.927	109.808	109.485
	11+900	110.487	109.987	109.067	109.006	109.664	109.470
	11+950	110.480	109.980	109.060	109.151	109.937	109.572
	12+000	110.470	109.970	109.050	109.294	110.210	109.673
		110.459	109.959	109.039			
		110.448	109.948	109.028			
		110.438	109.938	109.018			

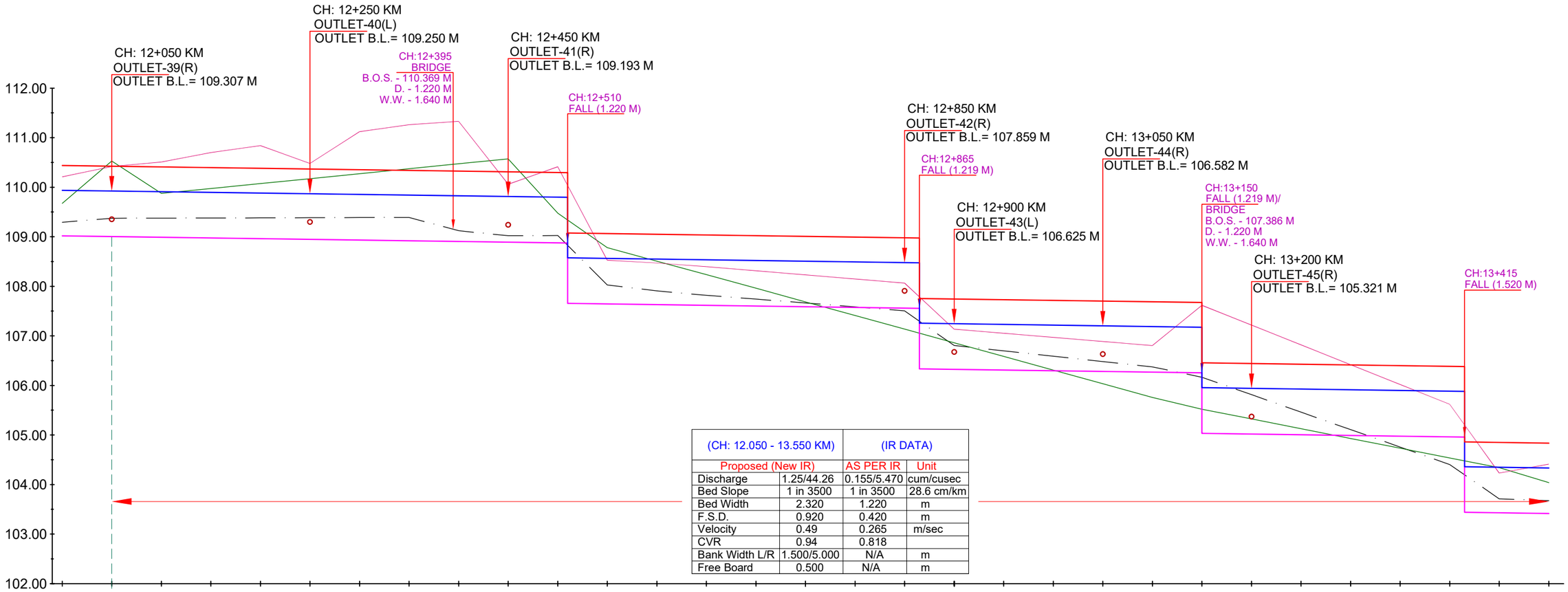
LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 08 of 11

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 12+000 TO 13+500



(CH: 12.050 - 13.550 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	1.25/44.26	0.155/5.470	cum/cusec
Bed Slope	1 in 3500	1 in 3500	28.6 cm/km
Bed Width	2.320	1.220	m
F.S.D.	0.920	0.420	m
Velocity	0.49	0.265	m/sec
CVR	0.94	0.818	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

DESIGN DATA	TOP OF BANK LEVEL	110.438	110.427	110.413	110.399	110.384	110.370	110.356	110.341	110.327	110.313	110.299 110.296 109.076	109.064	109.050	109.036	109.021	109.007	108.993	108.979 108.974 107.755	107.745	107.731	107.717	107.702	107.688	107.674 106.455	106.441	106.426	106.412	106.398	106.383 106.379 104.859	104.849	104.835
	F.S.L.	109.938	109.927	109.913	109.899	109.884	109.870	109.856	109.841	109.827	109.813	109.799 109.796 108.576	108.564	108.550	108.536	108.521	108.507	108.493	108.479 108.474 107.255	107.245	107.231	107.217	107.202	107.188	107.174 105.955	105.941	105.926	105.912	105.898	105.883 105.879 104.359	104.349	104.335
	Proposed Bed Level	109.018	109.007	108.993	108.979	108.964	108.950	108.936	108.921	108.907	108.893	108.879 108.876 107.656	107.644	107.630	107.616	107.601	107.587	107.573	107.559 107.554 106.335	106.325	106.311	106.297	106.282	106.268	106.254 105.035	105.021	105.006	104.992	104.978	104.963 104.959 103.439	103.429	103.415
EXISTING DATA	Bed Level	109.294	109.373	109.376	109.379	109.381	109.385	109.388	109.390	109.122	109.021	109.025	108.028	107.908	107.818	107.742	107.665	107.586	107.505	106.807	106.698	106.591	106.481	106.374	106.166	105.814	105.461	105.109	104.757	104.404	103.711	103.675
	TOP OF BANK LEVEL	110.210	110.418	110.509	110.700	110.841	110.481	111.122	111.263	111.330	110.060	110.413	108.527	108.471	108.397	108.315	108.232	108.149	108.067	107.137	107.054	106.971	106.888	106.805	107.617	107.218	106.819	106.419	106.020	105.621	104.233	104.413
	NSL	109.673	109.775	109.875	109.974	110.074	110.173	110.272	110.372	110.474	110.572	109.476	108.779	108.506	108.236	107.961	107.686	107.412	107.137	106.860	106.585	106.309	106.034	105.759	105.521	105.324	105.127	104.930	104.733	104.536	104.340	104.038
	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

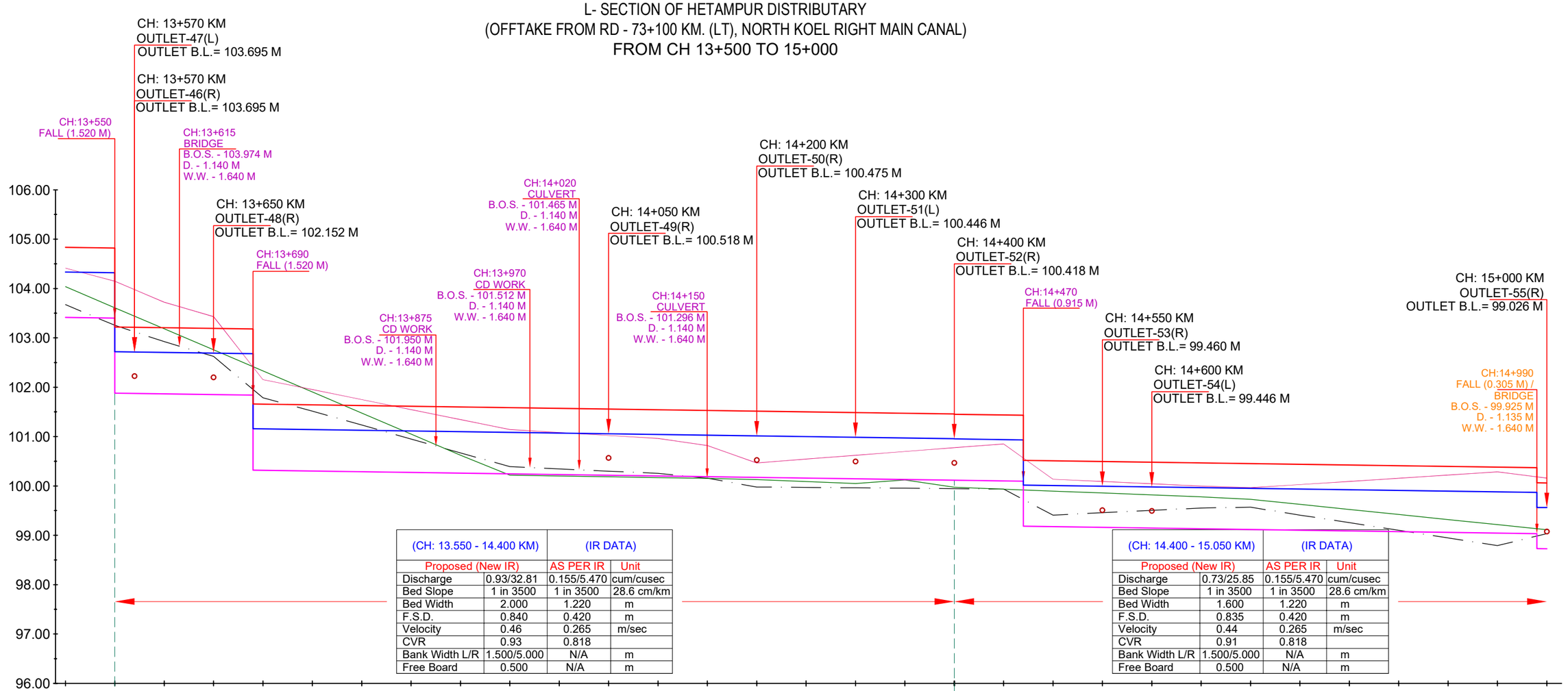
LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 09 of 11

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 13+500 TO 15+000



(CH: 13.550 - 14.400 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	0.93/32.81	0.155/5.470	cum/cusec
Bed Slope	1 in 3500	1 in 3500	28.6 cm/km
Bed Width	2.000	1.220	m
F.S.D.	0.840	0.420	m
Velocity	0.46	0.265	m/sec
CVR	0.93	0.818	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

(CH: 14.400 - 15.050 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	0.73/25.85	0.155/5.470	cum/cusec
Bed Slope	1 in 3500	1 in 3500	28.6 cm/km
Bed Width	1.600	1.220	m
F.S.D.	0.835	0.420	m
Velocity	0.44	0.265	m/sec
CVR	0.91	0.818	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

	Chainage IN KM	13+500	13+550	13+600	13+650	13+700	13+750	13+800	13+850	13+900	13+950	14+000	14+050	14+100	14+150	14+200	14+250	14+300	14+350	14+400	14+450	14+500	14+550	14+600	14+650	14+700	14+750	14+800	14+850	14+900	14+950	15+000
DESIGN DATA	TOP OF BANK LEVEL	104.835	104.621 103.221	103.206	103.192	103.181 101.661 101.658	101.643	101.629	101.615	101.601	101.586	101.572	101.558	101.543	101.529	101.515	101.501	101.486	101.472	101.458 101.453	101.438	101.433 100.518	100.509	100.495	100.481	100.466	100.452	100.438	100.423	100.409	100.395	100.381	100.369 100.064 100.061
	F.S.L.	104.335	104.321 102.721	102.706	102.692	102.681 101.161 101.158	101.143	101.129	101.115	101.101	101.086	101.072	101.058	101.043	101.029	101.015	101.001	100.986	100.972	100.958 100.953	100.938	100.933 100.018	100.009	99.995	99.981	99.966	99.952	99.938	99.923	99.909	99.895	99.881	99.869 99.564 99.561
	Proposed Bed Level	103.415	103.401 101.881	101.866	101.852	101.841 100.321 100.318	100.303	100.289	100.275	100.261	100.246	100.232	100.218	100.203	100.189	100.175	100.161	100.146	100.132	100.118	100.103	100.098 99.183	99.174	99.160	99.146	99.131	99.117	99.103	99.088	99.074	99.060	99.046	99.034 98.729 98.726
EXISTING DATA	Bed Level	103.675	103.255	102.923	102.625	101.786	101.517	101.234	100.950	100.670	100.391	100.343	100.299	100.254	100.156	99.979	99.970	99.962	99.954	99.945	99.937	99.408	99.457	99.505	99.553	99.569	99.409	99.257	99.100	98.946	98.790	99.034
	TOP OF BANK LEVEL	104.413	104.149	103.724	103.431	102.153	101.953	101.750	101.547	101.345	101.142	101.082	101.022	100.962	100.818	100.466	100.544	100.621	100.698	100.775	100.853	100.136	100.090	100.043	99.997	99.964	100.028	100.092	100.157	100.220	100.285	100.159
	NSL	104.038	103.611	103.186	102.760	102.331	101.905	101.478	101.051	100.624	100.217	100.201	100.185	100.168	100.153	100.128	100.089	100.051	100.012	99.973	99.934	99.895	99.857	99.818	99.780	99.730	99.627	99.524	99.422	99.319	99.216	99.114

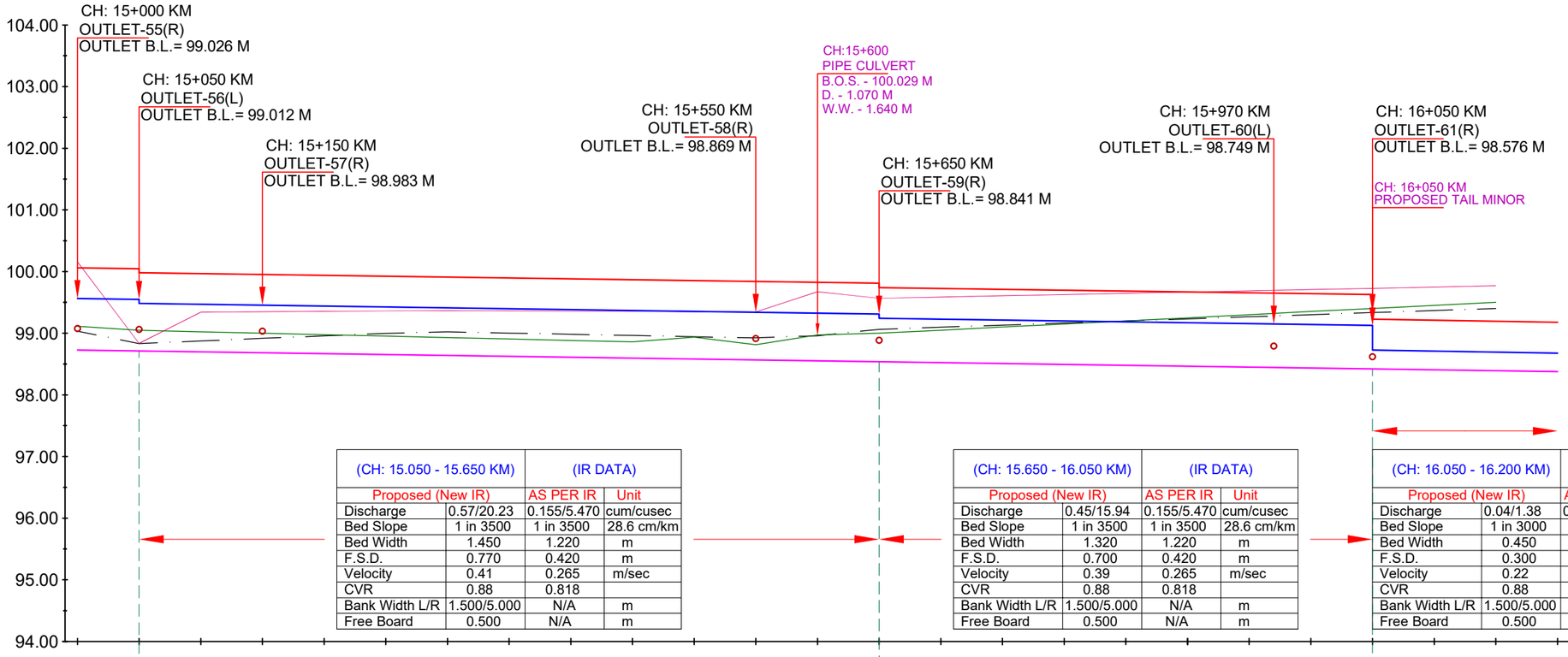
LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 10 of 11

L- SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 15+000 TO 16+200



(CH: 15.050 - 15.650 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	0.57/20.23	0.155/5.470	cum/cusec
Bed Slope	1 in 3500	1 in 3500	28.6 cm/km
Bed Width	1.450	1.220	m
F.S.D.	0.770	0.420	m
Velocity	0.41	0.265	m/sec
CVR	0.88	0.818	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

(CH: 15.650 - 16.050 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	0.45/15.94	0.155/5.470	cum/cusec
Bed Slope	1 in 3500	1 in 3500	28.6 cm/km
Bed Width	1.320	1.220	m
F.S.D.	0.700	0.420	m
Velocity	0.39	0.265	m/sec
CVR	0.88	0.818	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

(CH: 16.050 - 16.200 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	0.04/1.38	0.155/5.470	cum/cusec
Bed Slope	1 in 3000	1 in 3500	33.3 cm/km
Bed Width	0.450	1.220	m
F.S.D.	0.300	0.420	m
Velocity	0.22	0.265	m/sec
CVR	0.88	0.818	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	N/A	m

DESIGN DATA	TOP OF BANK LEVEL	100.061	100.047 99.982	99.968	99.953	99.939	99.925	99.911	99.896	99.882	99.868	99.853	99.839	99.825	99.811 99.741	99.726	99.712	99.698	99.683	99.669	99.655	99.649	99.641	99.626 99.226	99.210	99.193	99.176
	F.S.L.	99.561	99.547 99.482	99.468	99.453	99.439	99.425	99.411	99.396	99.382	99.368	99.353	99.339	99.325	99.311 99.241	99.226	99.212	99.198	99.183	99.169	99.155	99.149	99.141	99.126 98.726	98.710	98.693	98.676
	Proposed Bed Level	98.726	98.712	98.698	98.683	98.669	98.655	98.641	98.626	98.612	98.598	98.583	98.569	98.555	98.541	98.526	98.512	98.498	98.483	98.469	98.455	98.449	98.441	98.426	98.410	98.393	98.376
EXISTING DATA	Bed Level	99.034	98.833	98.874	98.916	98.957	98.998	99.022	99.002	98.983	98.963	98.943	98.924	98.959	99.063	99.097	99.131	99.165	99.198	99.232	99.266		99.300	99.334	99.367	99.401	
	TOP OF BANK LEVEL	100.159	98.836	99.342	99.349	99.355	99.362	99.366	99.362	99.358	99.354	99.350	99.347	99.675	99.567	99.587	99.607	99.627	99.648	99.668	99.688		99.708	99.729	99.750	99.770	
	NSL	99.114	99.046	99.023	98.999	98.976	98.952	98.929	98.906	98.882	98.859	98.836	98.812	98.870	98.999	99.049	99.100	99.150	99.200	99.251	99.301		99.352	99.402	99.452	99.503	
	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+950		16+000	16+050	16+100	16+150	16+200

LEGEND

	NSL		EXISTING BED LEVEL
	EXISTING TOP OF BANK		PROPOSED BED LEVEL
	EXISTING FALL		PROPOSED FSL
	MODIFIED FALL		PROPOSED TOP OF BANK LEVEL
	NEW FALL		

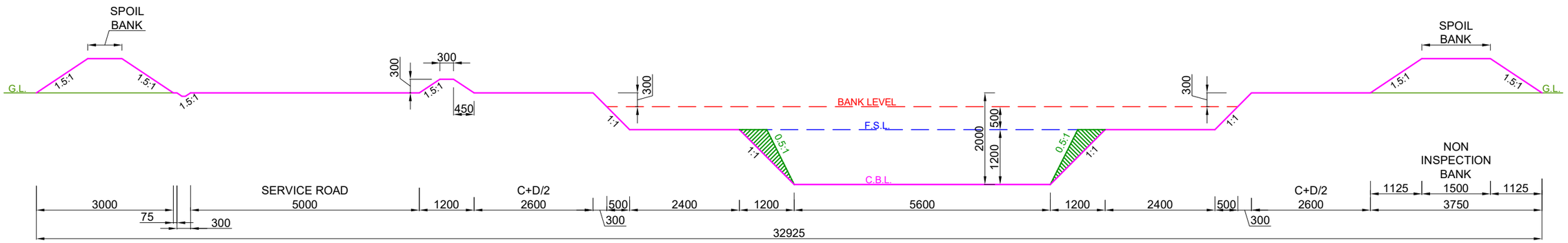
IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
DRAWING TITLE :-	L- SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ LSEC- 11 of 11

TYPICAL X-SECTION

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 0.000 KM TO CH: 3.550 KM

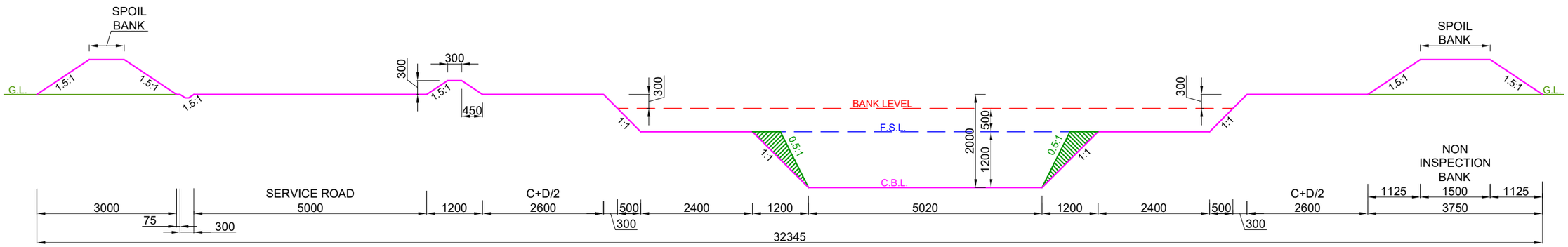
NOTE:-

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 :-		
	CUT AREA	WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	FILL AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 1 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 3.550 KM TO CH: 5.700 KM

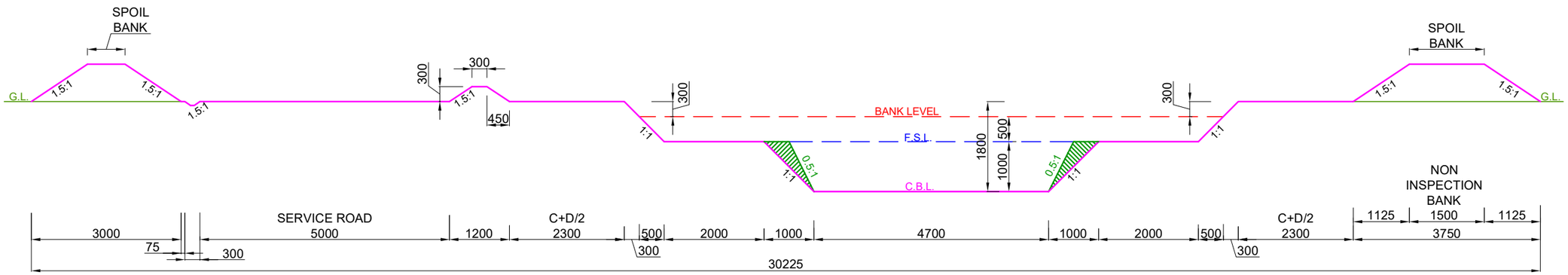
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 2 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 5.700 KM TO CH: 8.550 KM

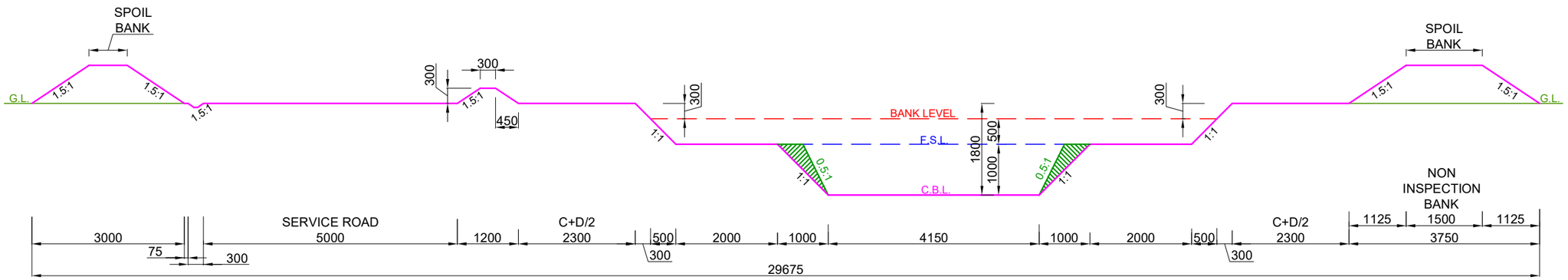
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 3 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 8.550 KM TO CH: 9.950 KM

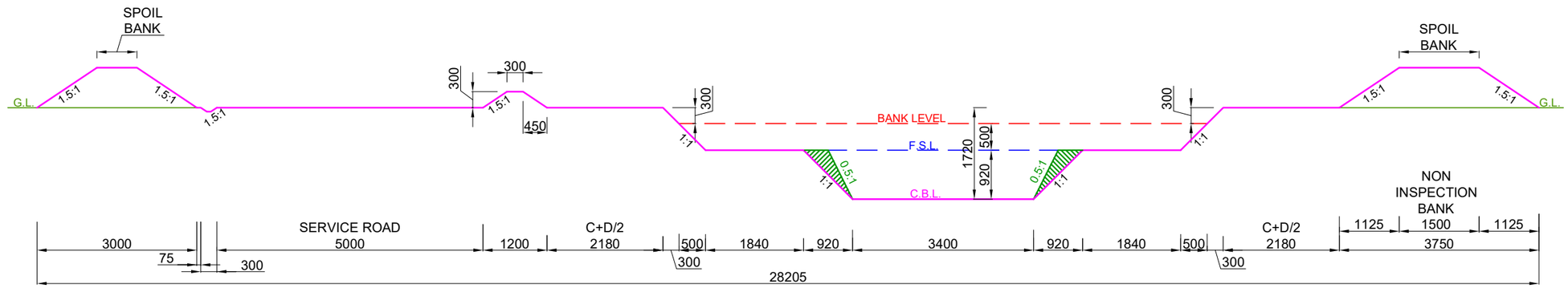
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 4 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 9.950 KM TO CH: 12.050 KM

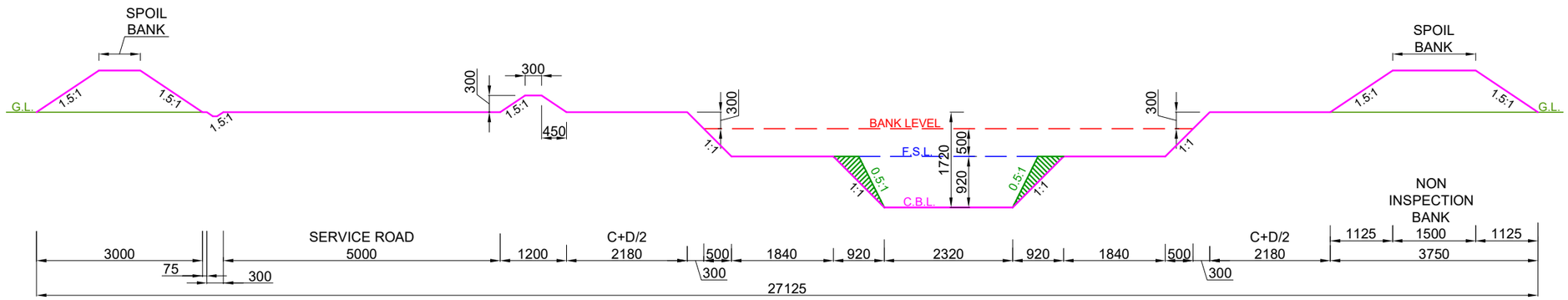
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 5 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 12.050 KM TO CH: 13.550 KM

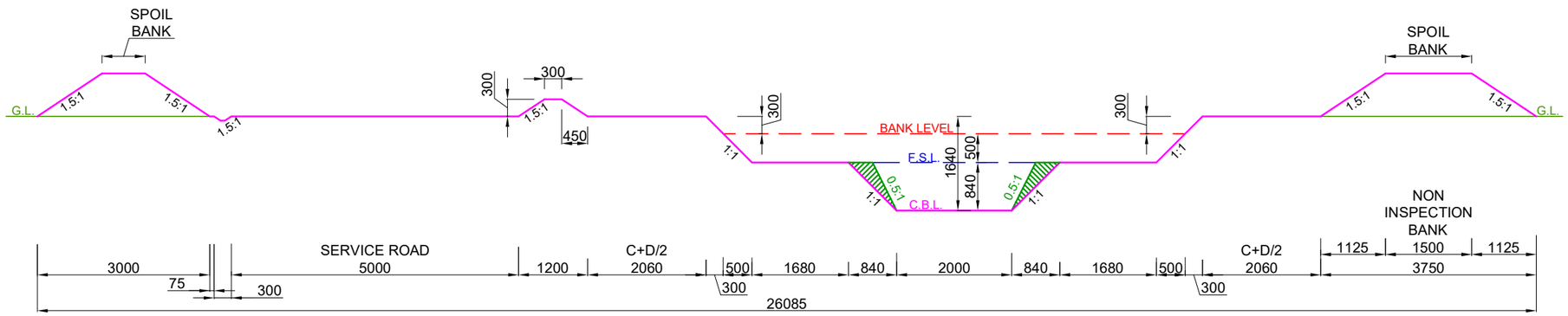
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 6 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 13.550 KM TO CH: 14.400 KM

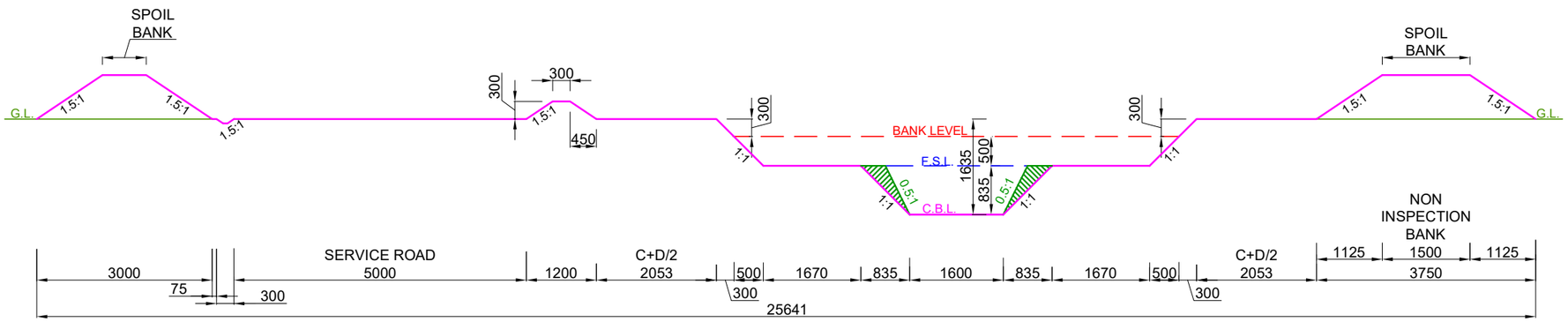
NOTE:-

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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 7 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 14.400 KM TO CH: 15.050 KM

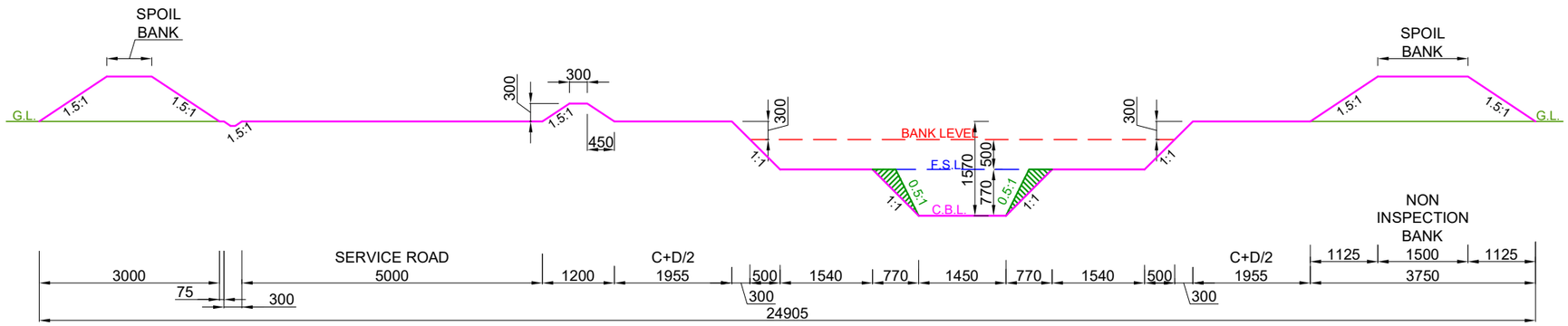
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 8 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 15.050 KM TO CH: 15.650 KM

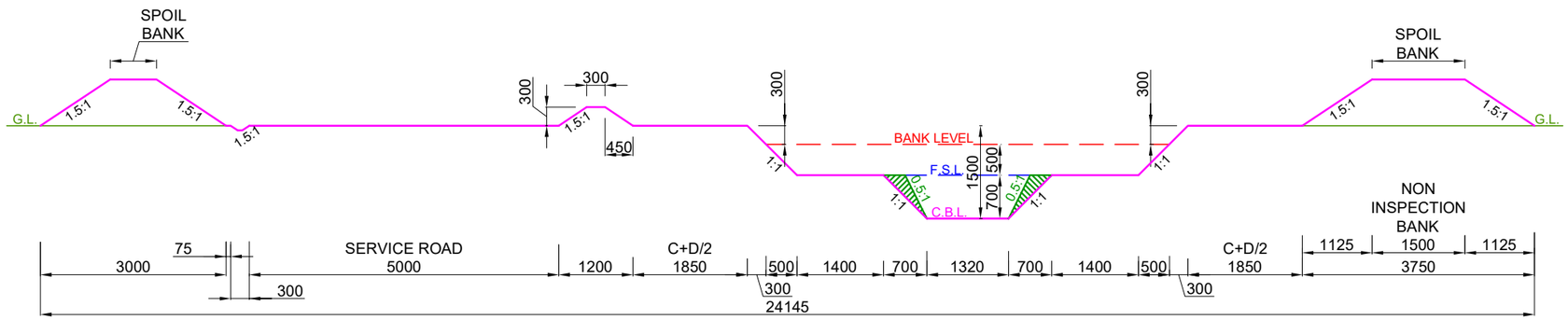
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 9 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 15.650 KM TO CH: 16.050 KM

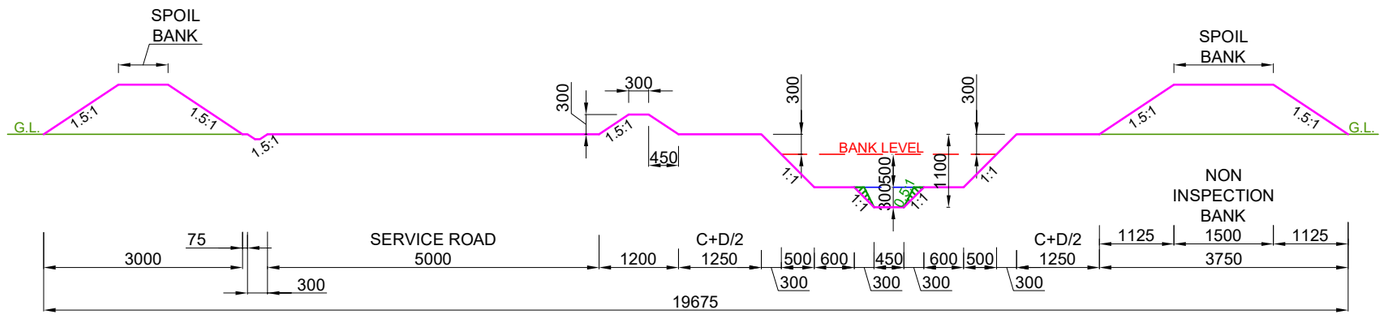
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 10 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 16.050 KM TO CH: 16.200 KM

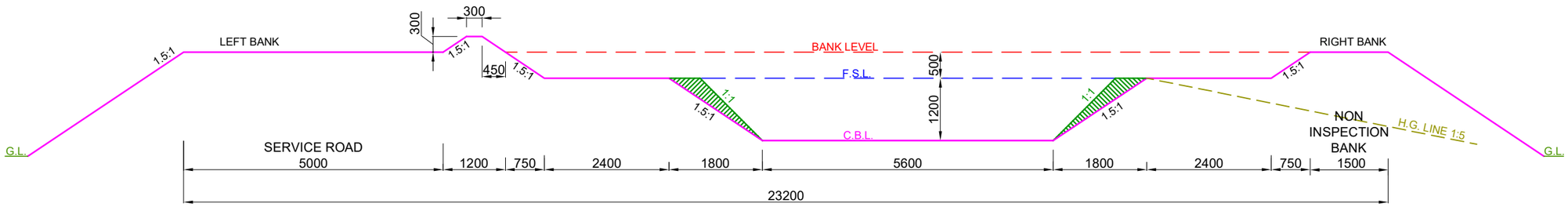
NOTE:-

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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FC) 11 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 0.000 KM TO CH: 3.550 KM

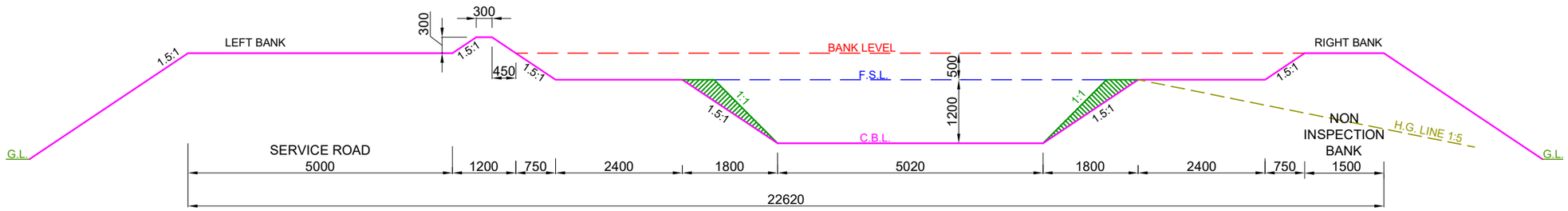
NOTE:-

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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 1 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 3.550 KM TO CH: 5.700 KM

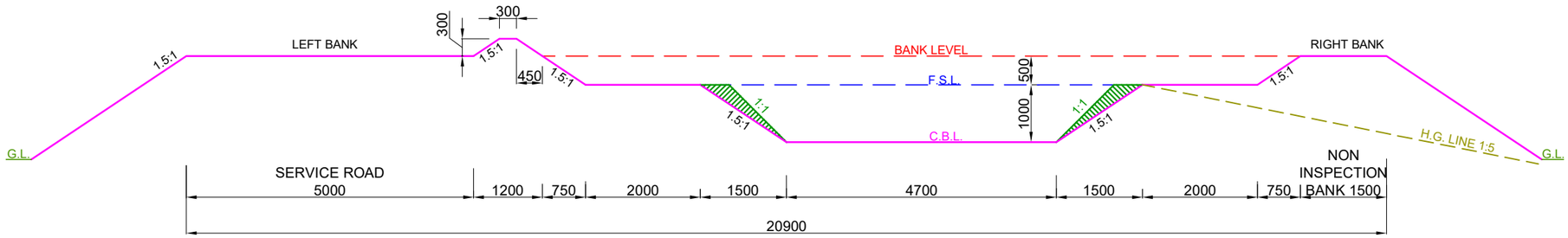
NOTE:-

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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 2 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 5.700 KM TO CH: 8.550 KM

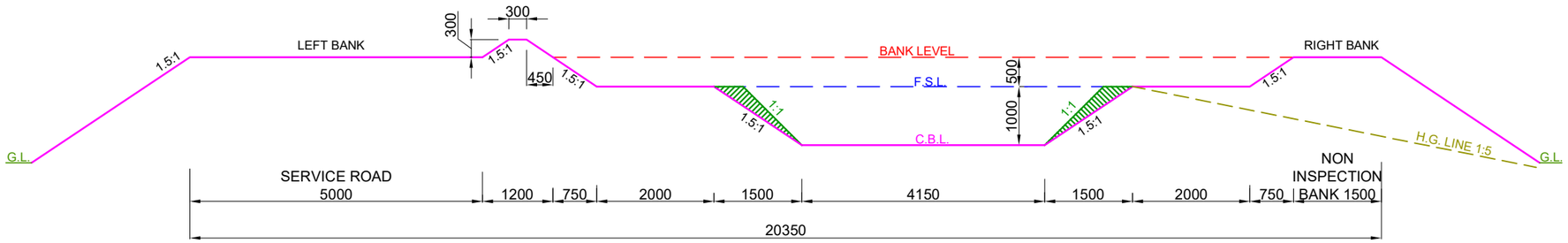
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 3 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 8.550 KM TO CH: 9.950 KM

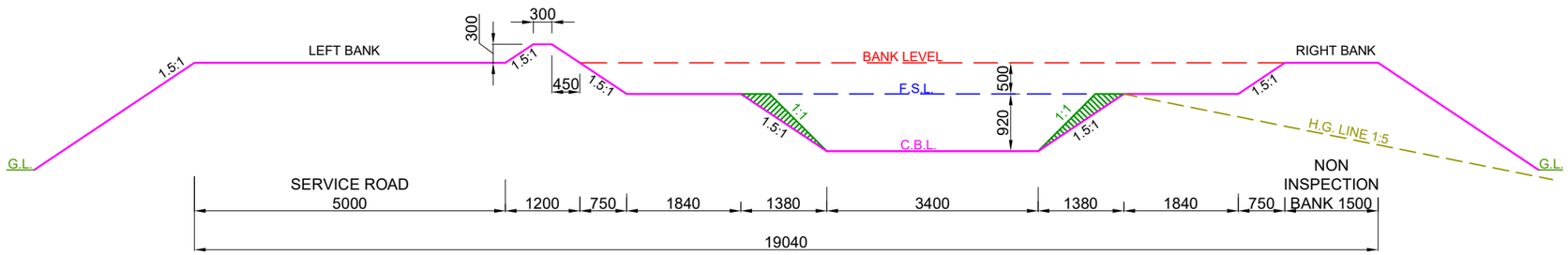
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 4 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 9.950 KM TO CH: 12.050 KM

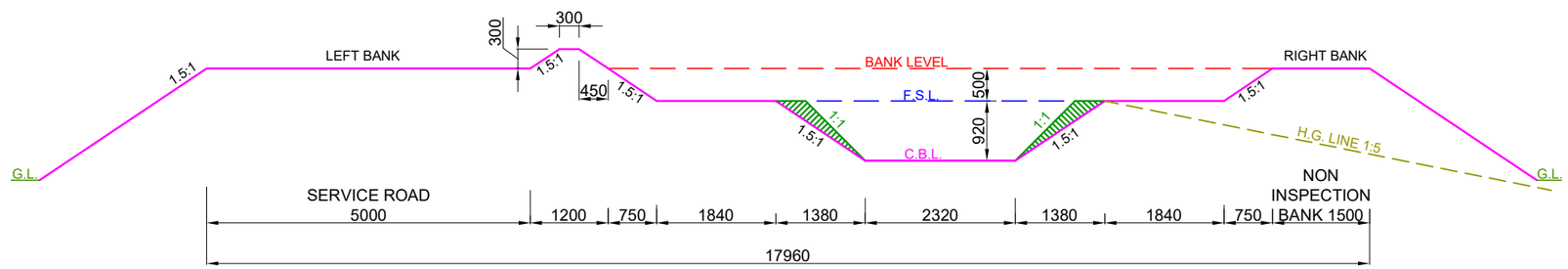
NOTE:-

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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 5 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 12.050 KM TO CH: 13.550 KM

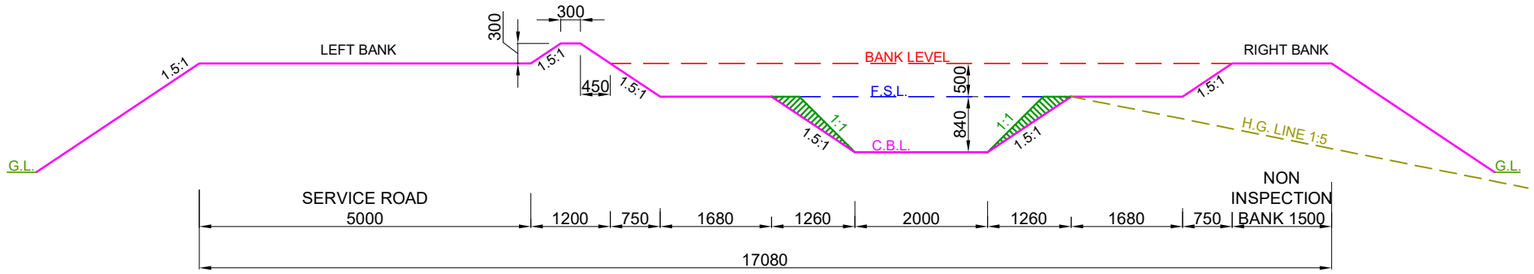
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 6 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 13.550 KM TO CH: 14.400 KM

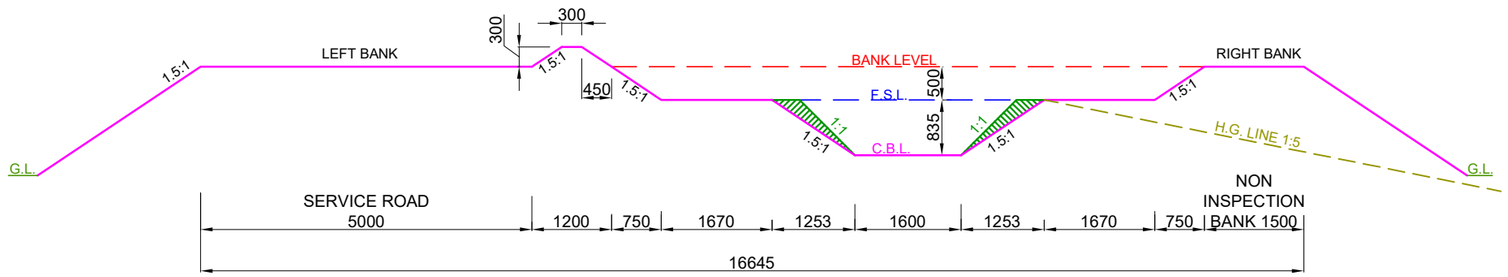
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 7 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 14.400 KM TO CH: 15.050 KM

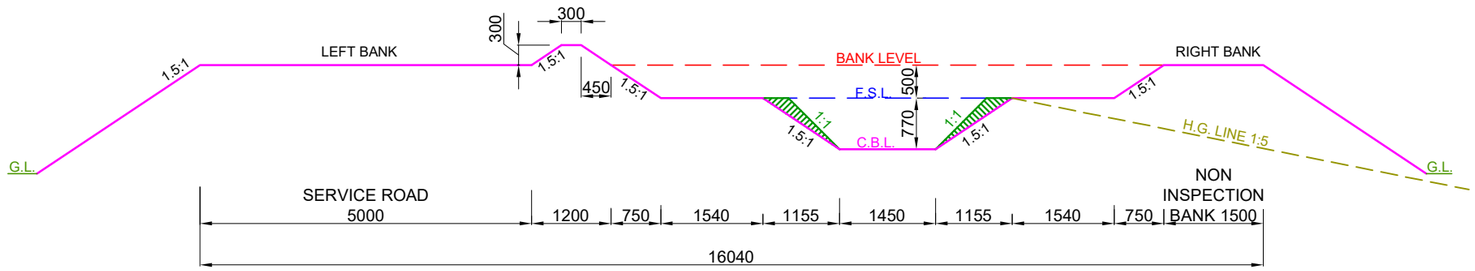
NOTE:-

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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 8 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 15.050 KM TO CH: 15.650 KM

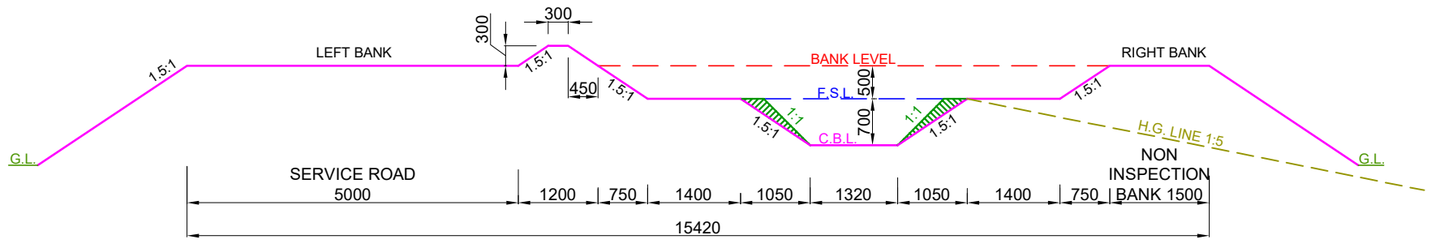
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 9 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 15.650 KM TO CH: 16.050 KM

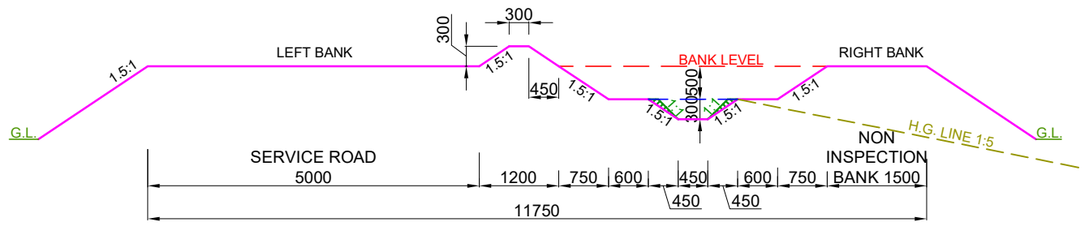
NOTE:-

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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 10 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR FULL FILLING



DESIGN SECTION FROM CH: 16.050 KM TO CH: 16.200 KM

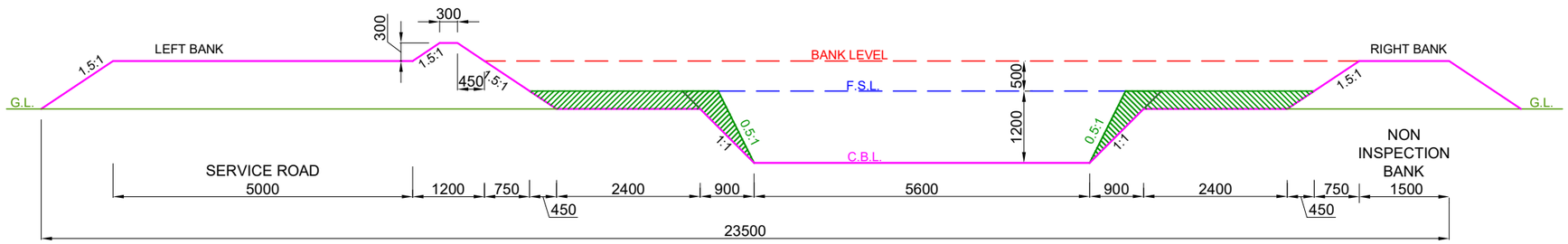
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(FF) 11 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 0.000 KM TO CH: 3.550 KM

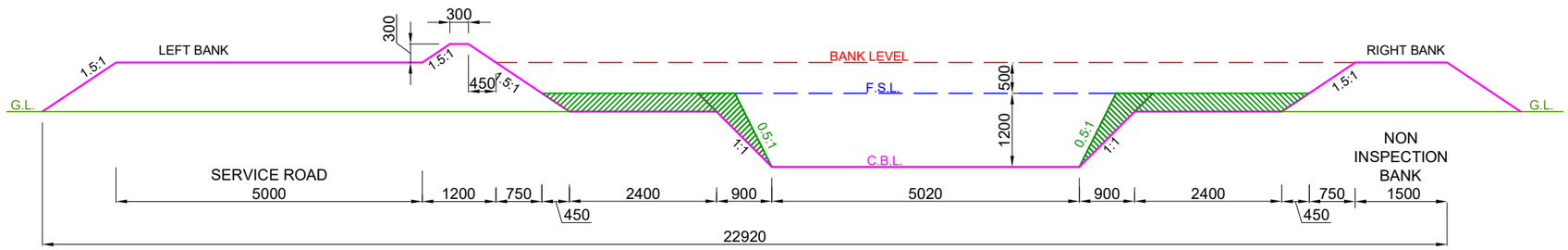
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 1 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 3.550 KM TO CH: 5.700 KM

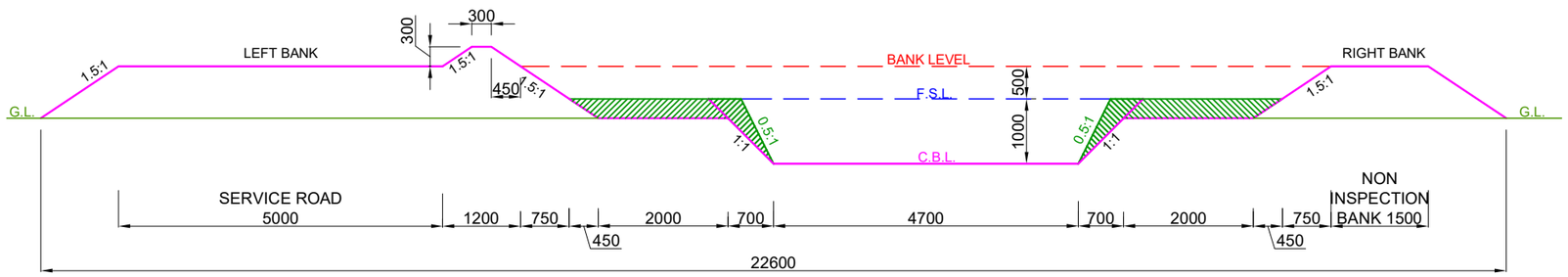
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 2 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 5.700 KM TO CH: 8.550 KM

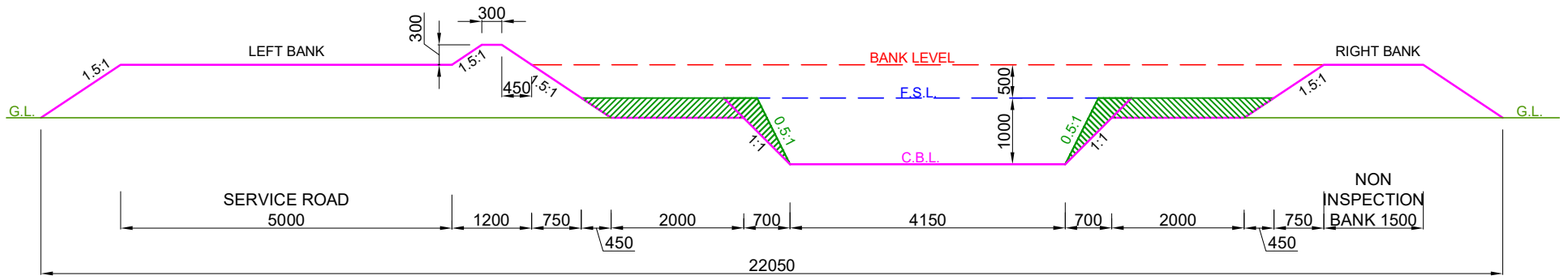
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 3 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 8.550 KM TO CH: 9.950 KM

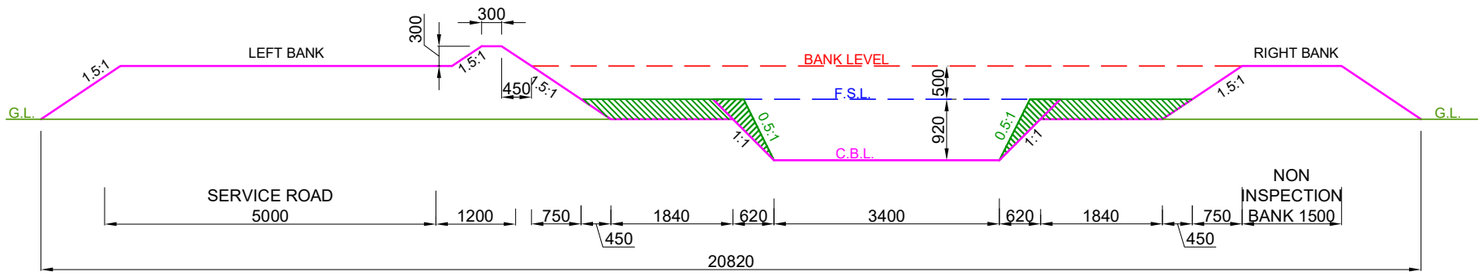
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 4 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 9.950 KM TO CH: 12.050 KM

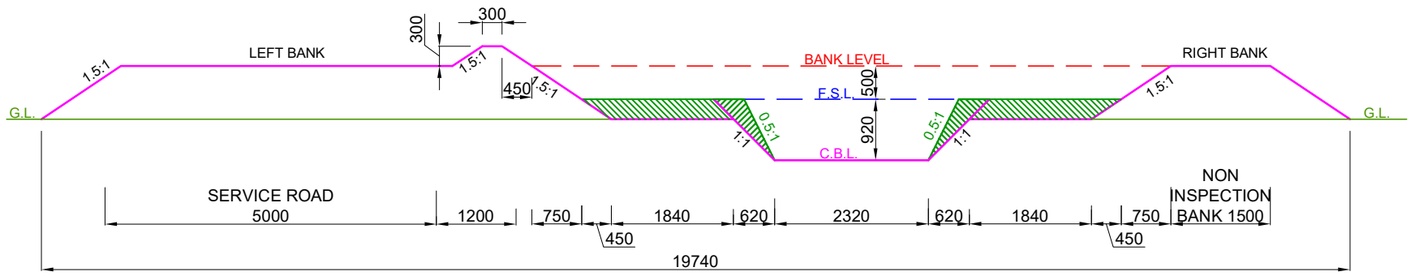
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 5 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 12.050 KM TO CH: 13.550 KM

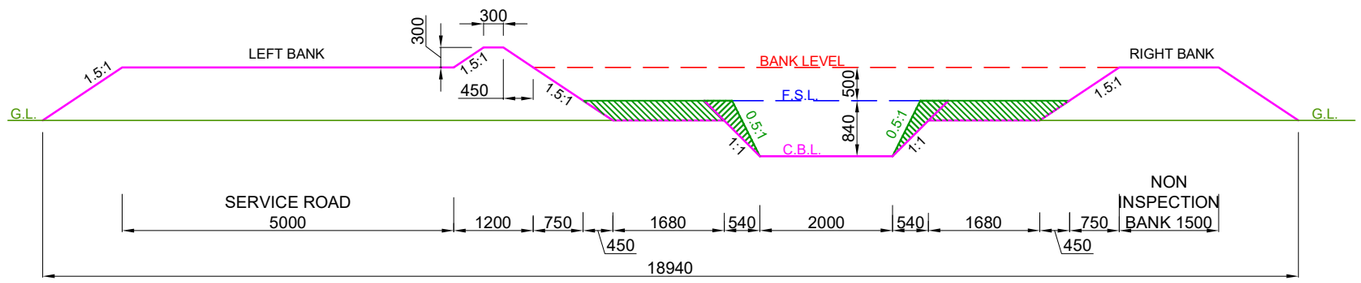
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 6 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 13.550 KM TO CH: 14.400 KM

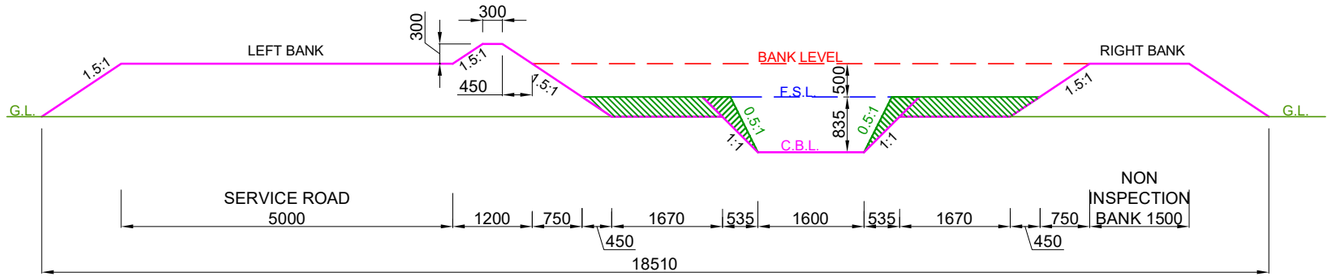
NOTE:-

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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 7 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 14.400 KM TO CH: 15.050 KM

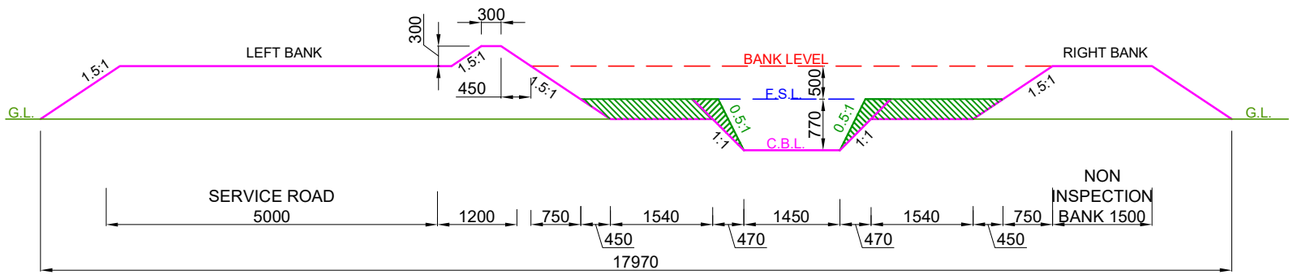
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 8 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 15.050 KM TO CH: 15.650 KM

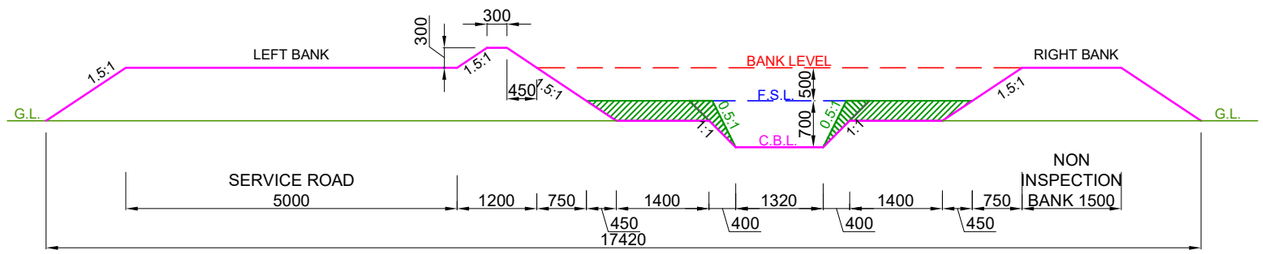
NOTE:-

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.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	CUT AREA		Drawing Title :-	X SECTION OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 9 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 15.650 KM TO CH: 16.050 KM

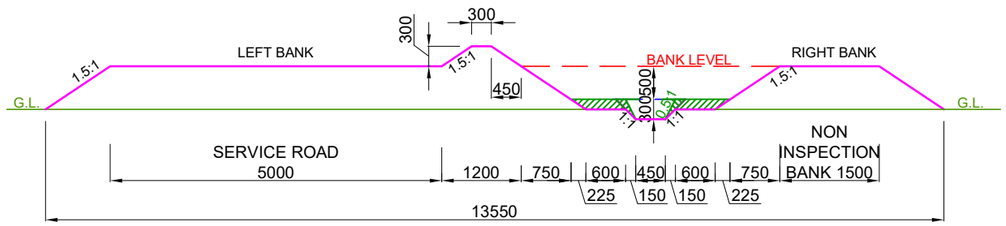
NOTE:-

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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 10 of 11

TYPICAL X - SECTION OF HETAMPUR DISTRIBUTARY
(OFFTAKE FROM RD - 73+100 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)

DESIGN SECTION FOR PARTLY CUTTING/ PARTLY FILLING



DESIGN SECTION FROM CH: 16.050 KM TO CH: 16.200 KM

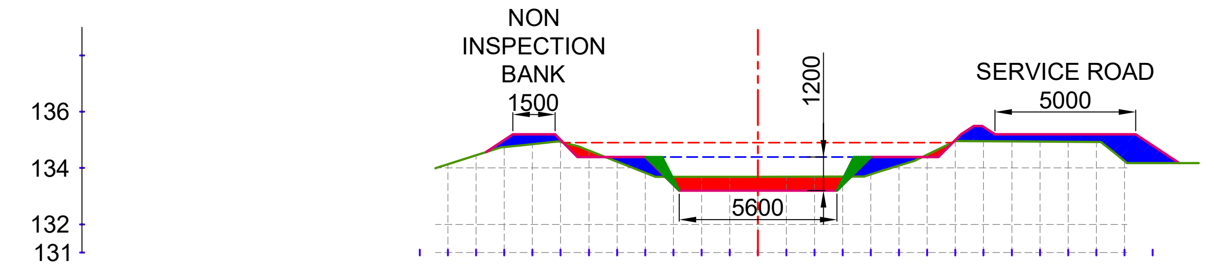
NOTE:-

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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC /TYP-(PCF) 11 of 11

CROSS-SECTION

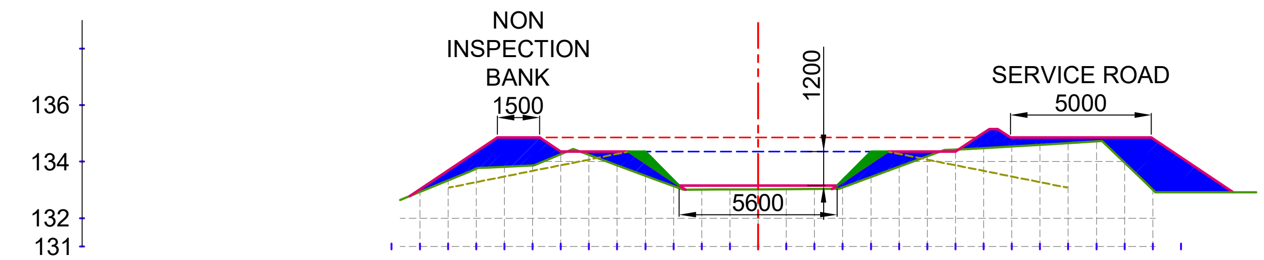
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)		134.135	134.453	134.744	134.848	134.924	134.620	134.226	133.832	133.684	133.686	133.689	133.692	133.694	133.697	133.699	133.776	134.087	134.474	134.954	134.949	134.945	134.940	134.935	134.929	134.247	
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	14

CUTTING AREA (SQ.M) = 3.335
FILLING AREA (SQ.M) = 5.407

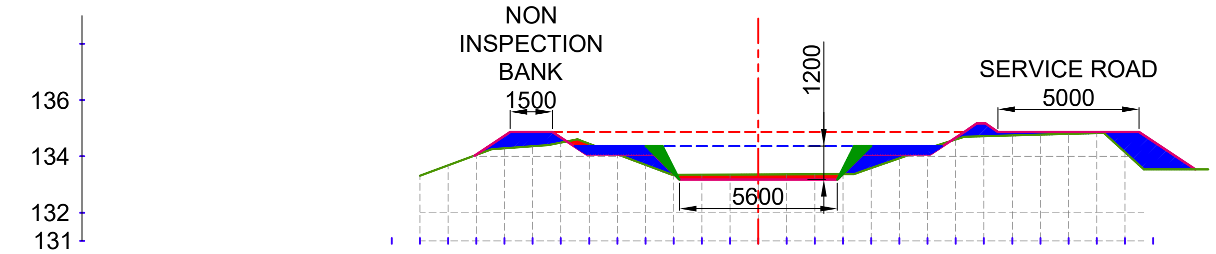
CH. (KM):- 0+100
DESIGNED BED LEVEL = 133.195 M



EXIST. LEVEL (M)		132.928	133.339	133.749	133.821	133.870	134.263	134.236	133.869	133.503	133.136	133.008	133.014	133.019	133.025	133.030	133.083	133.451	133.820	134.188	134.429	134.477	134.537	134.597	134.657	134.717	133.966	133.010	
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	13	14	15

CUTTING AREA (SQ.M) = 0.058
FILLING AREA (SQ.M) = 11.742

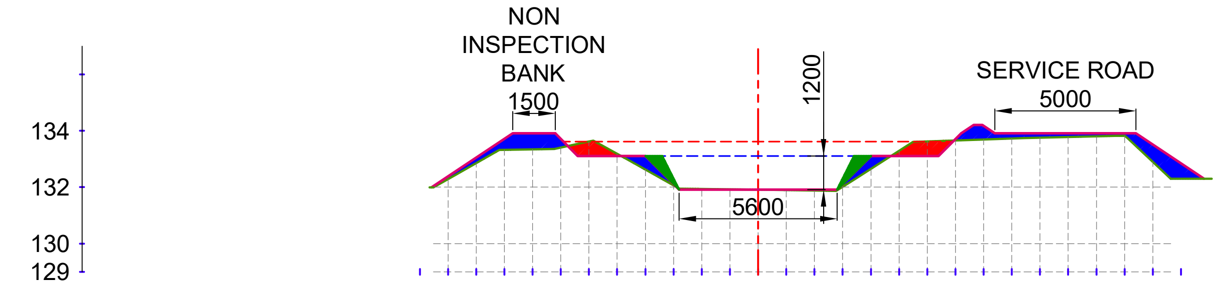
CH. (KM):- 0+300
DESIGNED BED LEVEL = 133.152 M



EXIST. LEVEL (M)		133.318	133.686	134.055	134.288	134.365	134.494	134.455	134.077	133.699	133.344	133.348	133.351	133.355	133.359	133.363	133.367	133.583	133.933	134.282	134.603	134.718	134.744	134.770	134.796	134.822	134.149	
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	13	14

CUTTING AREA (SQ.M) = 1.191
FILLING AREA (SQ.M) = 5.303

CH. (KM):- 0+200
DESIGNED BED LEVEL = 133.173 M



EXIST. LEVEL (M)		132.286	132.852	133.321	133.342	133.408	133.621	133.181	132.625	132.068	131.941	131.926	131.911	131.896	131.880	132.014	132.652	133.290	133.625	133.660	133.695	133.732	133.760	133.782	133.804	133.826	132.898	
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	14	15

CUTTING AREA (SQ.M) = 1.465
FILLING AREA (SQ.M) = 5.035

CH. (KM):- 0+400
DESIGNED BED LEVEL = 131.911 M

LEGEND

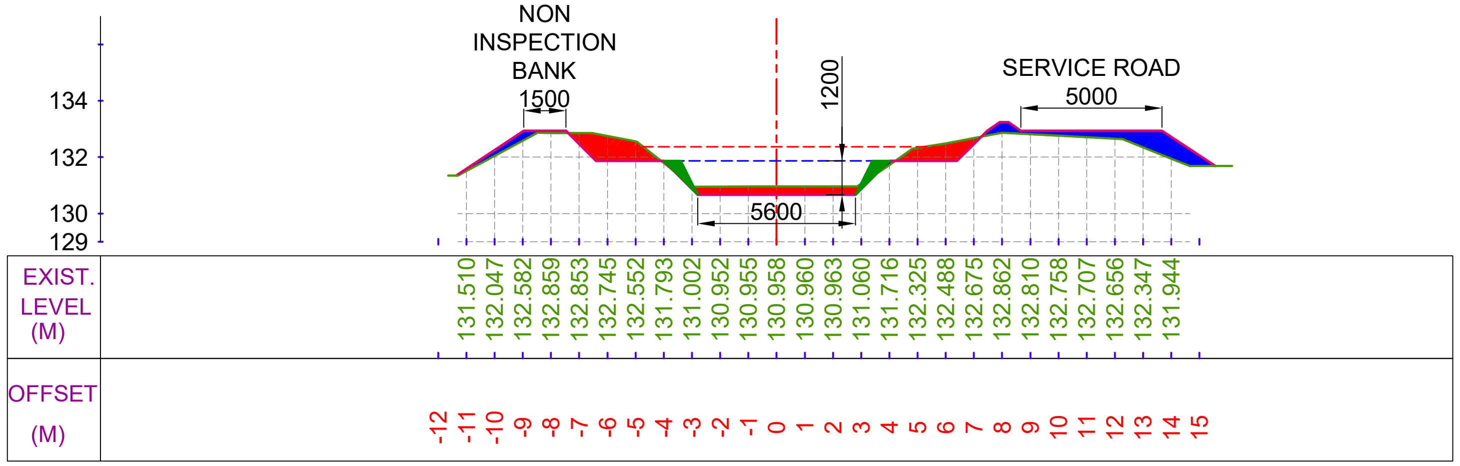
▨	CUT AREA	▭	EXISTING BED LINE
		- - -	F.S.L.
▨	FILL AREA	▭	DESIGNED BED LINE
		- - -	H.G. LINE

Prepared by :-

WAPCOS LTD.

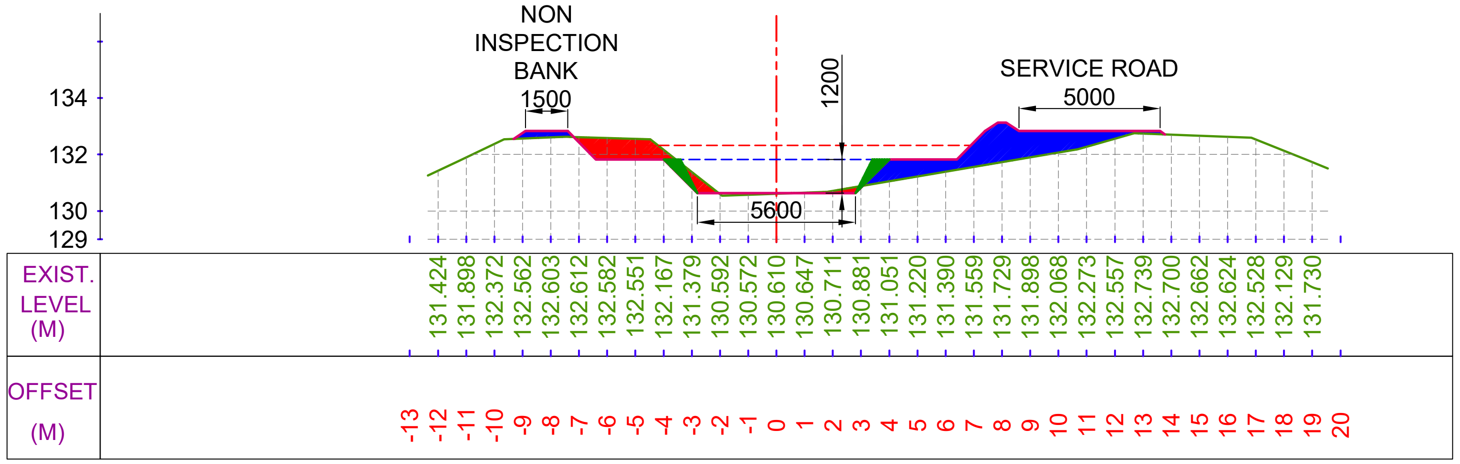
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 1 of 41

X SECTION OF HETAMPUR DY.



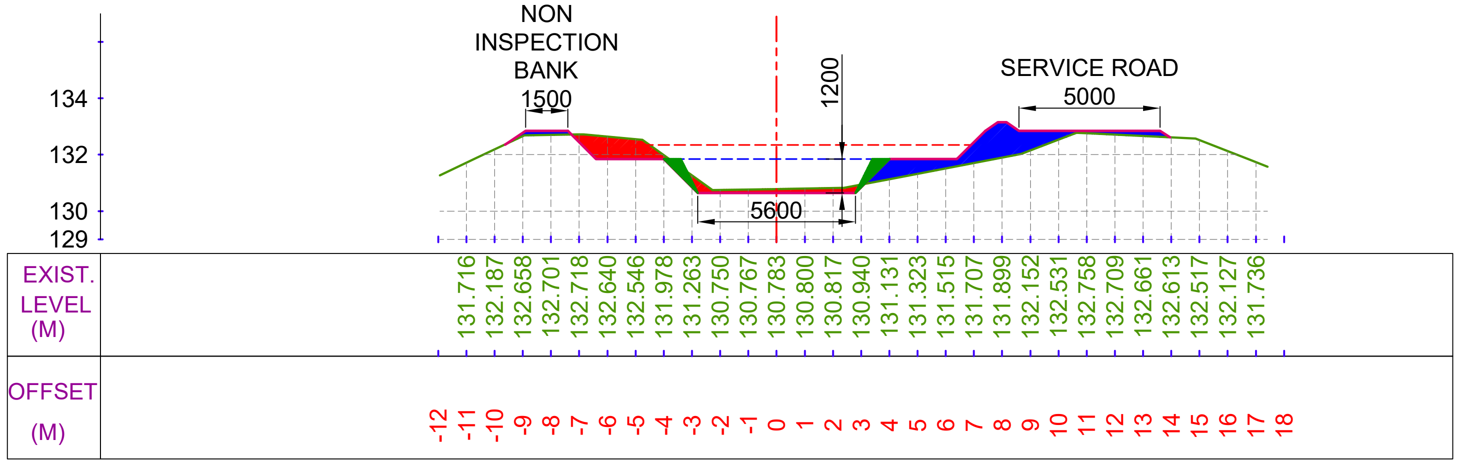
CUTTING AREA (SQ.M) = 4.902
FILLING AREA (SQ.M) = 3.624

CH. (KM):- 0+500
DESIGNED BED LEVEL = 130.670 M



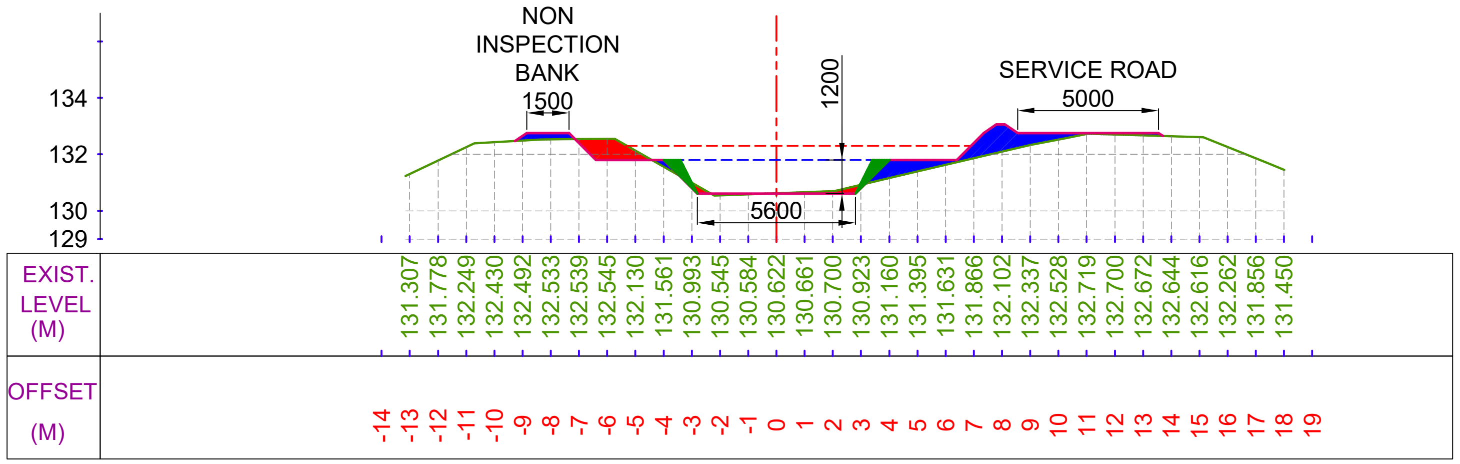
CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 0.000

CH. (KM):- 0+700
DESIGNED BED LEVEL = 130.627 M



CUTTING AREA (SQ.M) = 2.898
FILLING AREA (SQ.M) = 5.200

CH. (KM):- 0+600
DESIGNED BED LEVEL = 130.648 M



CUTTING AREA (SQ.M) = 1.612
FILLING AREA (SQ.M) = 3.972

CH. (KM):- 0+800
DESIGNED BED LEVEL = 130.606 M

LEGEND

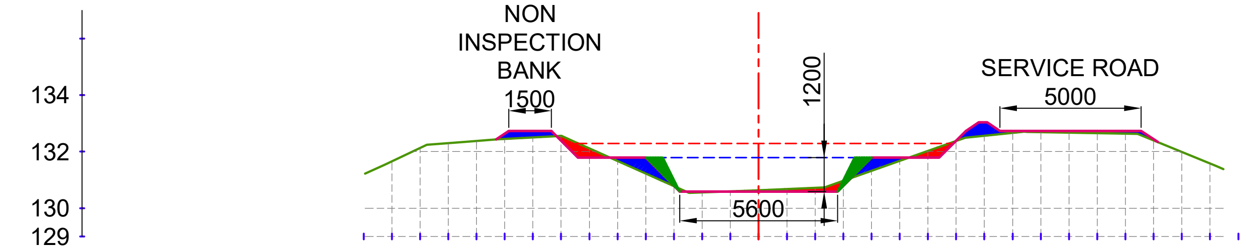
🟥	CUT AREA	▭	EXISTING BED LINE
		┄	F.S.L.
▨	FILL AREA	━	DESIGNED BED LINE
		┄	H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 2 of 41

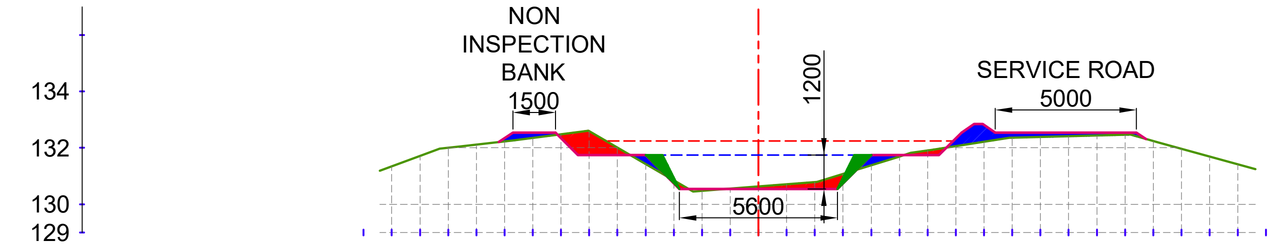
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)		131.659	132.126	132.299	132.378	132.451	132.504	132.557	132.114	131.667	131.221	130.775	130.556	130.596	130.635	130.675	130.715	130.965	131.319	131.673	132.026	132.378	132.562	132.662	132.692	132.675	132.657	132.640	132.399	131.987	131.575	
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	15	16	17

CUTTING AREA (SQ.M) = 1.233
FILLING AREA (SQ.M) = 2.428

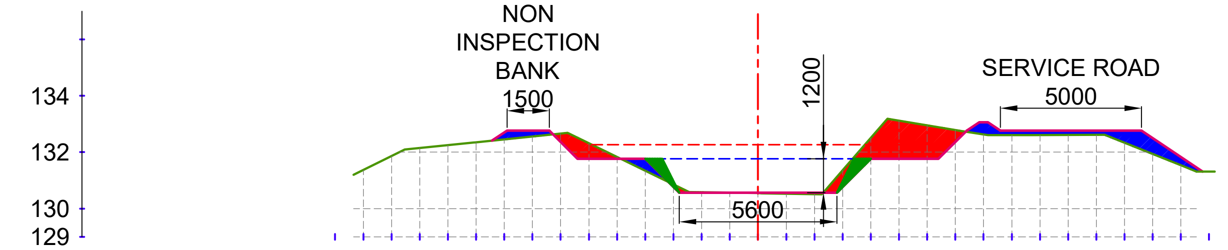
CH. (KM):- 0+900
DESIGNED BED LEVEL = 130.585 M



EXIST. LEVEL (M)		131.344	131.714	132.005	132.117	132.228	132.352	132.481	132.588	132.006	131.425	130.845	130.472	130.550	130.628	130.706	130.784	131.075	131.384	131.692	131.909	132.064	132.219	132.359	132.384	132.410	132.435	132.460	132.242	131.967	131.691	131.416	
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	15	16	17	18

CUTTING AREA (SQ.M) = 2.200
FILLING AREA (SQ.M) = 2.346

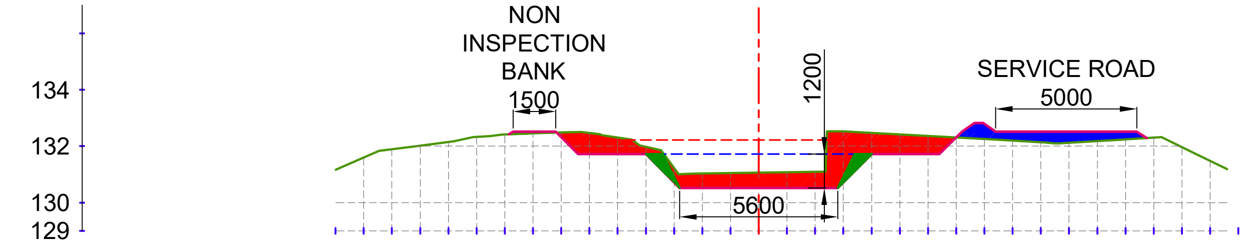
CH. (KM):- 1+100
DESIGNED BED LEVEL = 130.542 M



EXIST. LEVEL (M)		131.374	131.865	132.148	132.250	132.351	132.454	132.557	132.660	132.318	131.831	131.345	130.860	130.583	130.565	130.548	130.530	130.512	131.356	132.506	133.117	132.953	132.788	132.632	132.609	132.610	132.612	132.613	132.332	131.934	131.535	
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	13	14	15	16

CUTTING AREA (SQ.M) = 5.076
FILLING AREA (SQ.M) = 3.047

CH. (KM):- 1+000
DESIGNED BED LEVEL = 130.563 M



EXIST. LEVEL (M)		131.599	131.891	132.021	132.151	132.330	132.417	132.459	132.487	132.470	132.305	131.978	131.229	131.030	131.047	131.063	131.079	131.096	132.528	132.473	132.419	132.364	132.309	132.254	132.203	132.136	132.126	132.184	132.242	132.302	131.963	131.476	
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	13	14	15	16	17

CUTTING AREA (SQ.M) = 8.731
FILLING AREA (SQ.M) = 2.421

CH. (KM):- 1+200
DESIGNED BED LEVEL = 130.521 M

LEGEND

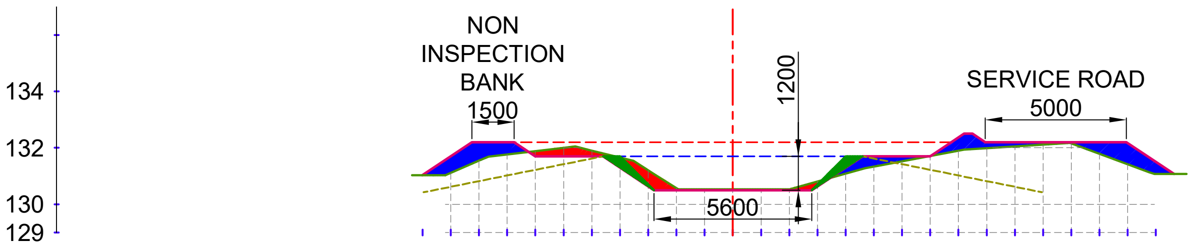
▨	CUT AREA	▭	EXISTING BED LINE
		▭	F.S.L.
▨	FILL AREA	▭	DESIGNED BED LINE
		▭	H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 3 of 41

X SECTION OF HETAMPUR DY.



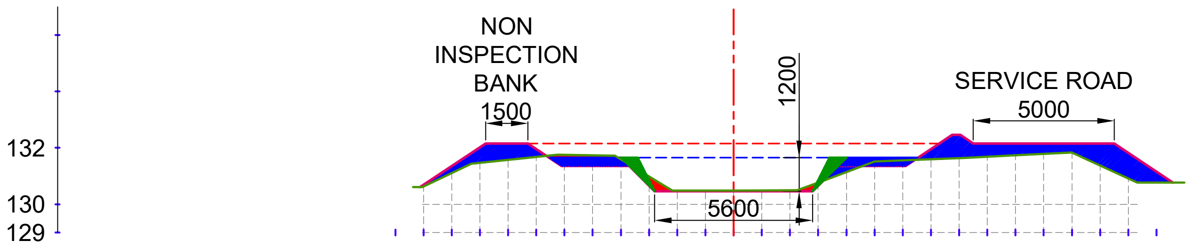
OFFSET (M)	EXIST. LEVEL (M)
-11	
-10	131.113
-9	131.546
-8	131.768
-7	131.884
-6	132.001
-5	131.901
-4	131.653
-3	131.203
-2	130.569
-1	130.527
0	130.529
1	130.531
2	130.533
3	130.808
4	131.086
5	131.337
6	131.525
7	131.712
8	131.900
9	131.987
10	132.049
11	132.111
12	132.152
13	131.786
14	131.419
15	

CUTTING AREA (SQ.M) = 1.571

FILLING AREA (SQ.M) = 5.085

CH. (KM):- 1+300

DESIGNED BED LEVEL = 130.499 M



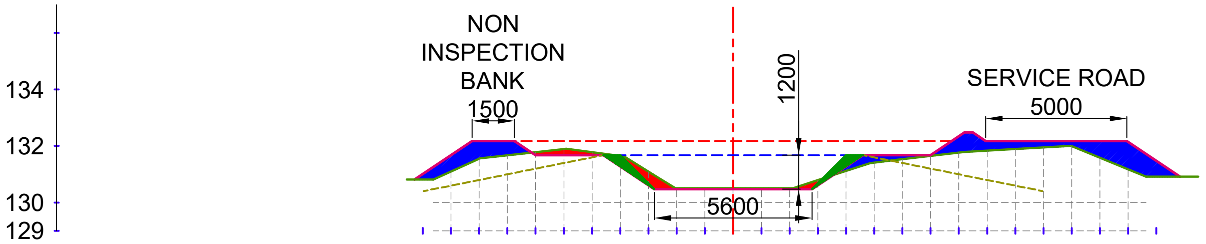
OFFSET (M)	EXIST. LEVEL (M)
-12	
-11	130.629
-10	131.103
-9	131.465
-8	131.570
-7	131.675
-6	131.750
-5	131.734
-4	131.591
-3	130.986
-2	130.485
-1	130.486
0	130.487
1	130.489
2	130.490
3	130.769
4	131.140
5	131.511
6	131.553
7	131.595
8	131.637
9	131.686
10	131.735
11	131.785
12	131.832
13	131.375
14	130.918
15	

CUTTING AREA (SQ.M) = 0.618

FILLING AREA (SQ.M) = 6.758

CH. (KM):- 1+500

DESIGNED BED LEVEL = 130.457 M



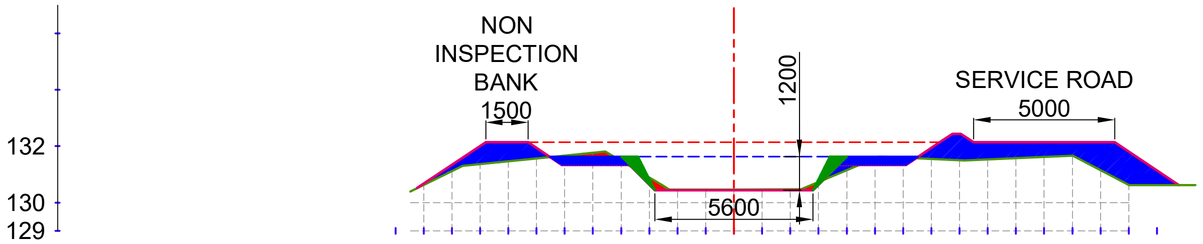
OFFSET (M)	EXIST. LEVEL (M)
-11	
-10	131.100
-9	131.555
-8	131.671
-7	131.782
-6	131.892
-5	131.779
-4	131.645
-3	131.091
-2	130.505
-1	130.507
0	130.508
1	130.510
2	130.511
3	130.795
4	131.120
5	131.414
6	131.532
7	131.650
8	131.769
9	131.836
10	131.892
11	131.948
12	131.991
13	131.585
14	131.179
15	

CUTTING AREA (SQ.M) = 1.142

FILLING AREA (SQ.M) = 6.448

CH. (KM):- 1+400

DESIGNED BED LEVEL = 130.478 M



OFFSET (M)	EXIST. LEVEL (M)
-12	
-11	130.629
-10	131.119
-9	131.366
-8	131.466
-7	131.565
-6	131.666
-5	131.768
-4	131.481
-3	130.886
-2	130.465
-1	130.466
0	130.466
1	130.467
2	130.468
3	130.732
4	131.148
5	131.564
6	131.591
7	131.549
8	131.506
9	131.535
10	131.578
11	131.622
12	131.666
13	131.151
14	130.626
15	

CUTTING AREA (SQ.M) = 0.520

FILLING AREA (SQ.M) = 8.178

CH. (KM):- 1+600

DESIGNED BED LEVEL = 130.436 M

LEGEND

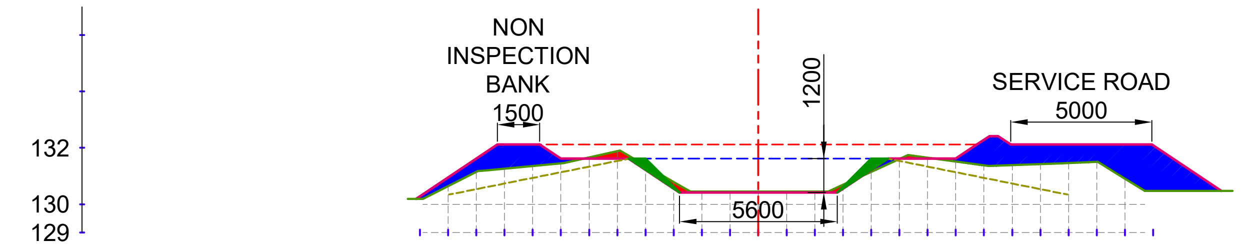
🟥	CUT AREA	▭	EXISTING BED LINE
		- - - -	F.S.L.
🟦	FILL AREA	▭	DESIGNED BED LINE
		- - - -	H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 4 of 41

X SECTION OF HETAMPUR DY.



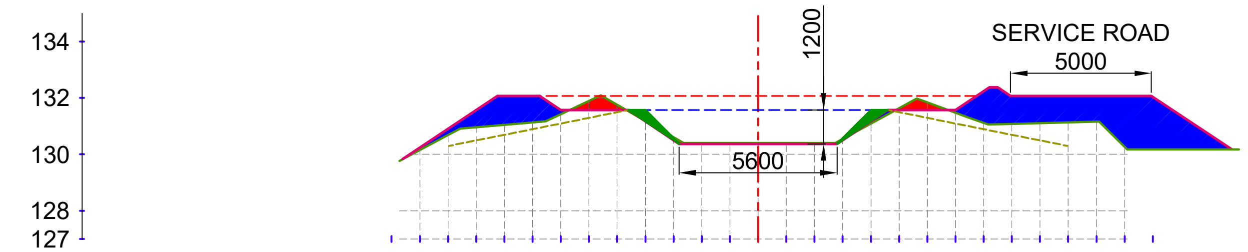
OFFSET (M)	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
EXIST. LEVEL (M)		130.641	131.146	131.264	131.358	131.451	131.661	131.885	131.376	130.789	130.445	130.445	130.446	130.446	130.447	130.684	131.143	131.603	131.649	131.511	131.374	131.384	131.422	131.460	131.498	130.903	

CUTTING AREA (SQ.M) = 0.697

FILLING AREA (SQ.M) = 10.710

CH. (KM):- 1+700

DESIGNED BED LEVEL = 130.414 M



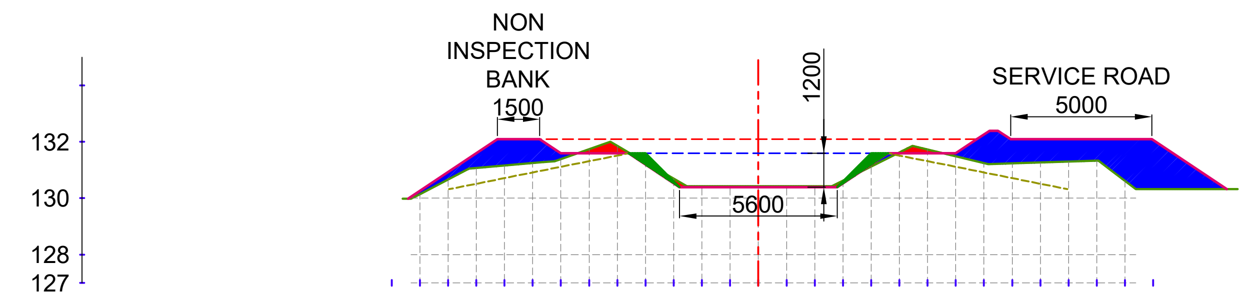
OFFSET (M)	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
EXIST. LEVEL (M)		130.156	130.687	130.964	131.047	131.129	131.421	131.894	131.759	131.185	130.610	130.404	130.404	130.404	130.404	130.404	130.548	131.091	131.634	131.840	131.477	131.115	131.081	131.108	131.135	131.162	130.257	

CUTTING AREA (SQ.M) = 1.105

FILLING AREA (SQ.M) = 13.715

CH. (KM):- 1+900

DESIGNED BED LEVEL = 130.372 M



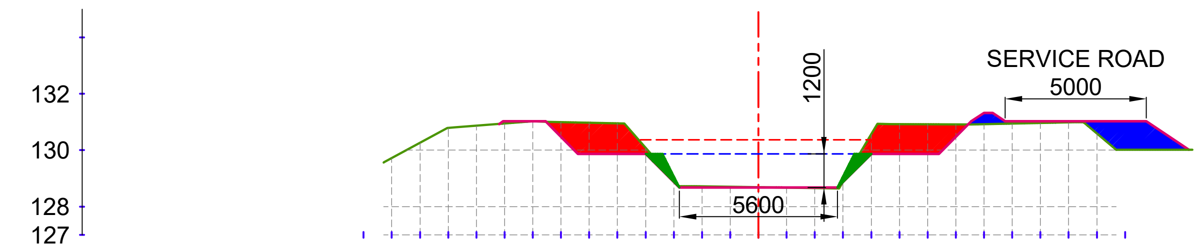
OFFSET (M)	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
EXIST. LEVEL (M)		130.144	130.663	131.069	131.158	131.246	131.392	131.739	131.855	131.274	130.694	130.424	130.424	130.425	130.425	130.425	130.625	131.127	131.629	131.728	131.485	131.242	131.233	131.265	131.297	131.330	130.614	

CUTTING AREA (SQ.M) = 0.863

FILLING AREA (SQ.M) = 12.222

CH. (KM):- 1+800

DESIGNED BED LEVEL = 130.393 M



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
EXIST. LEVEL (M)		129.720	130.263	130.791	130.868	130.945	131.021	130.999	130.977	130.954	130.082	128.939	128.716	128.701	128.687	128.672	128.657	128.886	130.565	130.927	130.921	130.915	130.922	130.943	130.964	130.985	130.591	

CUTTING AREA (SQ.M) = 6.200

FILLING AREA (SQ.M) = 2.999

CH. (KM):- 2+000

DESIGNED BED LEVEL = 128.674 M

LEGEND

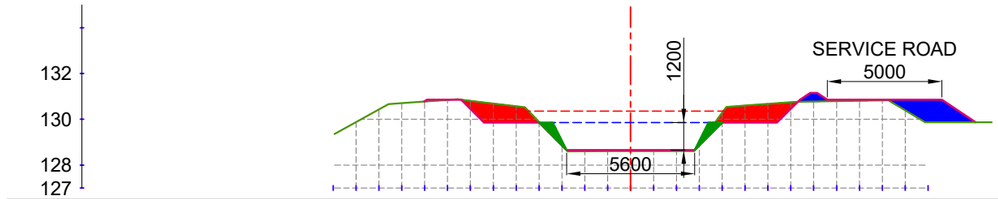
▨	CUT AREA	▭	EXISTING BED LINE
		┄	F.S.L.
▨	FILL AREA	▭	DESIGNED BED LINE
		┄	H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 5 of 41

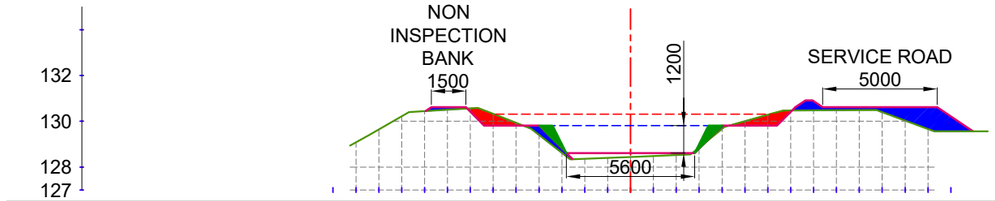
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)	129.874	130.427	130.701	130.772	130.843	130.808	130.689	130.570	129.884	128.851	128.601	128.603	128.605	128.608	128.610	128.916	130.292	130.599	130.673	130.747	130.777	130.793	130.809	130.824	130.389	
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	13

CUTTING AREA (SQ.M) = 4.316
FILLING AREA (SQ.M) = 2.741

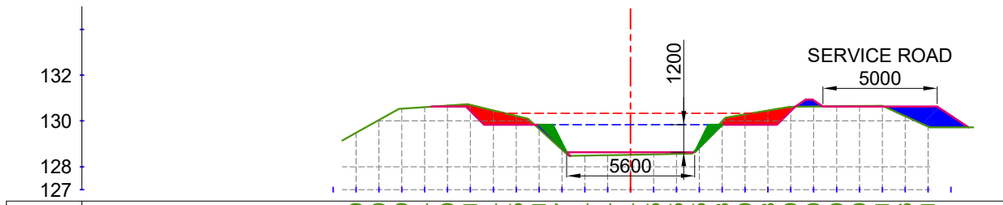
CH. (KM):- 2+100
DESIGNED BED LEVEL = 128.653 M



EXIST. LEVEL (M)	129.076	129.646	130.217	130.442	130.501	130.561	130.322	129.933	129.409	128.625	128.365	128.404	128.443	128.483	128.522	128.853	129.670	130.004	130.284	130.474	130.479	130.484	130.489	130.400	130.033	129.666	
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	13	14

CUTTING AREA (SQ.M) = 1.666
FILLING AREA (SQ.M) = 3.822

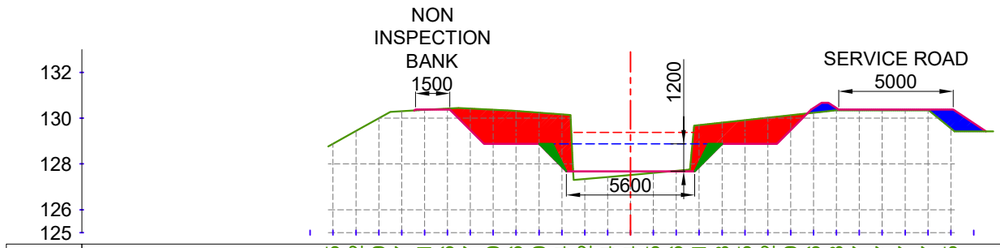
CH. (KM):- 2+300
DESIGNED BED LEVEL = 128.611 M



EXIST. LEVEL (M)	129.479	130.040	130.539	130.604	130.670	130.701	130.464	130.225	129.661	128.747	128.484	128.504	128.524	128.545	128.565	128.905	129.993	130.290	130.458	130.619	130.630	130.640	130.650	130.661	130.206	129.751	
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	13	14

CUTTING AREA (SQ.M) = 2.900
FILLING AREA (SQ.M) = 2.242

CH. (KM):- 2+200
DESIGNED BED LEVEL = 128.632 M



EXIST. LEVEL (M)	128.885	129.442	129.999	130.307	130.361	130.416	130.417	130.370	130.316	130.240	130.164	127.342	127.424	127.514	127.605	127.696	129.701	129.808	129.915	130.022	130.129	130.236	130.338	130.337	130.337	130.337	129.555	
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	15

CUTTING AREA (SQ.M) = 12.213
FILLING AREA (SQ.M) = 1.676

CH. (KM):- 2+400
DESIGNED BED LEVEL = 127.675 M

LEGEND

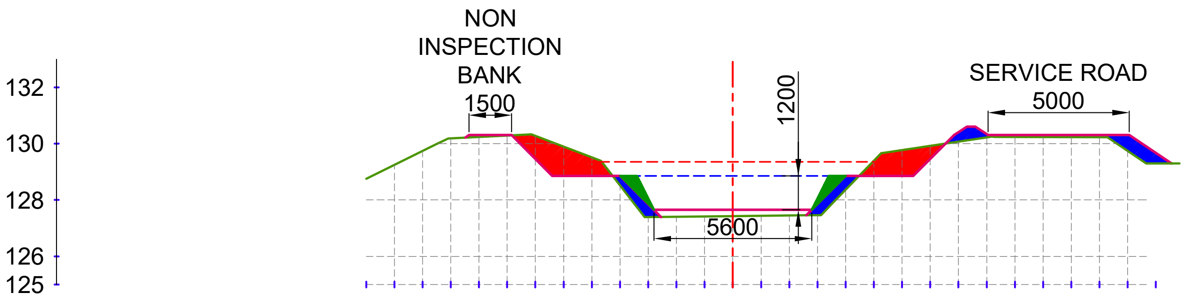
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

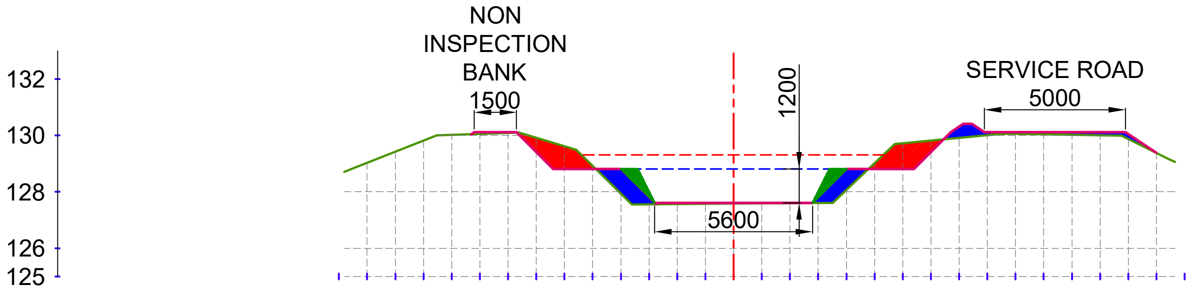
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



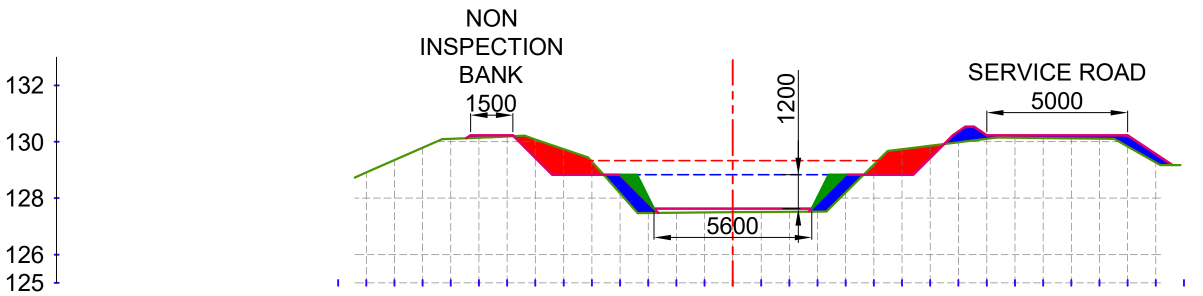
OFFSET (M)	EXIST. LEVEL (M)
-13	
-12	129.241
-11	129.735
-10	130.190
-9	130.238
-8	130.286
-7	130.273
-6	129.895
-5	129.516
-4	128.517
-3	127.390
-2	127.401
-1	127.413
0	127.424
1	127.436
2	127.447
3	127.459
4	128.362
5	129.397
6	129.774
7	129.922
8	130.071
9	130.219
10	130.241
11	130.235
12	130.230
13	130.225
14	129.745
15	

CUTTING AREA (SQ.M) = 4.474
FILLING AREA (SQ.M) = 3.042
CH. (KM):- 2+500
DESIGNED BED LEVEL = 127.654 M



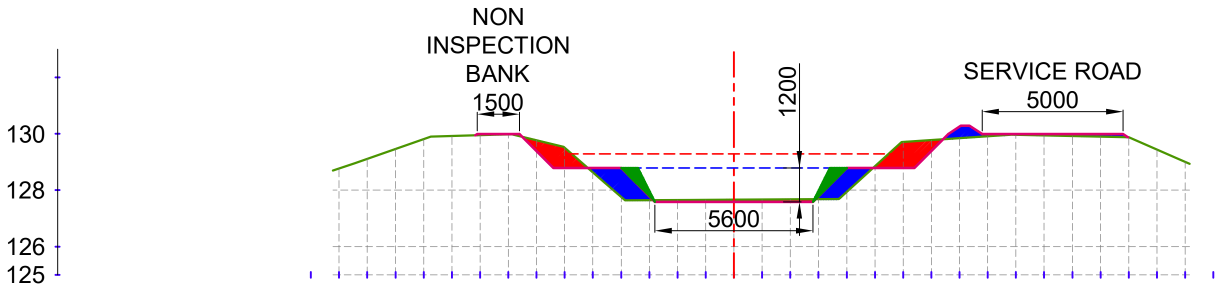
OFFSET (M)	EXIST. LEVEL (M)
-14	
-13	129.028
-12	129.420
-11	129.812
-10	130.015
-9	130.050
-8	130.086
-7	129.912
-6	129.612
-5	128.914
-4	127.935
-3	127.560
-2	127.567
-1	127.575
0	127.582
1	127.590
2	127.597
3	127.605
4	128.063
5	129.012
6	129.717
7	129.812
8	129.907
9	130.002
10	130.055
11	130.039
12	130.023
13	130.007
14	129.876
15	129.381
16	

CUTTING AREA (SQ.M) = 3.008
FILLING AREA (SQ.M) = 3.087
CH. (KM):- 2+700
DESIGNED BED LEVEL = 127.612 M



OFFSET (M)	EXIST. LEVEL (M)
-14	
-13	128.907
-12	129.347
-11	129.787
-10	130.104
-9	130.146
-8	130.187
-7	130.082
-6	129.739
-5	129.294
-4	128.177
-3	127.475
-2	127.484
-1	127.494
0	127.503
1	127.513
2	127.522
3	127.531
4	128.203
5	129.195
6	129.739
7	129.861
8	129.983
9	130.104
10	130.147
11	130.136
12	130.125
13	130.114
14	129.838
15	129.269
16	

CUTTING AREA (SQ.M) = 3.696
FILLING AREA (SQ.M) = 3.374
CH. (KM):- 2+600
DESIGNED BED LEVEL = 127.633 M



OFFSET (M)	EXIST. LEVEL (M)
-15	
-14	128.767
-13	129.116
-12	129.465
-11	129.815
-10	129.924
-9	129.952
-8	129.981
-7	129.772
-6	129.500
-5	128.633
-4	127.765
-3	127.644
-2	127.649
-1	127.655
0	127.661
1	127.667
2	127.672
3	127.678
4	127.939
5	128.848
6	129.706
7	129.774
8	129.843
9	129.911
10	129.965
11	129.944
12	129.923
13	129.901
14	129.879
15	129.440
16	129.001
17	

CUTTING AREA (SQ.M) = 2.827
FILLING AREA (SQ.M) = 2.998
CH. (KM):- 2+800
DESIGNED BED LEVEL = 127.590 M

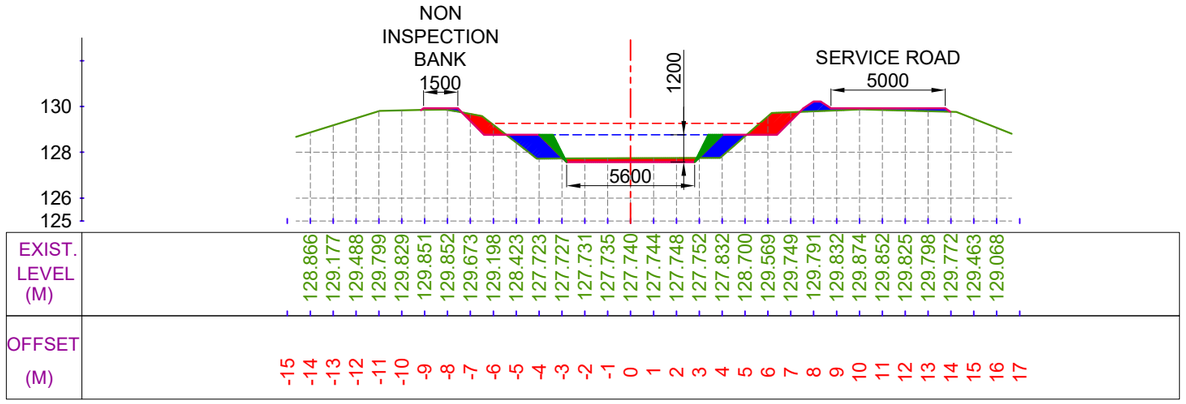
LEGEND

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

Prepared by :-
WAPCOS LTD.

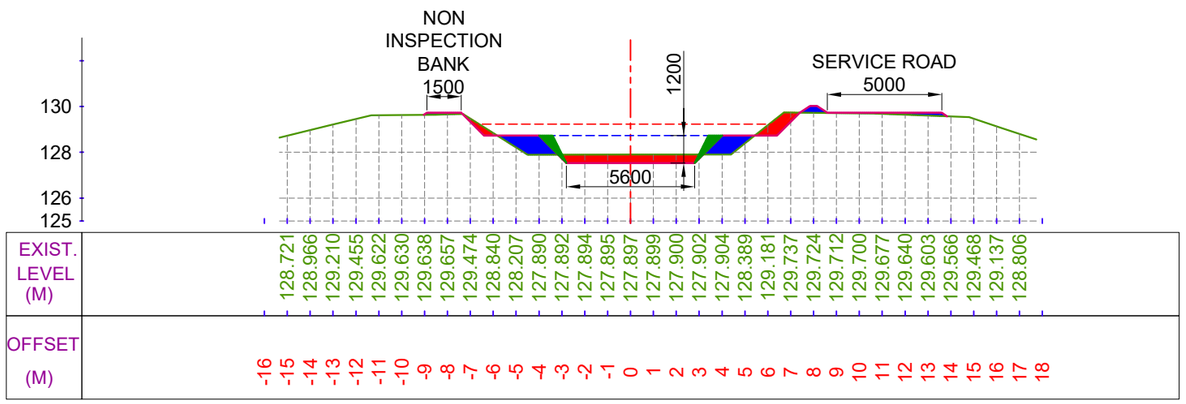
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 7 of 41

X SECTION OF HETAMPUR DY.



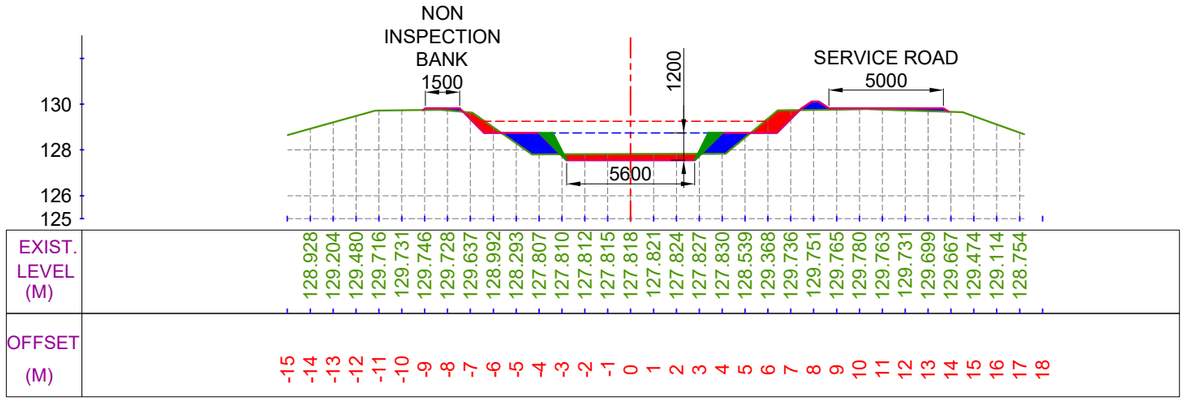
CUTTING AREA (SQ.M) = 2.918
FILLING AREA (SQ.M) = 3.323

CH. (KM):- 2+900
DESIGNED BED LEVEL = 127.569 M



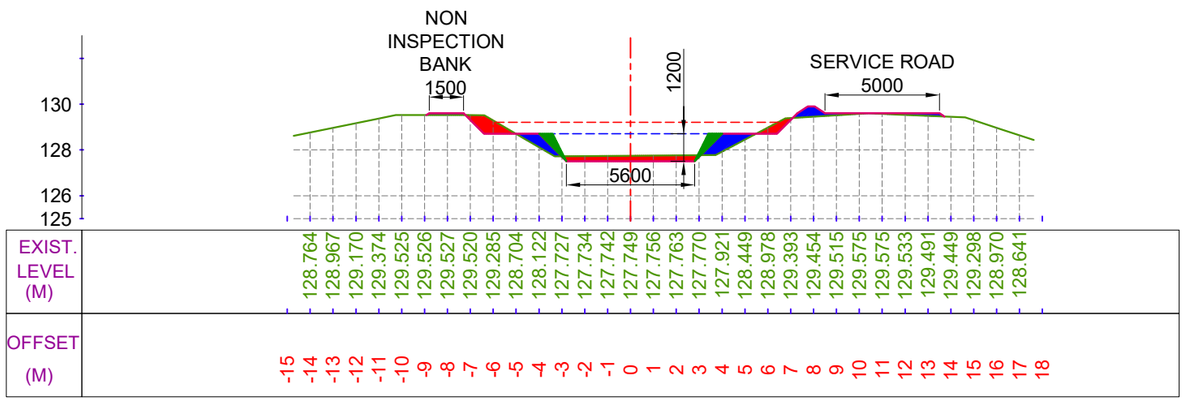
CUTTING AREA (SQ.M) = 3.286
FILLING AREA (SQ.M) = 3.073

CH. (KM):- 3+100
DESIGNED BED LEVEL = 127.526 M



CUTTING AREA (SQ.M) = 3.082
FILLING AREA (SQ.M) = 3.257

CH. (KM):- 3+000
DESIGNED BED LEVEL = 127.548 M



CUTTING AREA (SQ.M) = 2.710
FILLING AREA (SQ.M) = 2.542

CH. (KM):- 3+200
DESIGNED BED LEVEL = 127.505 M

LEGEND

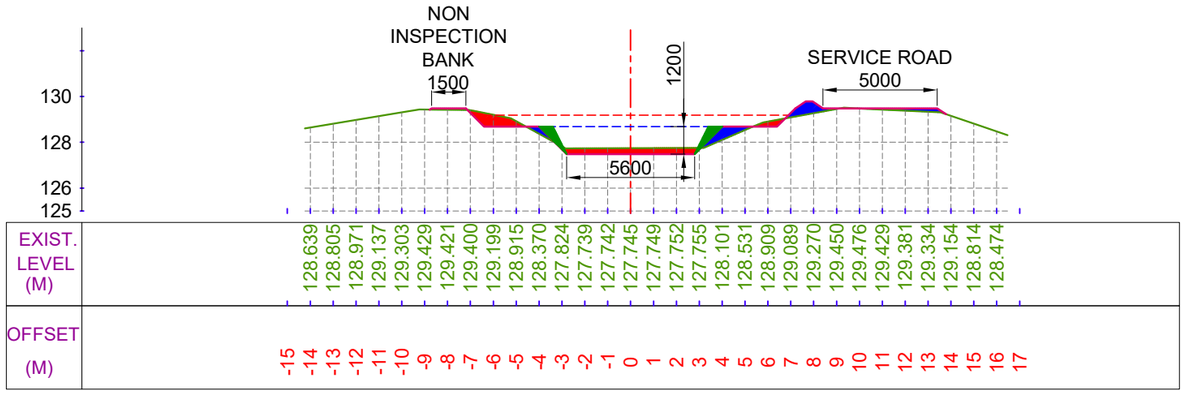
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

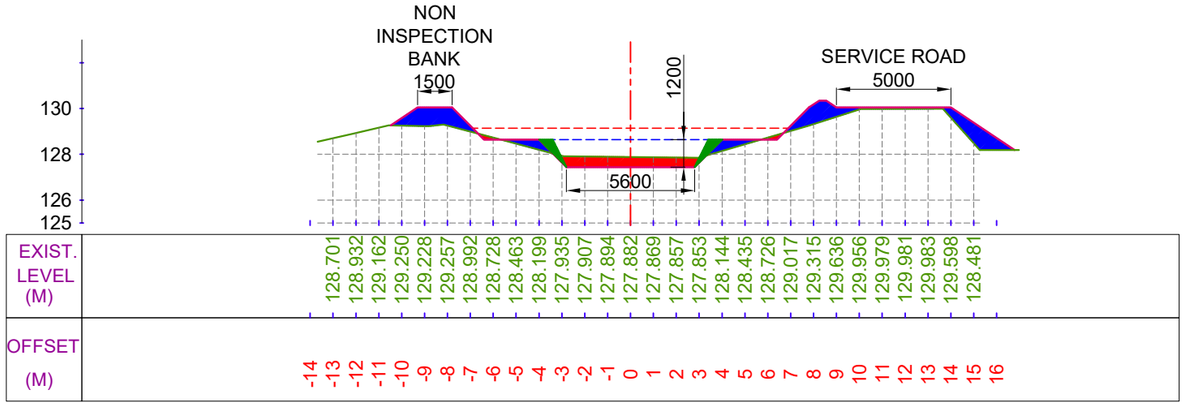
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 8 of 41

X SECTION OF HETAMPUR DY.



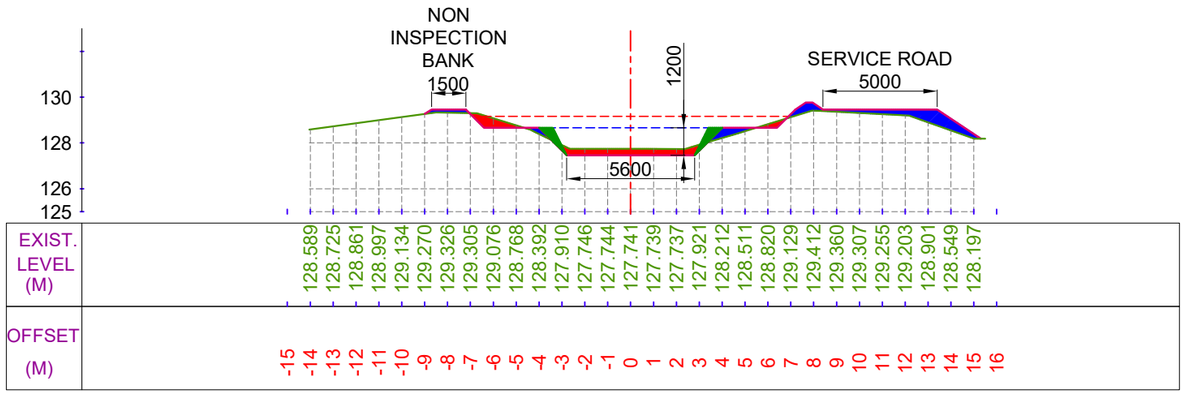
CUTTING AREA (SQ.M) = 2.640
FILLING AREA (SQ.M) = 1.975

CH. (KM):- 3+300
DESIGNED BED LEVEL = 127.484 M



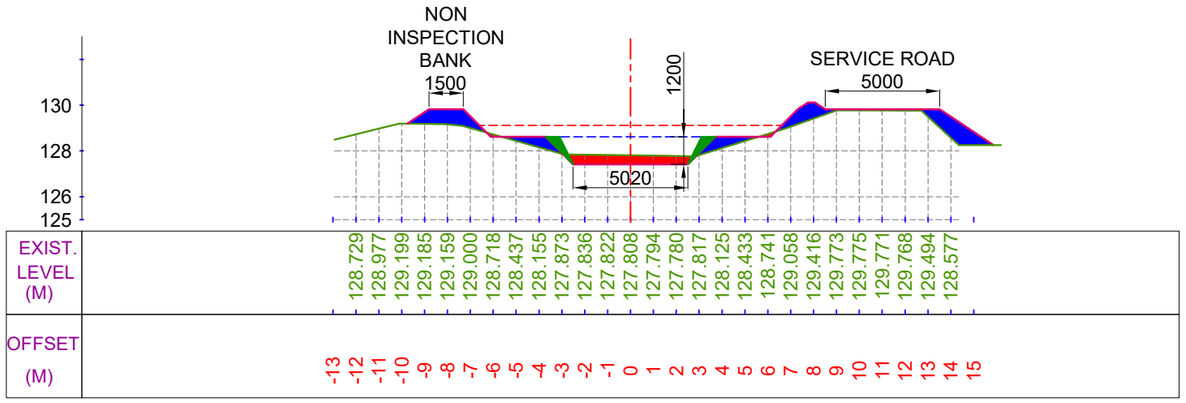
CUTTING AREA (SQ.M) = 2.762
FILLING AREA (SQ.M) = 6.858

CH. (KM):- 3+500
DESIGNED BED LEVEL = 127.441 M



CUTTING AREA (SQ.M) = 2.518
FILLING AREA (SQ.M) = 3.299

CH. (KM):- 3+400
DESIGNED BED LEVEL = 127.463 M



CUTTING AREA (SQ.M) = 2.121
FILLING AREA (SQ.M) = 6.387

CH. (KM):- 3+600
DESIGNED BED LEVEL = 127.420 M

LEGEND

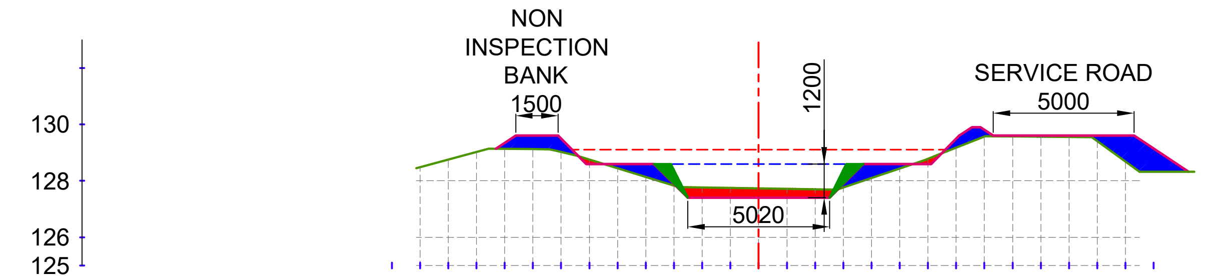
CUT AREA	EXISTING BED LINE	
	F.S.L.	
FILL AREA	DESIGNED BED LINE	
	H.G. LINE	

Prepared by :-

WAPCOS LTD.

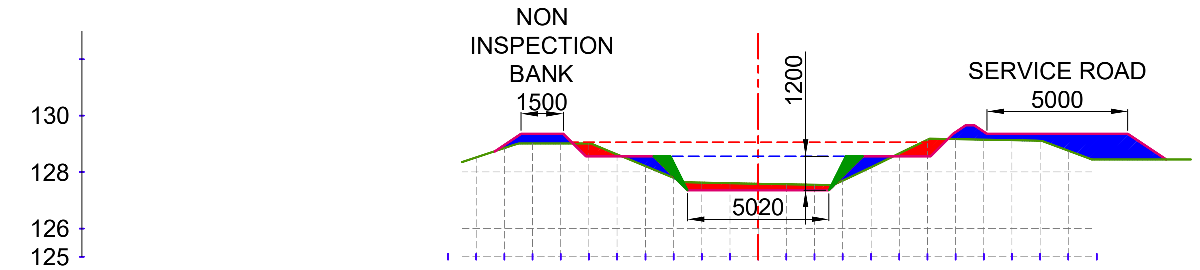
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 9 of 41

X SECTION OF HETAMPUR DY.



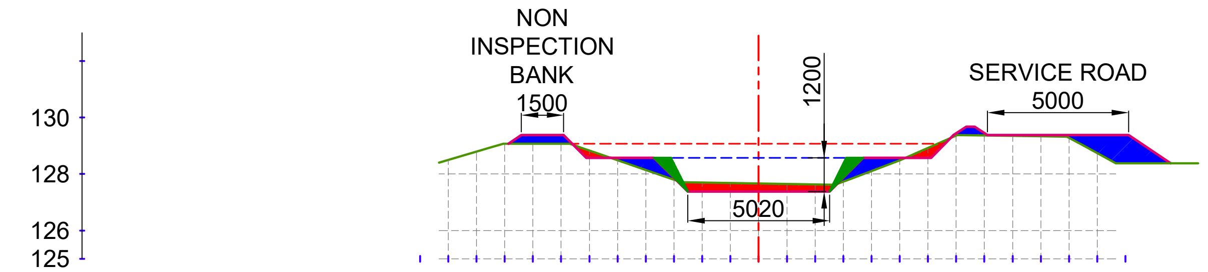
EXIST. LEVEL (M)		128.485	128.754	129.023	129.134	129.126	129.021	128.752	128.445	128.138	127.831	127.766	127.750	127.735	127.719	127.704	127.768	128.102	128.436	128.775	129.173	129.570	129.572	129.563	129.553	129.410	128.684	
OFFSET (M)	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

CUTTING AREA (SQ.M) = 1.931
FILLING AREA (SQ.M) = 5.362
CH. (KM):- 3+700
DESIGNED BED LEVEL = 127.399 M



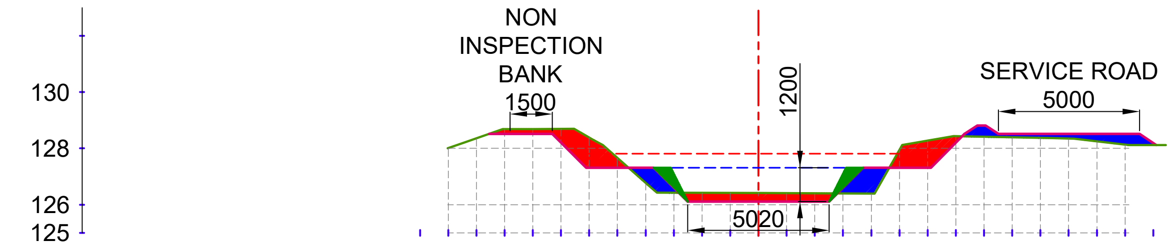
EXIST. LEVEL (M)		128.518	128.847	129.016	129.017	129.018	128.629	128.212	127.794	127.627	127.608	127.589	127.570	127.551	127.701	128.170	128.657	129.148	129.167	129.148	129.128	129.108	128.758	
OFFSET (M)	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12

CUTTING AREA (SQ.M) = 2.261
FILLING AREA (SQ.M) = 5.430
CH. (KM):- 3+900
DESIGNED BED LEVEL = 127.356 M



EXIST. LEVEL (M)		128.499	128.795	129.077	129.074	129.070	128.835	128.491	128.145	127.798	127.696	127.679	127.662	127.645	127.627	127.729	128.106	128.484	128.924	129.366	129.369	129.355	129.340	129.284	128.740	
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) = 1.983
FILLING AREA (SQ.M) = 4.328
CH. (KM):- 3+800
DESIGNED BED LEVEL = 127.377 M



EXIST. LEVEL (M)		128.008	128.356	128.681	128.687	128.692	128.389	127.658	126.774	126.422	126.419	126.416	126.412	126.409	126.406	126.403	126.399	127.950	128.274	128.430	128.411	128.392	128.373	128.354	128.254	128.135	
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	14

CUTTING AREA (SQ.M) = 5.347
FILLING AREA (SQ.M) = 3.314
CH. (KM):- 4+000
DESIGNED BED LEVEL = 126.115 M

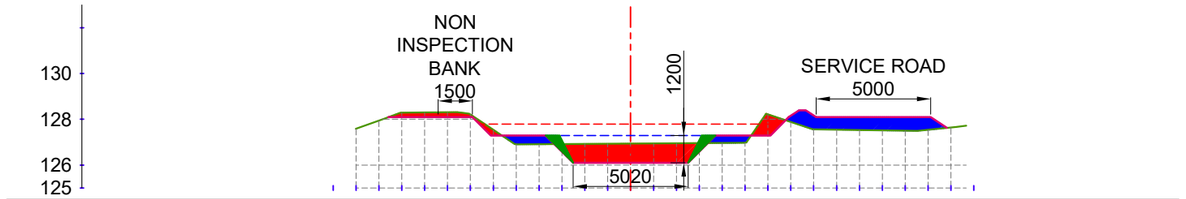
LEGEND

🟥	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 HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 10 of 41

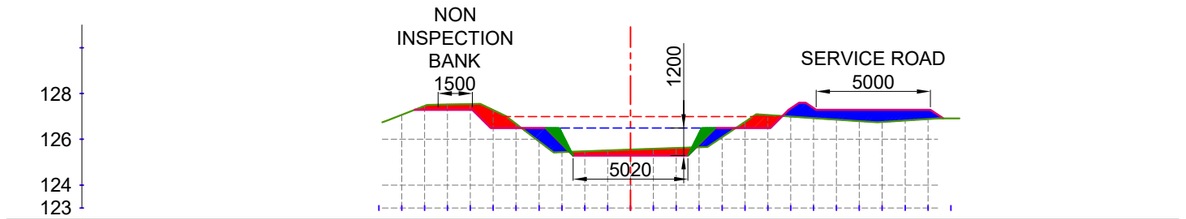
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)	127.584	127.945	128.288	128.298	128.309	128.203	127.538	126.905	126.907	126.914	126.921	126.928	126.935	126.942	126.950	126.957	126.962	126.977	128.216	127.884	127.565	127.548	127.531	127.514	127.497	127.538	127.644				
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	13	14	15		

CUTTING AREA (SQ.M) = 6.249
FILLING AREA (SQ.M) = 4.965

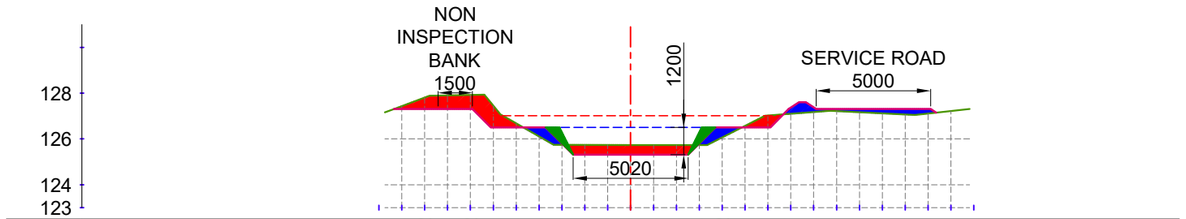
CH. (KM):- 4+100
DESIGNED BED LEVEL = 126.094 M



EXIST. LEVEL (M)	127.068	127.456	127.519	127.542	127.278	126.671	125.911	125.437	125.473	125.509	125.544	125.580	125.616	125.652	126.093	126.762	127.057	126.988	126.923	126.859	126.796	126.759	126.822	126.885							
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					

CUTTING AREA (SQ.M) = 3.725
FILLING AREA (SQ.M) = 4.591

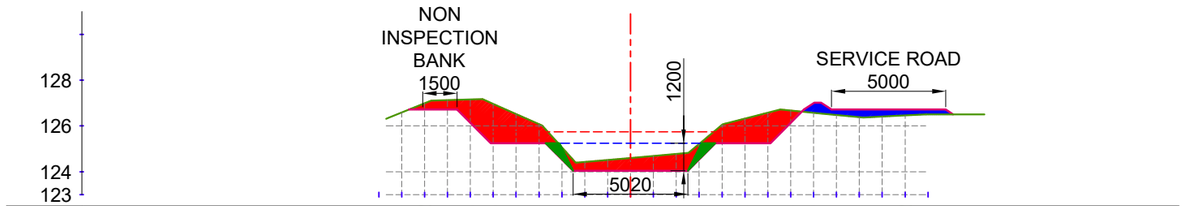
CH. (KM):- 4+300
DESIGNED BED LEVEL = 125.289 M



EXIST. LEVEL (M)	127.438	127.812	127.906	127.922	127.450	126.676	126.105	125.739	125.739	125.739	125.739	125.738	125.738	126.062	126.569	127.021	127.097	127.173	127.216	127.167	127.119	127.070	127.113	127.224							
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				

CUTTING AREA (SQ.M) = 5.720
FILLING AREA (SQ.M) = 2.492

CH. (KM):- 4+200
DESIGNED BED LEVEL = 125.310 M



EXIST. LEVEL (M)	126.590	126.992	127.126	127.155	126.965	126.523	126.081	125.070	124.430	124.516	124.603	124.689	124.775	125.216	126.051	126.323	126.579	126.676	126.579	126.481	126.384	126.410	126.462								
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) = 12.331
FILLING AREA (SQ.M) = 1.793

CH. (KM):- 4+400
DESIGNED BED LEVEL = 124.048 M

LEGEND

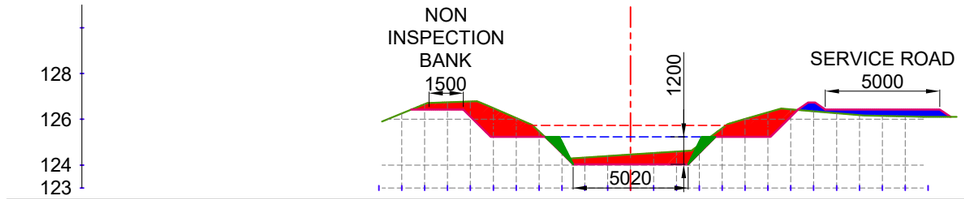
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

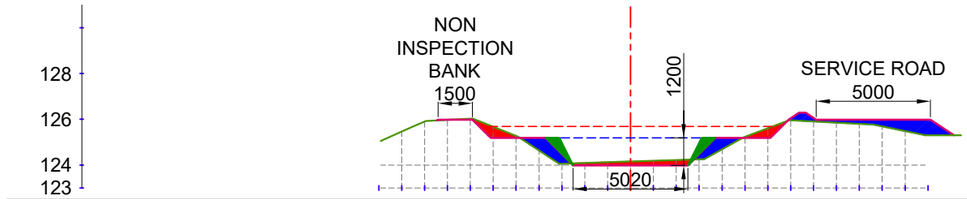
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)	126.253	126.668	126.744	126.779	126.484	126.054	125.470	124.537	124.330	124.395	124.460	124.525	124.590	124.882	125.614	126.010	126.298	126.431	126.349	126.267	126.185	126.149	126.125		
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) = 8.252
FILLING AREA (SQ.M) = 1.689

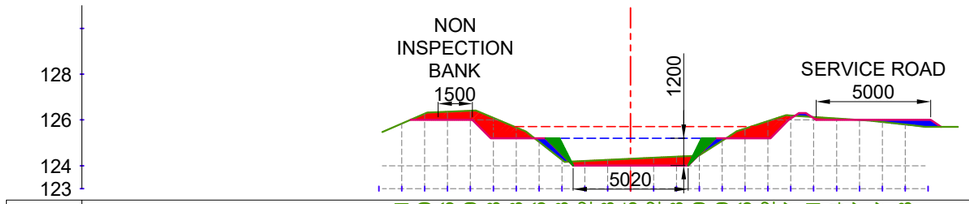
CH. (KM):- 4+500
DESIGNED BED LEVEL = 124.027 M



EXIST. LEVEL (M)	125.460	125.902	125.973	126.022	125.669	125.271	124.642	124.060	124.092	124.123	124.155	124.186	124.217	124.249	124.686	125.237	125.608	125.953	125.902	125.850	125.799	125.688	125.482		
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) = 1.934
FILLING AREA (SQ.M) = 3.892

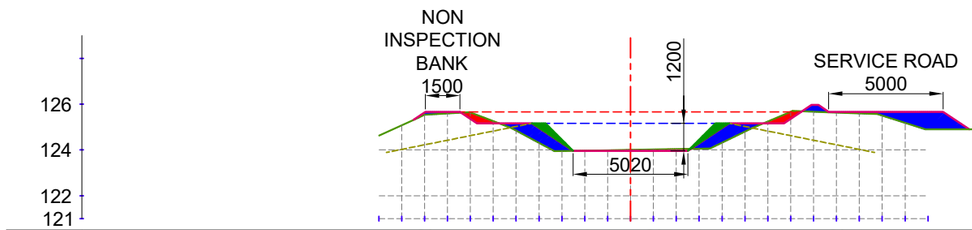
CH. (KM):- 4+700
DESIGNED BED LEVEL = 123.984 M



EXIST. LEVEL (M)	125.841	126.270	126.356	126.399	126.088	125.673	125.046	124.263	124.212	124.258	124.305	124.352	124.398	124.459	125.099	125.626	125.952	126.197	126.131	126.064	125.997	125.907	125.798		
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) = 5.340
FILLING AREA (SQ.M) = 1.180

CH. (KM):- 4+600
DESIGNED BED LEVEL = 124.005 M



EXIST. LEVEL (M)	125.080	125.532	125.590	125.634	125.258	124.843	124.305	123.950	123.968	123.986	124.004	124.022	124.041	124.059	124.320	124.799	125.241	125.666	125.669	125.632	125.596	125.497	125.180		
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) = 0.892
FILLING AREA (SQ.M) = 4.989

CH. (KM):- 4+800
DESIGNED BED LEVEL = 123.963 M

LEGEND

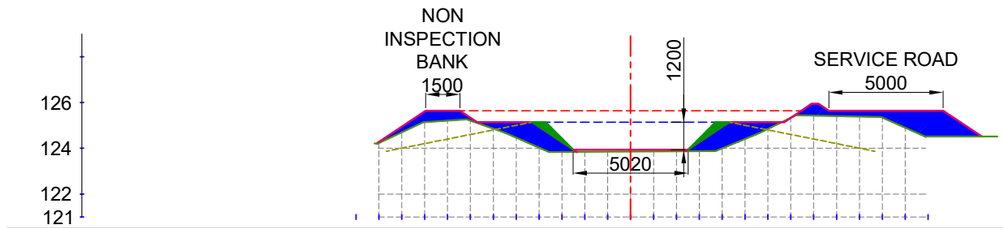
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

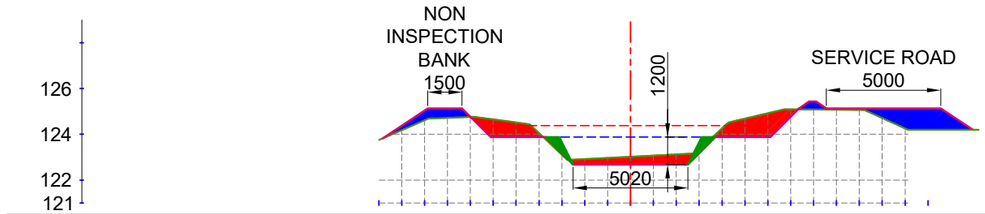
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 12 of 41

X SECTION OF HETAMPUR DY.



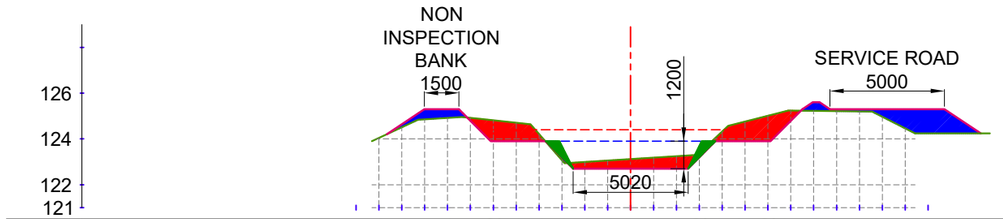
EXIST. LEVEL (M)	124.233	124.702	125.143	125.210	125.208	124.859	124.461	124.026	123.834	123.841	123.848	123.854	123.861	123.868	123.874	123.993	124.402	124.842	125.335	125.431	125.409	125.388	125.342	124.896	
OFFSET (M)	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13

CUTTING AREA (SQ.M) = 0.010
FILLING AREA (SQ.M) = 10.260
CH. (KM):- 4+900
DESIGNED BED LEVEL = 123.941 M



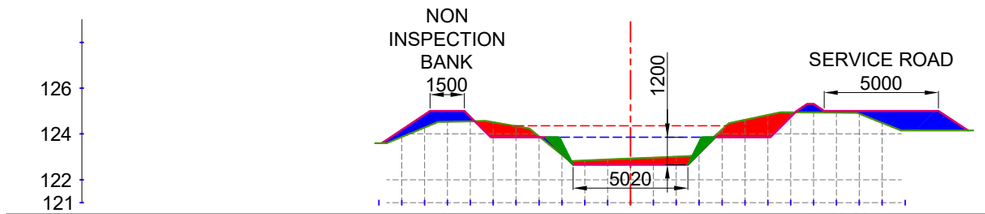
EXIST. LEVEL (M)	124.179	124.614	124.717	124.759	124.650	124.517	124.053	123.099	122.917	122.970	123.022	123.075	123.127	123.339	124.260	124.689	124.924	125.091	125.081	125.072	125.062	124.707	124.253		
OFFSET (M)	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13

CUTTING AREA (SQ.M) = 5.937
FILLING AREA (SQ.M) = 4.475
CH. (KM):- 5+100
DESIGNED BED LEVEL = 122.679 M



EXIST. LEVEL (M)	124.045	124.508	124.860	124.923	124.921	124.812	124.703	124.208	123.076	122.996	123.058	123.120	123.181	123.243	123.382	124.321	124.757	125.012	125.237	125.225	125.213	125.201	124.967	124.458	
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) = 7.088
FILLING AREA (SQ.M) = 4.792
CH. (KM):- 5+000
DESIGNED BED LEVEL = 122.700 M



EXIST. LEVEL (M)	123.869	124.279	124.532	124.553	124.509	124.338	123.896	123.091	122.841	122.883	122.925	122.967	123.009	123.293	124.198	124.620	124.831	124.945	124.939	124.932	124.882	124.481			
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	

CUTTING AREA (SQ.M) = 4.840
FILLING AREA (SQ.M) = 5.005
CH. (KM):- 5+200
DESIGNED BED LEVEL = 122.658 M

LEGEND

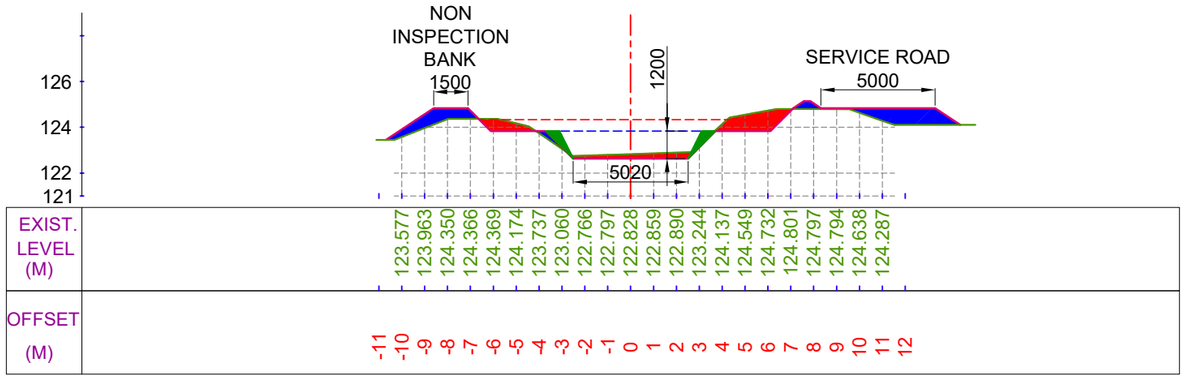
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

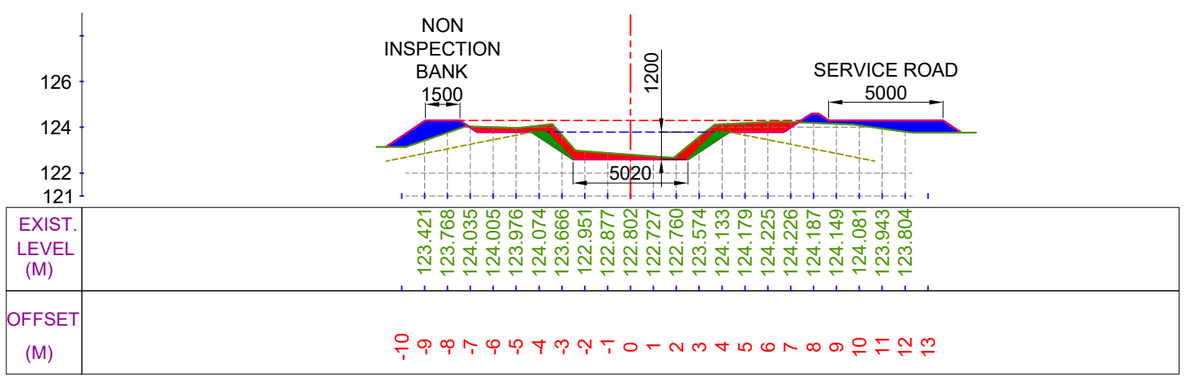
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



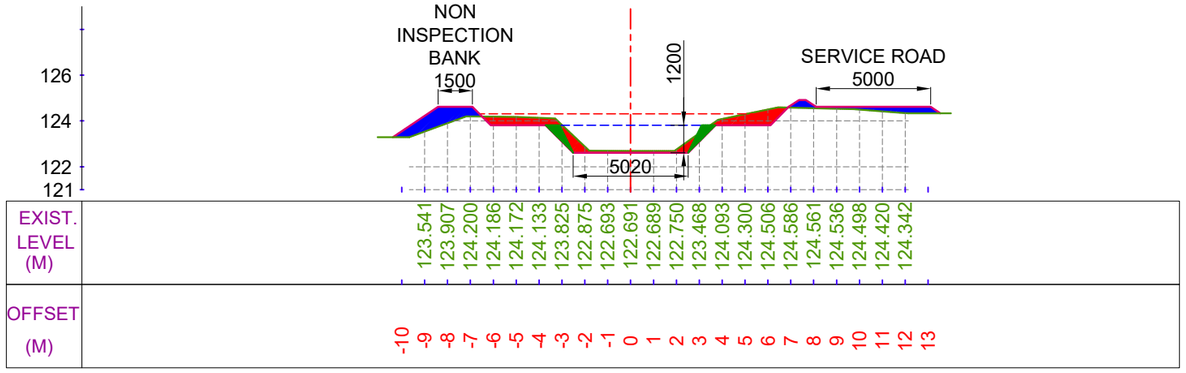
CUTTING AREA (SQ.M) = 3.821
FILLING AREA (SQ.M) = 4.772

CH. (KM):- 5+300
DESIGNED BED LEVEL = 122.636 M



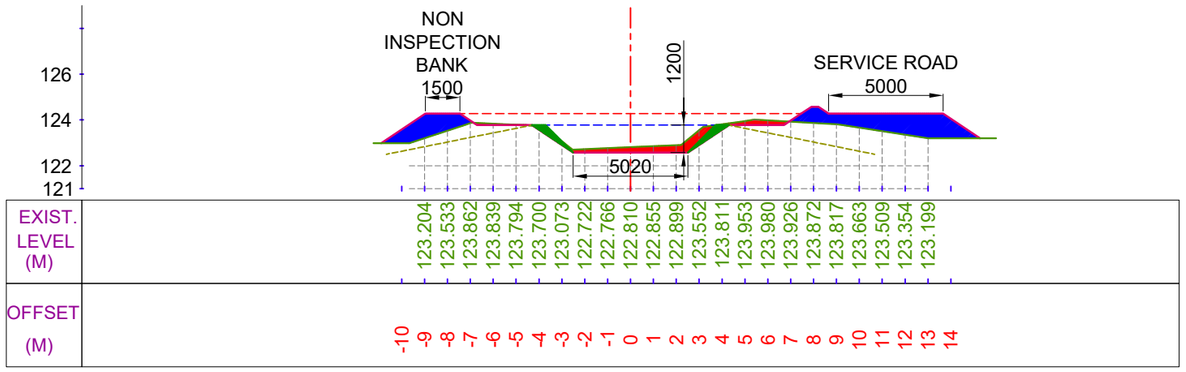
CUTTING AREA (SQ.M) = 4.479
FILLING AREA (SQ.M) = 4.198

CH. (KM):- 5+500
DESIGNED BED LEVEL = 122.594 M



CUTTING AREA (SQ.M) = 3.590
FILLING AREA (SQ.M) = 3.186

CH. (KM):- 5+400
DESIGNED BED LEVEL = 122.615 M



CUTTING AREA (SQ.M) = 2.320
FILLING AREA (SQ.M) = 8.131

CH. (KM):- 5+600
DESIGNED BED LEVEL = 122.573 M

LEGEND

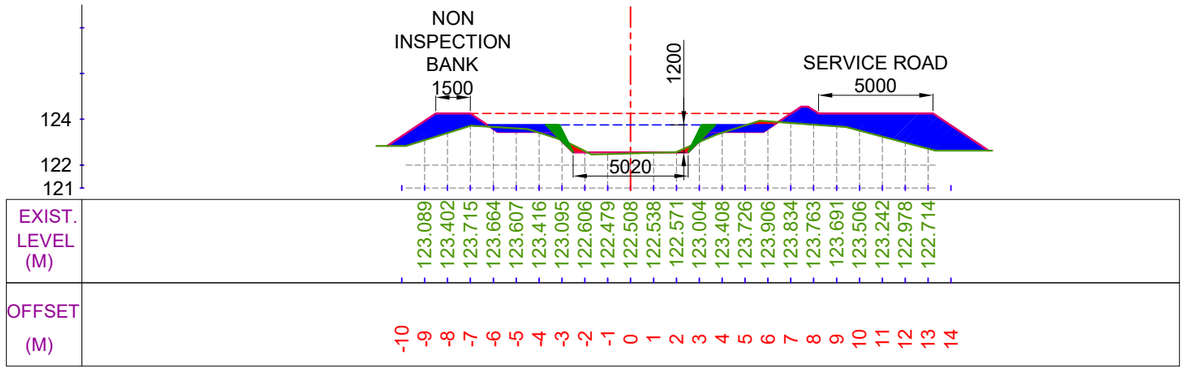
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

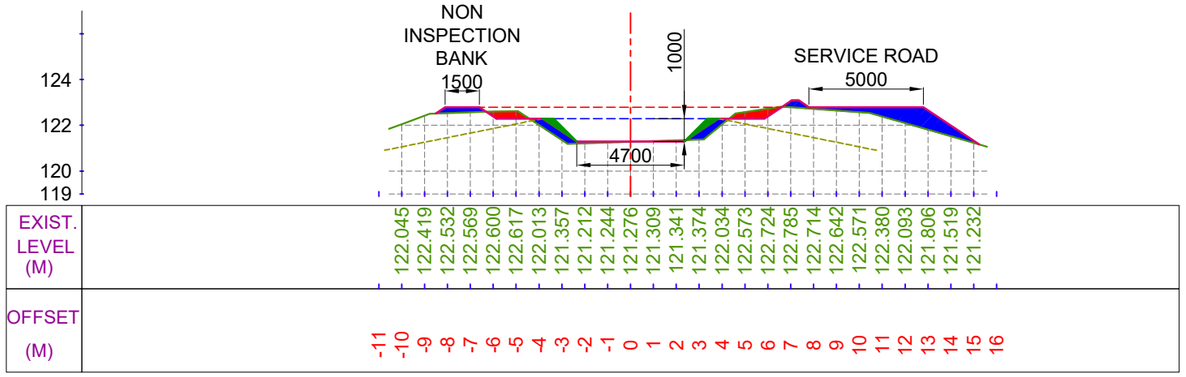
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 14 of 41

X SECTION OF HETAMPUR DY.



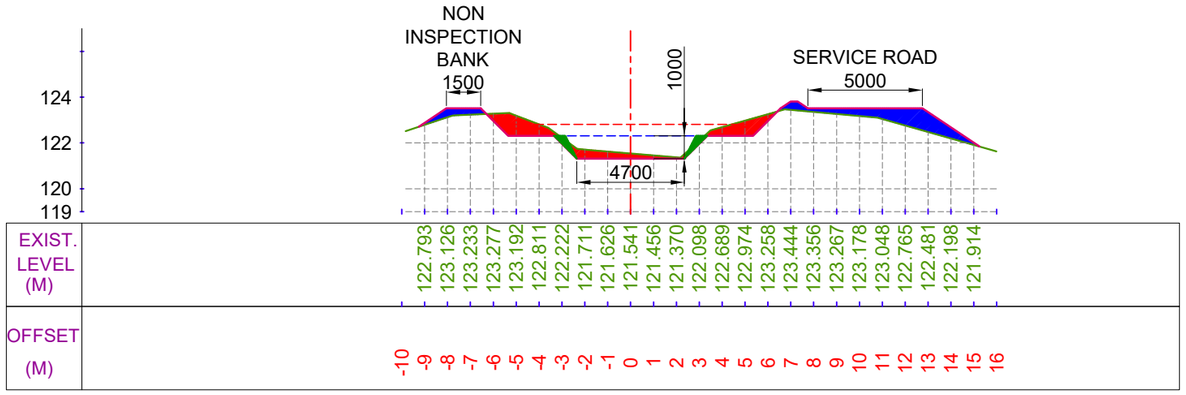
CUTTING AREA (SQ.M) = 0.381
FILLING AREA (SQ.M) = 10.567

CH. (KM):- 5+700
DESIGNED BED LEVEL = 122.551 M



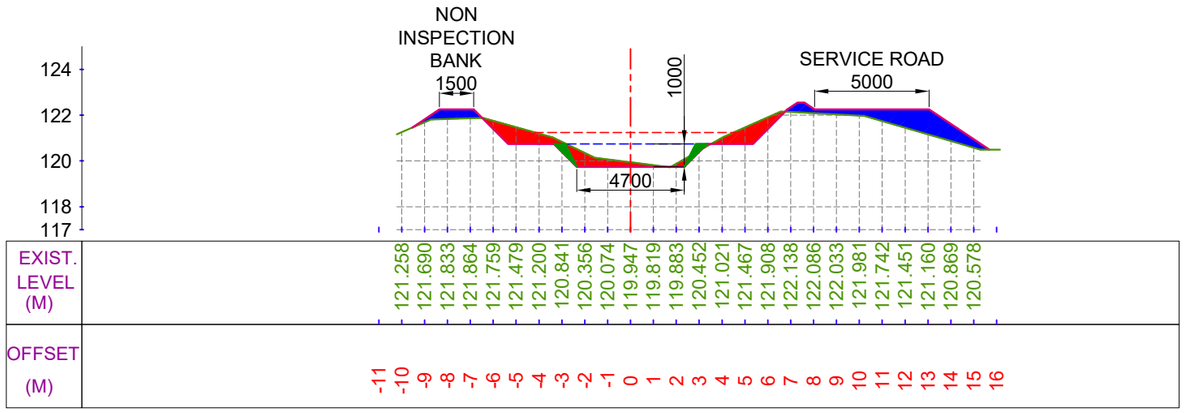
CUTTING AREA (SQ.M) = 1.113
FILLING AREA (SQ.M) = 4.869

CH. (KM):- 5+900
DESIGNED BED LEVEL = 121.289 M



CUTTING AREA (SQ.M) = 4.310
FILLING AREA (SQ.M) = 4.393

CH. (KM):- 5+800
DESIGNED BED LEVEL = 121.310 M



CUTTING AREA (SQ.M) = 4.588
FILLING AREA (SQ.M) = 5.277

CH. (KM):- 6+000
DESIGNED BED LEVEL = 119.747 M

LEGEND

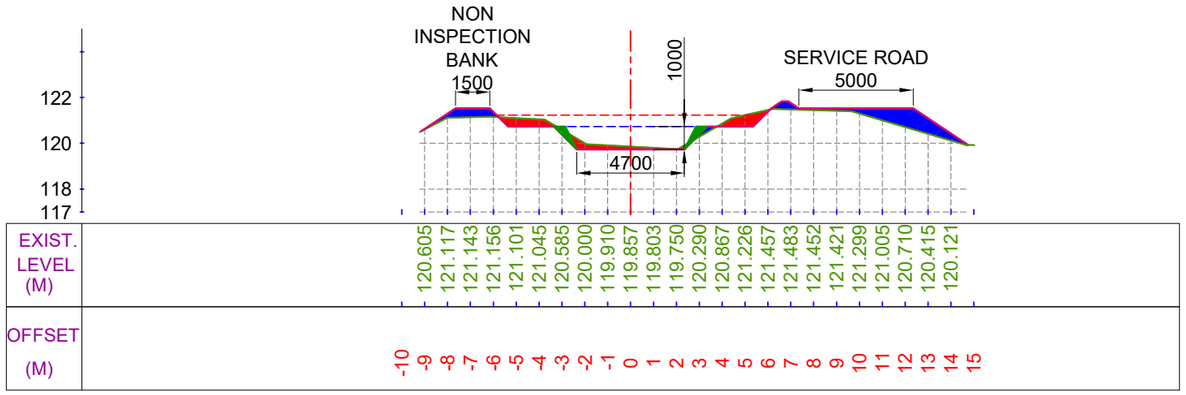
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

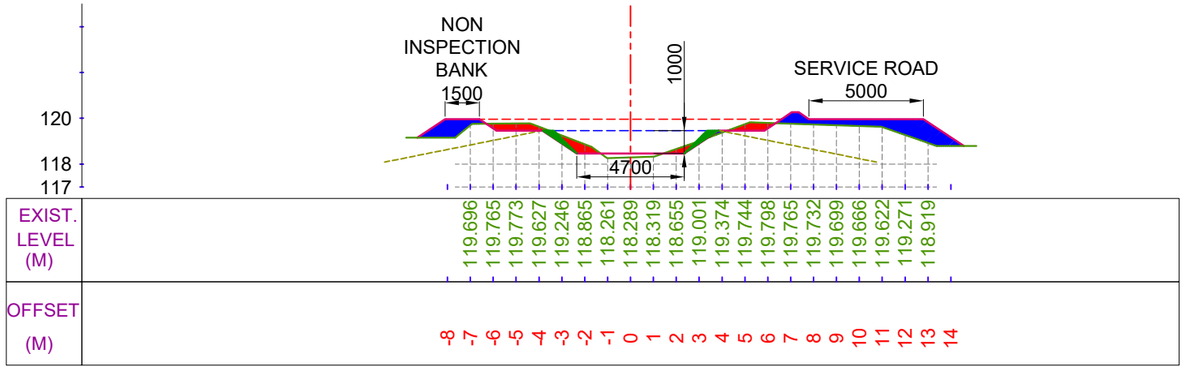
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



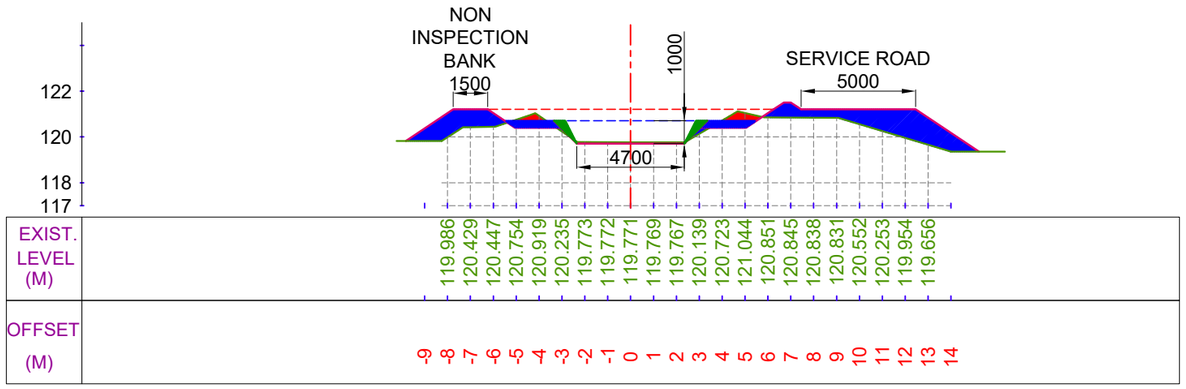
CUTTING AREA (SQ.M) = 2.285
FILLING AREA (SQ.M) = 3.968

CH. (KM):- 6+100
DESIGNED BED LEVEL = 119.726 M



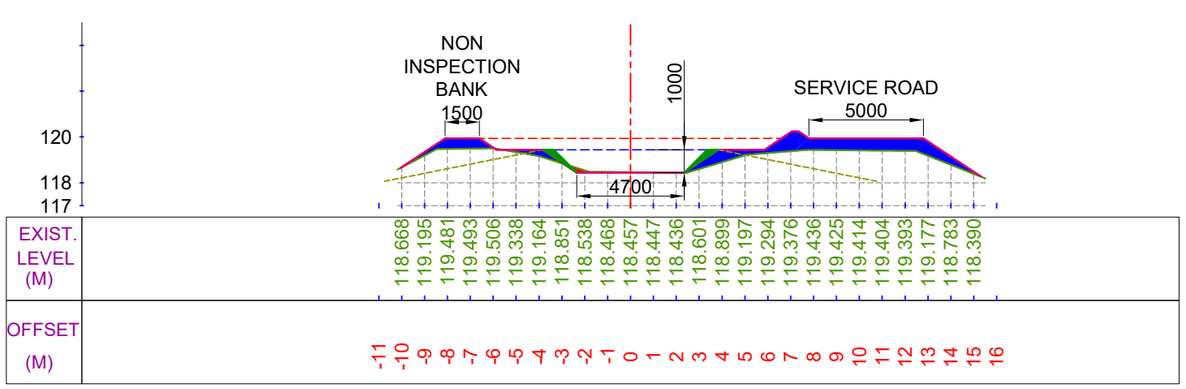
CUTTING AREA (SQ.M) = 1.894
FILLING AREA (SQ.M) = 4.931

CH. (KM):- 6+300
DESIGNED BED LEVEL = 118.464 M



CUTTING AREA (SQ.M) = 0.987
FILLING AREA (SQ.M) = 9.614

CH. (KM):- 6+200
DESIGNED BED LEVEL = 119.705 M



CUTTING AREA (SQ.M) = 0.153
FILLING AREA (SQ.M) = 7.364

CH. (KM):- 6+400
DESIGNED BED LEVEL = 118.442 M

LEGEND

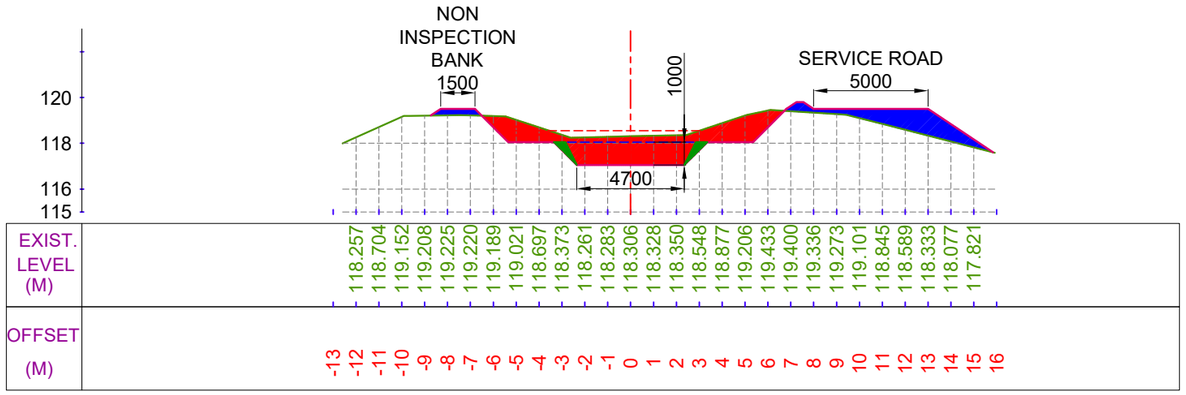
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

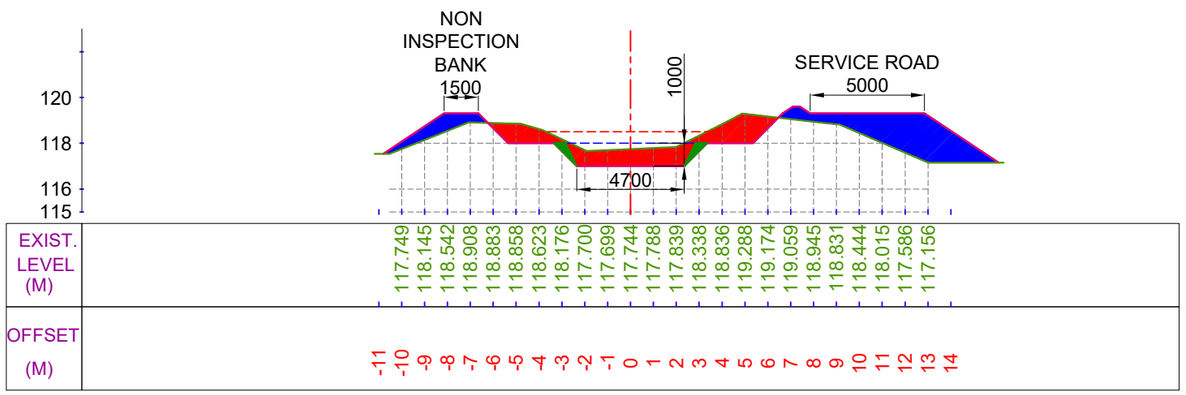
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 16 of 41

X SECTION OF HETAMPUR DY.



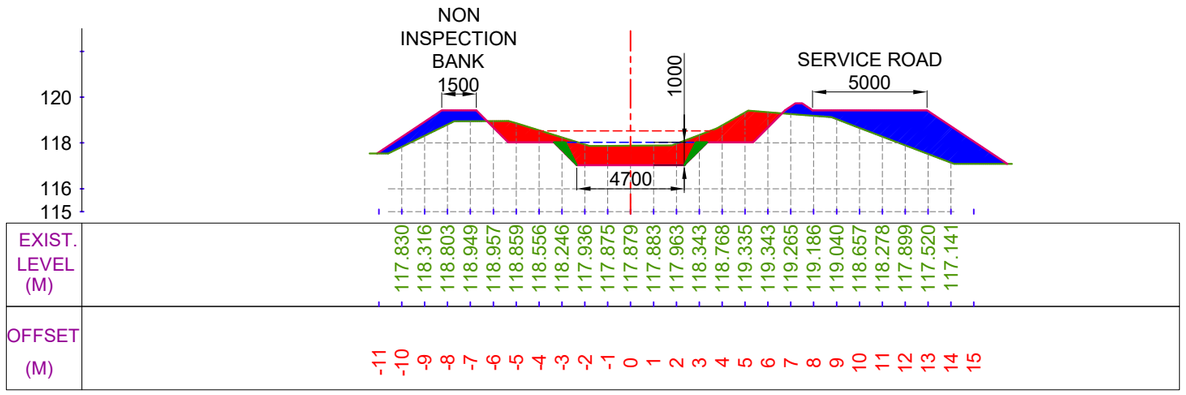
CUTTING AREA (SQ.M) = 12.111
FILLING AREA (SQ.M) = 5.374

CH. (KM):- 6+500
DESIGNED BED LEVEL = 117.049 M



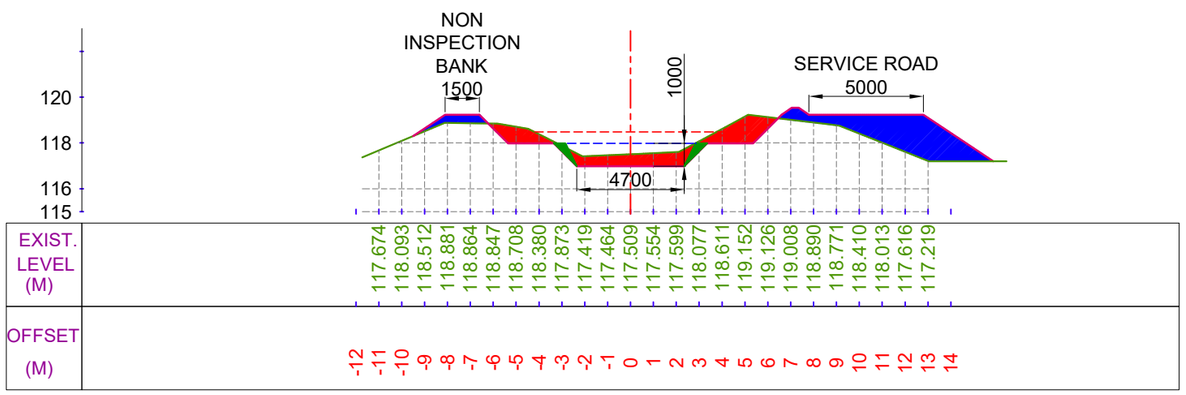
CUTTING AREA (SQ.M) = 8.812
FILLING AREA (SQ.M) = 11.514

CH. (KM):- 6+700
DESIGNED BED LEVEL = 117.006 M



CUTTING AREA (SQ.M) = 9.480
FILLING AREA (SQ.M) = 11.349

CH. (KM):- 6+600
DESIGNED BED LEVEL = 117.028 M



CUTTING AREA (SQ.M) = 6.511
FILLING AREA (SQ.M) = 9.454

CH. (KM):- 6+800
DESIGNED BED LEVEL = 116.985 M

LEGEND

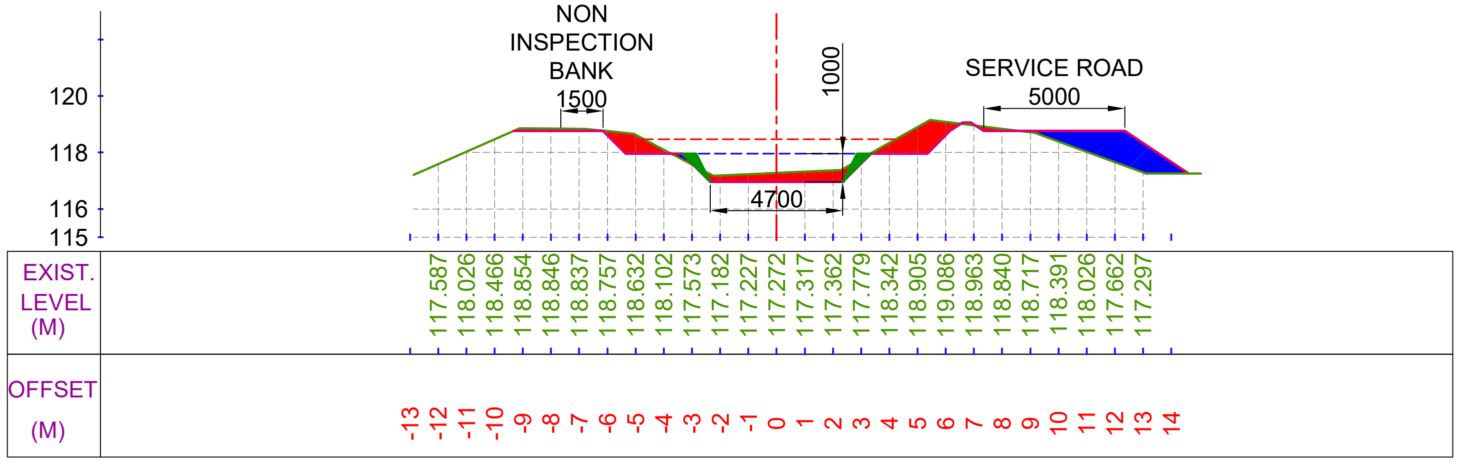
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

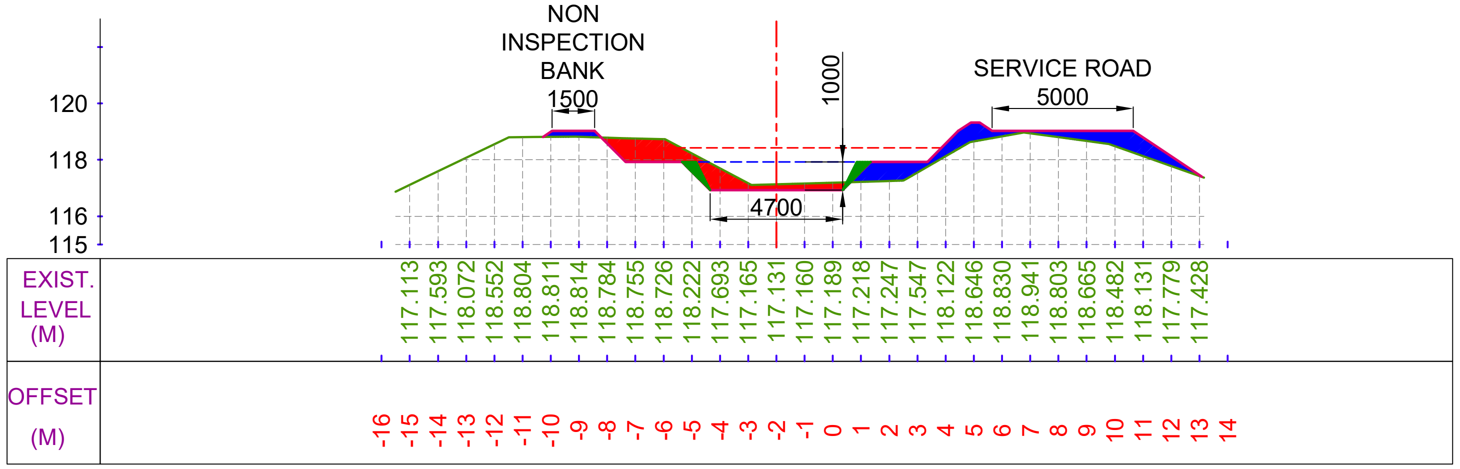
WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 17 of 41

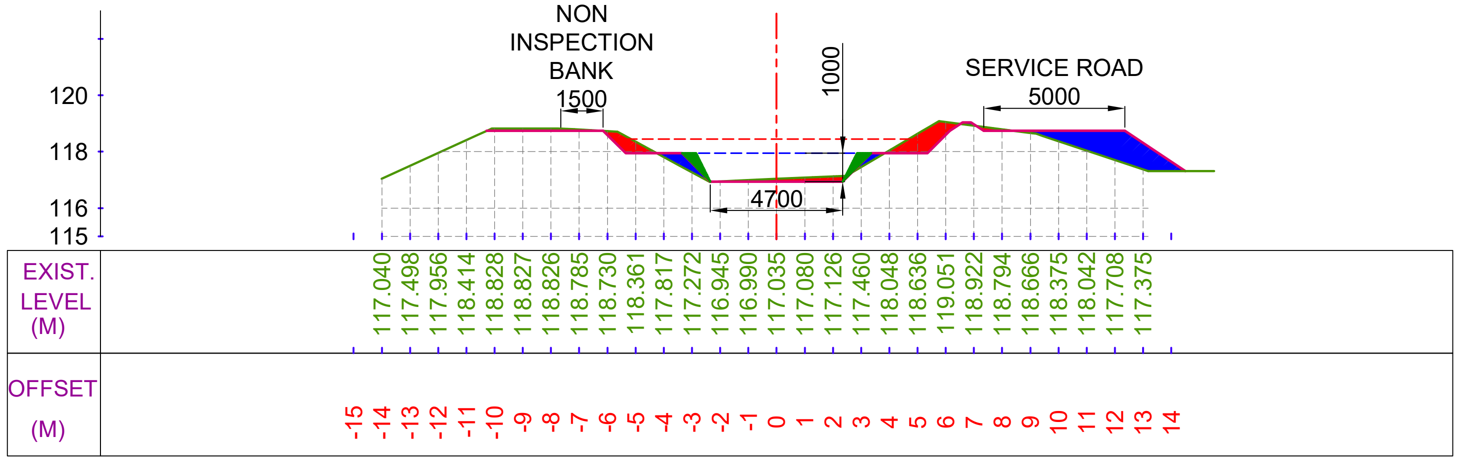
X SECTION OF HETAMPUR DY.



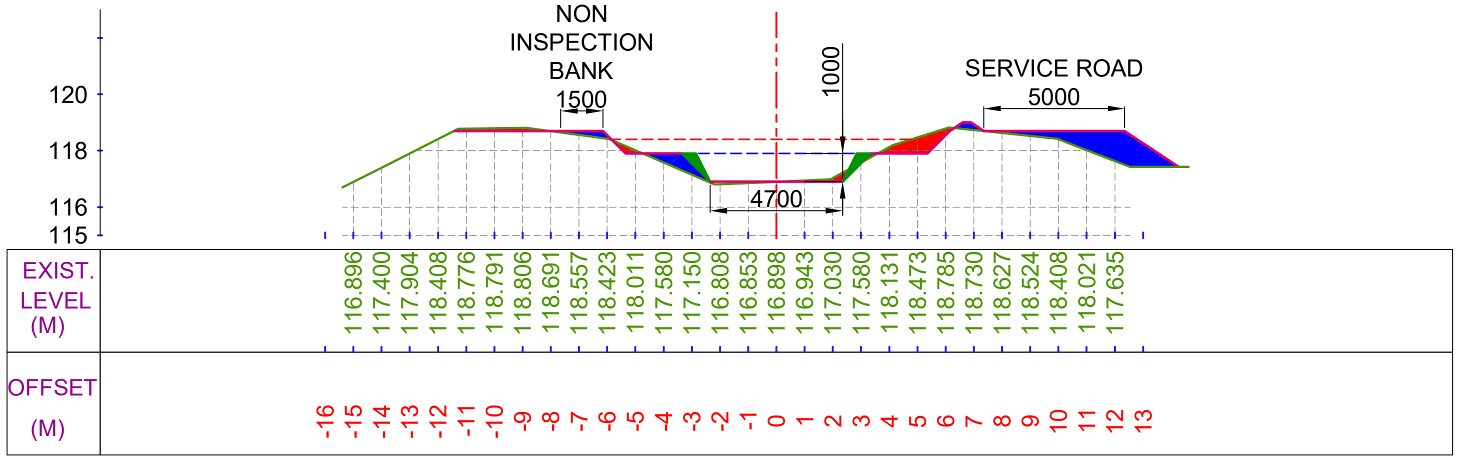
CUTTING AREA (SQ.M) = 4.666
FILLING AREA (SQ.M) = 3.796
CH. (KM):- 6+900
DESIGNED BED LEVEL = 116.964 M



CUTTING AREA (SQ.M) = 3.982
FILLING AREA (SQ.M) = 5.306
CH. (KM):- 7+100
DESIGNED BED LEVEL = 116.921 M



CUTTING AREA (SQ.M) = 2.689
FILLING AREA (SQ.M) = 4.095
CH. (KM):- 7+000
DESIGNED BED LEVEL = 116.943 M



CUTTING AREA (SQ.M) = 1.625
FILLING AREA (SQ.M) = 4.558
CH. (KM):- 7+200
DESIGNED BED LEVEL = 116.900 M

LEGEND

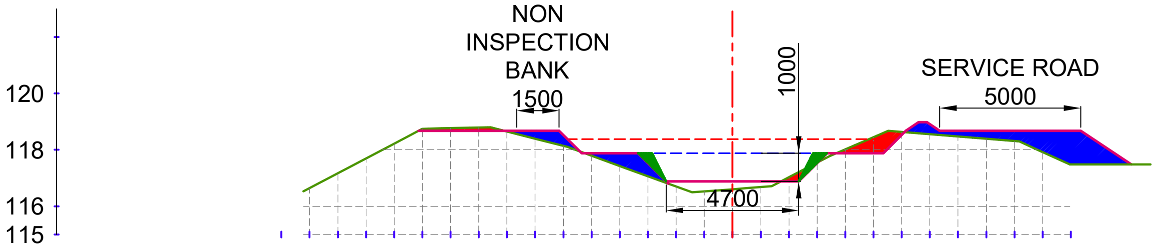
▨	CUT AREA	▭	EXISTING BED LINE
		- - -	F.S.L.
▨	FILL AREA	▭	DESIGNED BED LINE
		- - -	H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 18 of 41

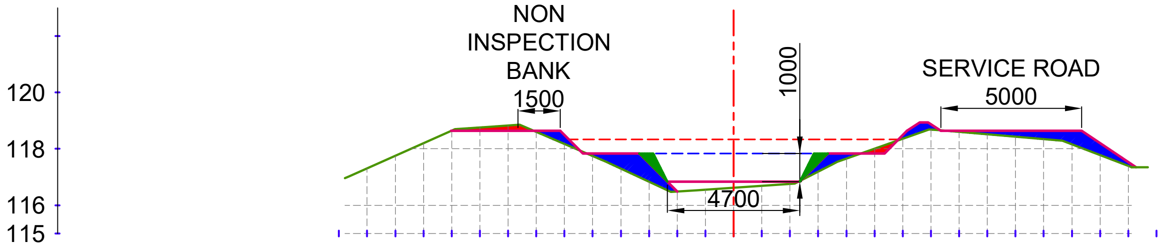
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)		116.641	117.169	117.696	118.224	118.744	118.766	118.789	118.651	118.395	118.139	117.791	117.428	117.064	116.701	116.526	116.602	116.678	117.025	117.548	118.018	118.447	118.632	118.551	118.471	118.390	118.310	117.923	
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) = 1.293
FILLING AREA (SQ.M) = 5.751

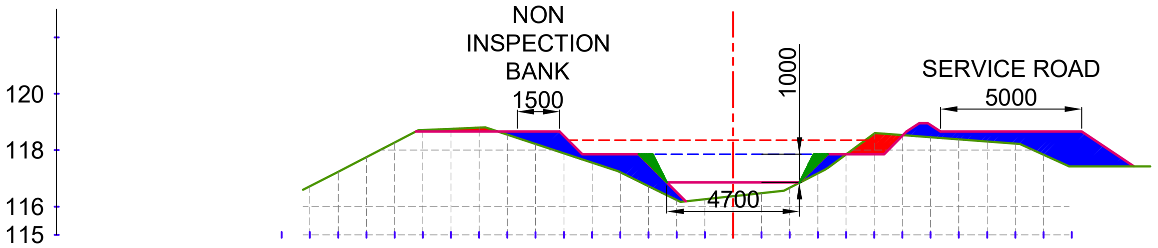
CH. (KM):- 7+300
DESIGNED BED LEVEL = 116.879 M



EXIST. LEVEL (M)		117.308	117.753	118.199	118.644	118.756	118.823	118.596	118.169	117.741	117.296	116.835	116.489	116.555	116.620	116.686	116.752	117.189	117.651	118.004	118.357	118.683	118.598	118.512	118.427	118.341	118.156	117.777	117.397	
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	15

CUTTING AREA (SQ.M) = 0.558
FILLING AREA (SQ.M) = 4.224

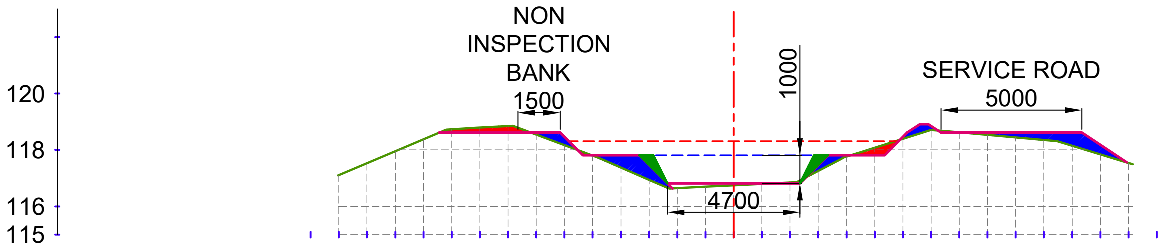
CH. (KM):- 7+500
DESIGNED BED LEVEL = 116.836 M



EXIST. LEVEL (M)		116.720	117.237	117.754	118.271	118.713	118.759	118.804	118.552	118.222	117.891	117.559	117.214	116.725	116.237	116.261	116.369	116.478	116.666	117.181	117.851	118.591	118.533	118.460	118.386	118.312	118.238	117.842	
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) = 1.145
FILLING AREA (SQ.M) = 8.017

CH. (KM):- 7+400
DESIGNED BED LEVEL = 116.858 M



EXIST. LEVEL (M)		117.102	117.527	117.952	118.377	118.733	118.790	118.848	118.547	118.172	117.796	117.374	116.940	116.644	116.694	116.745	116.796	116.846	117.260	117.761	118.080	118.398	118.711	118.622	118.534	118.446	118.358	118.153	117.846	117.539	
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	13	14	15

CUTTING AREA (SQ.M) = 0.916
FILLING AREA (SQ.M) = 3.251

CH. (KM):- 7+600
DESIGNED BED LEVEL = 116.815 M

LEGEND

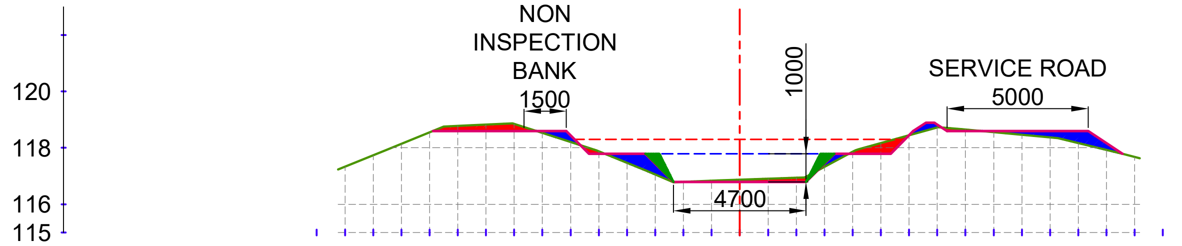
▨	CUT AREA	▭	EXISTING BED LINE
		- - -	F.S.L.
▨	FILL AREA	▭	DESIGNED BED LINE
		- - -	H.G. LINE

Prepared by :-

WAPCOS LTD.

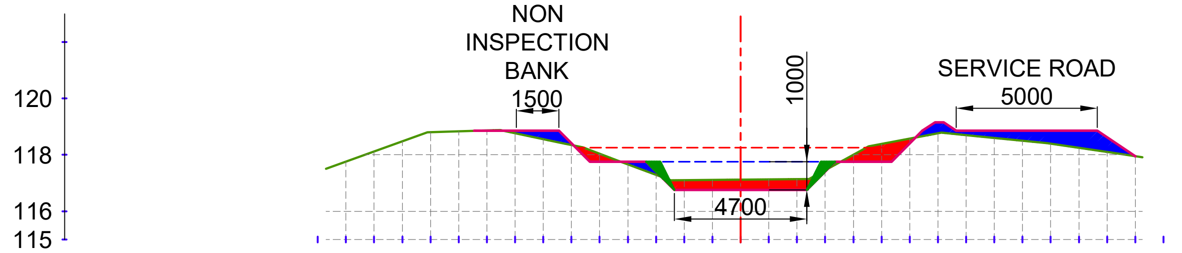
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 19 of 41

X SECTION OF HETAMPUR DY.



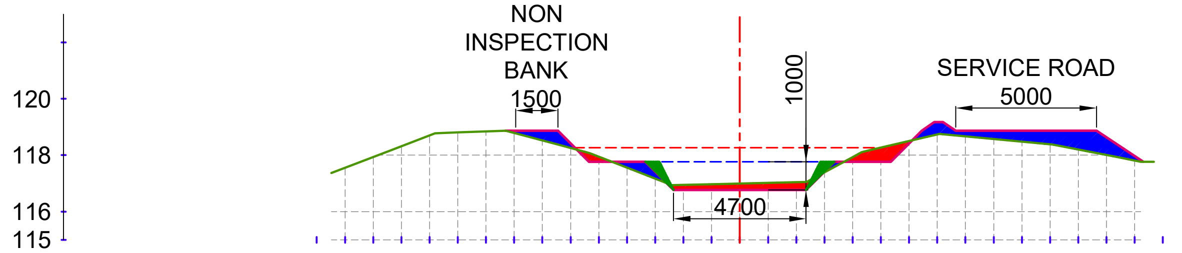
EXIST. LEVEL (M)		117.332	117.736	118.140	118.544	118.772	118.820	118.845	118.523	118.201	117.874	117.463	117.052	116.797	116.833	116.870	116.906	116.943	117.327	117.860	118.167	118.446	118.726	118.647	118.555	118.464	118.373	118.169	117.923	117.678	
OFFSET (M)	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

CUTTING AREA (SQ.M) = 1.733
FILLING AREA (SQ.M) = 2.406
CH. (KM):- 7+700
DESIGNED BED LEVEL = 116.794 M



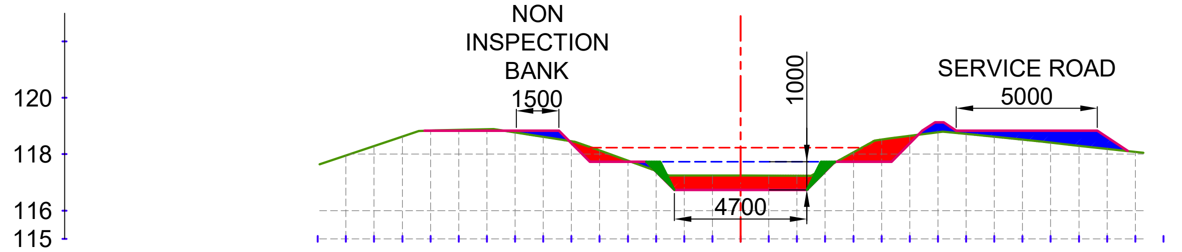
EXIST. LEVEL (M)		117.761	118.120	118.480	118.803	118.834	118.865	118.768	118.556	118.345	118.036	117.662	117.289	117.098	117.109	117.119	117.129	117.140	117.456	118.004	118.384	118.571	118.757	118.695	118.597	118.499	118.394	118.246	118.098	117.950	
OFFSET (M)	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

CUTTING AREA (SQ.M) = 3.255
FILLING AREA (SQ.M) = 3.541
CH. (KM):- 7+900
DESIGNED BED LEVEL = 116.751 M



EXIST. LEVEL (M)		117.552	117.934	118.316	118.698	118.805	118.845	118.793	118.526	118.258	117.950	117.559	117.168	116.948	116.971	116.994	117.017	117.040	117.392	117.934	118.267	118.503	118.739	118.671	118.576	118.482	118.387	118.201	118.008	117.814	
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	13	14	15

CUTTING AREA (SQ.M) = 2.062
FILLING AREA (SQ.M) = 4.434
CH. (KM):- 7+800
DESIGNED BED LEVEL = 116.772 M



EXIST. LEVEL (M)		117.959	118.294	118.629	118.835	118.858	118.882	118.769	118.615	118.460	118.129	117.771	117.412	117.247	117.245	117.244	117.242	117.240	117.518	118.072	118.520	118.651	118.781	118.720	118.617	118.514	118.410	118.301	118.193	118.084	
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	13	14	15

CUTTING AREA (SQ.M) = 4.622
FILLING AREA (SQ.M) = 2.725
CH. (KM):- 8+000
DESIGNED BED LEVEL = 116.730 M

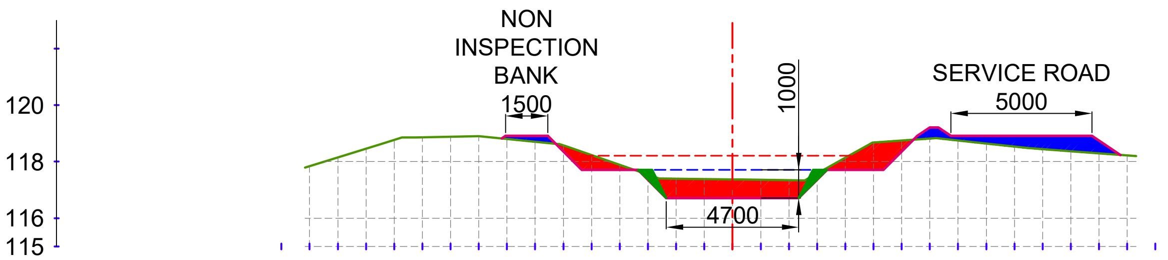
LEGEND

▨	CUT AREA	▭	EXISTING BED LINE
		┄	F.S.L.
▨	FILL AREA	▭	DESIGNED BED LINE
		┄	H.G. LINE

Prepared by :-
WAPCOS LTD.

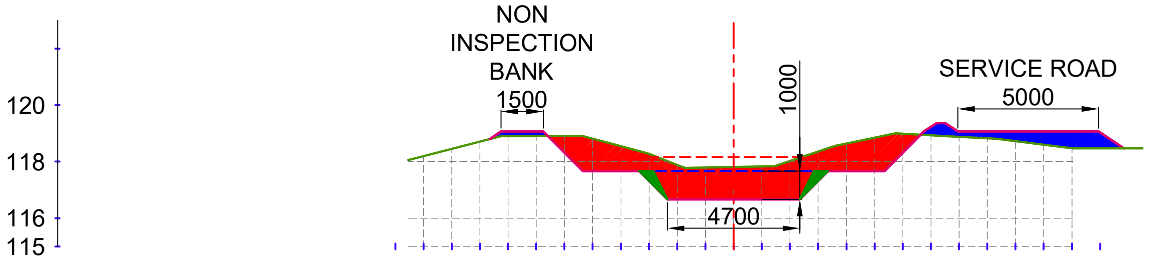
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 20 of 41

X SECTION OF HETAMPUR DY.



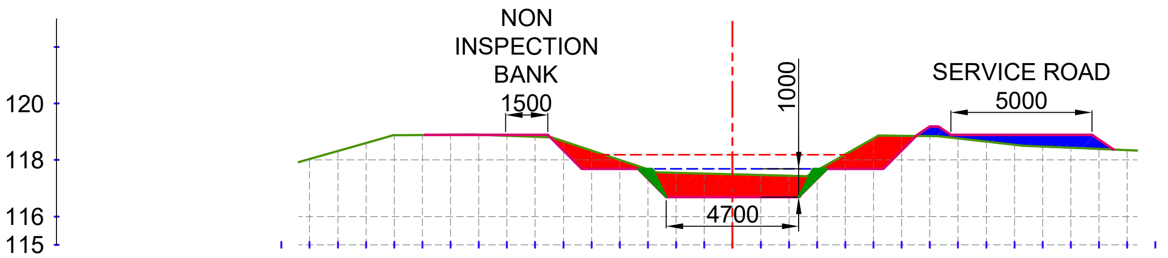
OFFSET (M)	EXIST. LEVEL (M)
-16	
-15	117.835
-14	118.145
-13	118.455
-12	118.765
-11	118.863
-10	118.879
-9	118.895
-8	118.799
-7	118.703
-6	118.574
-5	118.229
-4	117.884
-3	117.539
-2	117.395
-1	117.382
0	117.368
1	117.355
2	117.342
3	117.579
4	118.139
5	118.680
6	118.746
7	118.813
8	118.744
9	118.636
10	118.528
11	118.438
12	118.364
13	118.291
14	118.217
15	

CUTTING AREA (SQ.M) = 5.973
FILLING AREA (SQ.M) = 2.923
CH. (KM):- 8+100
DESIGNED BED LEVEL = 116.709 M



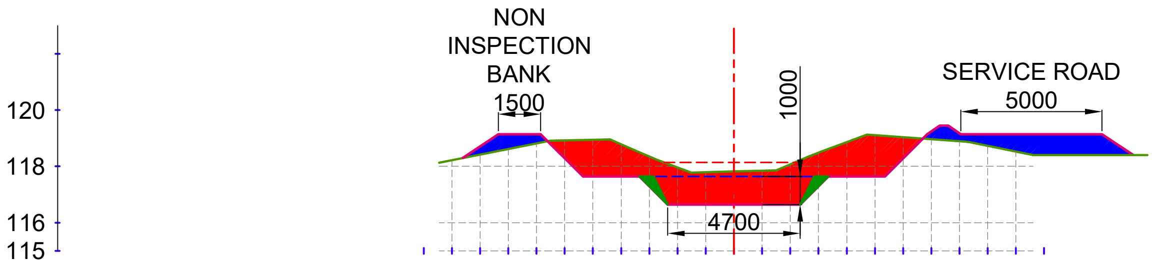
OFFSET (M)	EXIST. LEVEL (M)
-12	
-11	118.196
-10	118.453
-9	118.710
-8	118.903
-7	118.905
-6	118.908
-5	118.810
-4	118.546
-3	118.278
-2	117.886
-1	117.792
0	117.808
1	117.824
2	118.025
3	118.356
4	118.639
5	118.847
6	118.988
7	118.934
8	118.879
9	118.825
10	118.724
11	118.600
12	118.477
13	

CUTTING AREA (SQ.M) = 12.927
FILLING AREA (SQ.M) = 2.969
CH. (KM):- 8+300
DESIGNED BED LEVEL = 116.666 M



OFFSET (M)	EXIST. LEVEL (M)
-16	
-15	118.033
-14	118.317
-13	118.601
-12	118.877
-11	118.886
-10	118.895
-9	118.894
-8	118.858
-7	118.822
-6	118.666
-5	118.333
-4	118.000
-3	117.667
-2	117.541
-1	117.517
0	117.493
1	117.469
2	117.445
3	117.639
4	118.203
5	118.768
6	118.860
7	118.853
8	118.768
9	118.654
10	118.541
11	118.477
12	118.435
13	118.392
14	118.349
15	

CUTTING AREA (SQ.M) = 7.559
FILLING AREA (SQ.M) = 2.223
CH. (KM):- 8+200
DESIGNED BED LEVEL = 116.687 M



OFFSET (M)	EXIST. LEVEL (M)
-11	
-10	118.224
-9	118.422
-8	118.620
-7	118.819
-6	118.925
-5	118.943
-4	118.782
-3	118.350
-2	117.960
-1	117.790
0	117.819
1	117.848
2	118.075
3	118.487
4	118.861
5	119.109
6	119.037
7	118.965
8	118.892
9	118.727
10	118.525
11	

CUTTING AREA (SQ.M) = 14.491
FILLING AREA (SQ.M) = 5.044
CH. (KM):- 8+400
DESIGNED BED LEVEL = 116.645 M

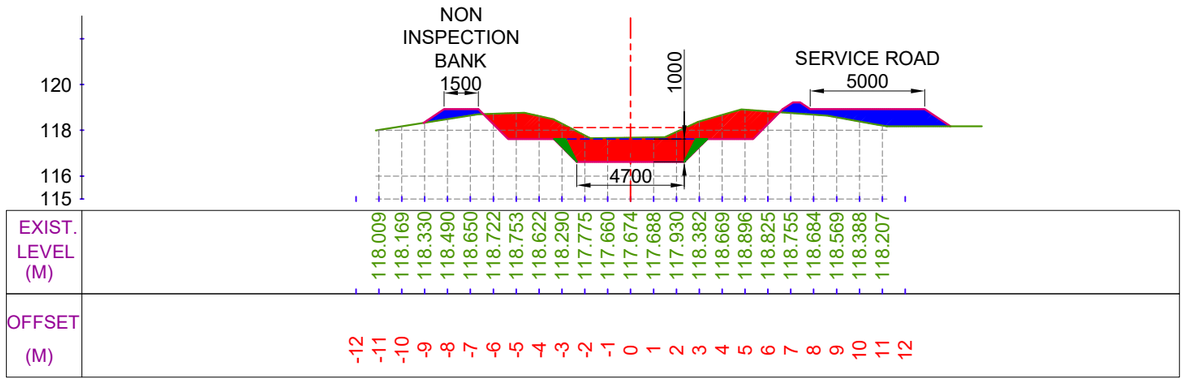
LEGEND

▨	CUT AREA	▭	EXISTING BED LINE
		┄	F.S.L.
▨	FILL AREA	▭	DESIGNED BED LINE
		┄	H.G. LINE

Prepared by :-
WAPCOS LTD.

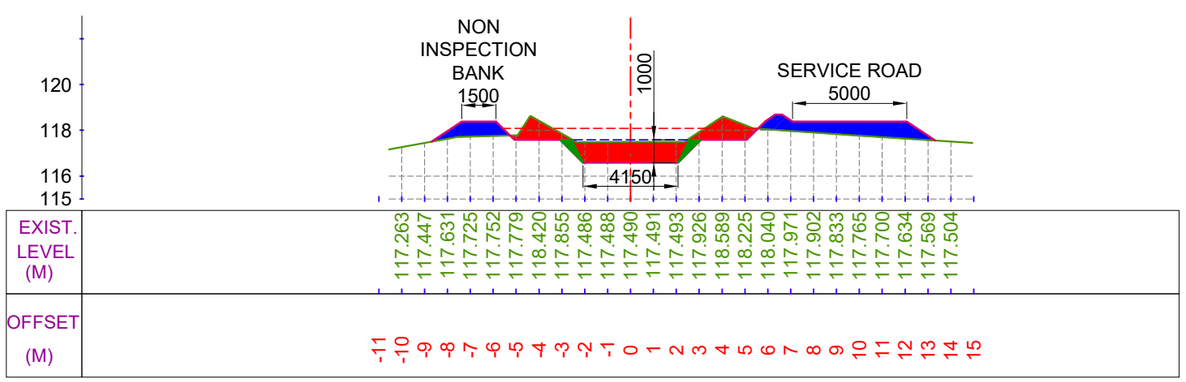
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 21 of 41

X SECTION OF HETAMPUR DY.



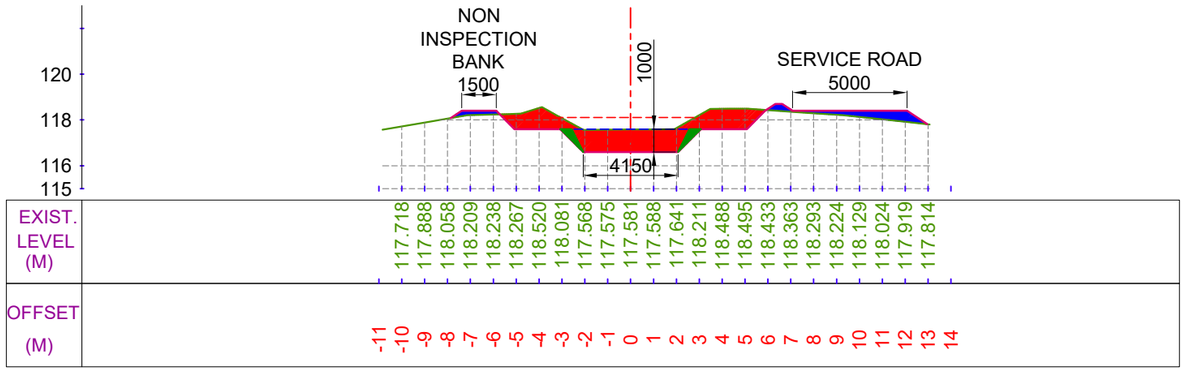
CUTTING AREA (SQ.M) = 12.644
FILLING AREA (SQ.M) = 4.394

CH. (KM):- 8+500
DESIGNED BED LEVEL = 116.623 M



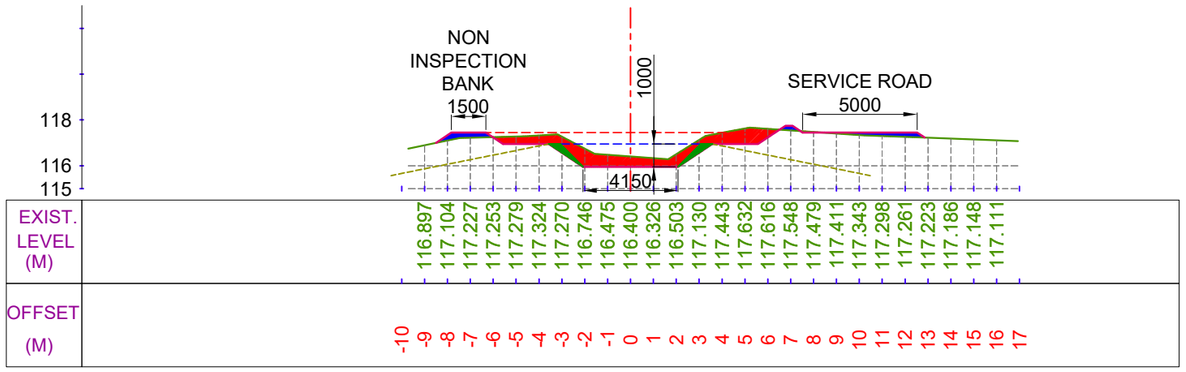
CUTTING AREA (SQ.M) = 7.373
FILLING AREA (SQ.M) = 5.703

CH. (KM):- 8+700
DESIGNED BED LEVEL = 116.581 M



CUTTING AREA (SQ.M) = 9.027
FILLING AREA (SQ.M) = 2.020

CH. (KM):- 8+600
DESIGNED BED LEVEL = 116.602 M



CUTTING AREA (SQ.M) = 5.693
FILLING AREA (SQ.M) = 1.129

CH. (KM):- 8+800
DESIGNED BED LEVEL = 115.950 M

LEGEND

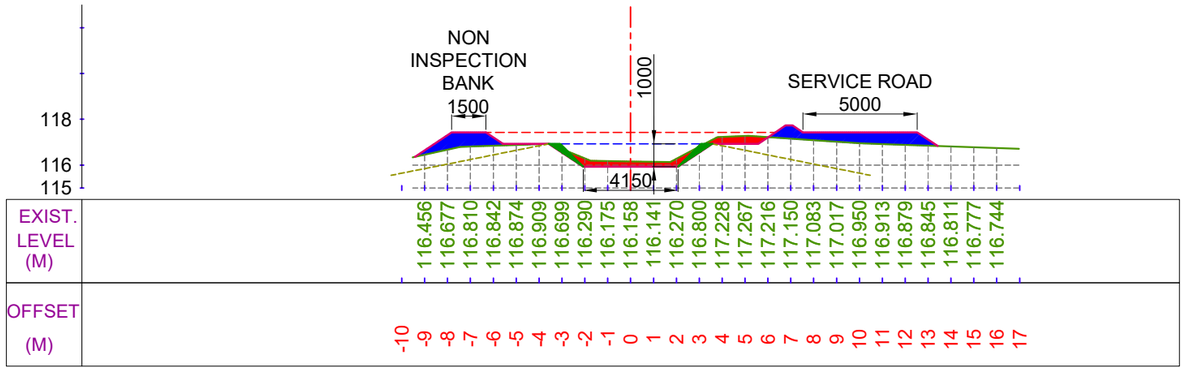
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

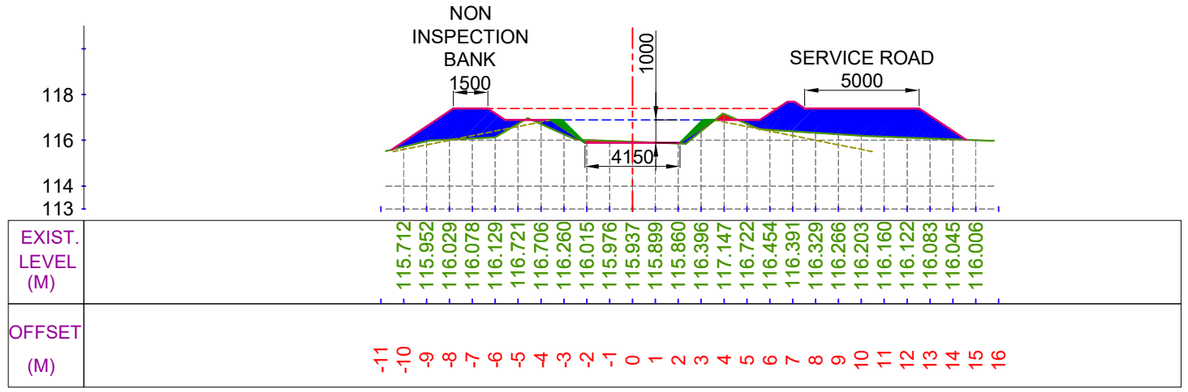
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



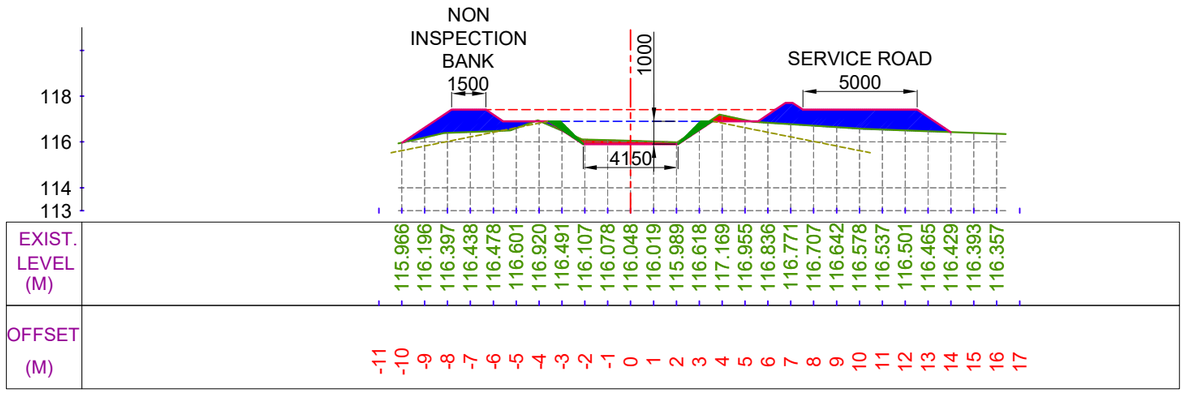
CUTTING AREA (SQ.M) = 2.014
FILLING AREA (SQ.M) = 4.985

CH. (KM):- 8+900
DESIGNED BED LEVEL = 115.928 M



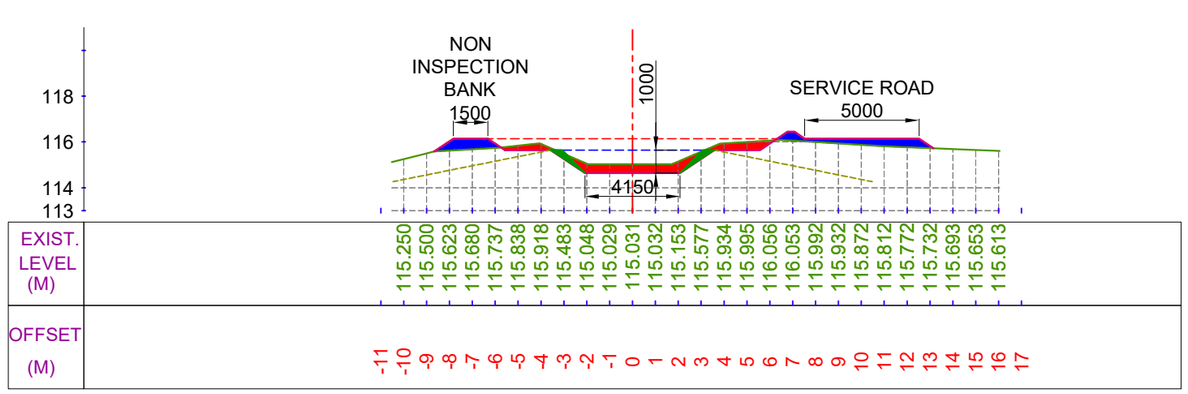
CUTTING AREA (SQ.M) = 0.389
FILLING AREA (SQ.M) = 14.451

CH. (KM):- 9+100
DESIGNED BED LEVEL = 115.886 M



CUTTING AREA (SQ.M) = 0.894
FILLING AREA (SQ.M) = 9.414

CH. (KM):- 9+000
DESIGNED BED LEVEL = 115.907 M



CUTTING AREA (SQ.M) = 3.284
FILLING AREA (SQ.M) = 2.853

CH. (KM):- 9+200
DESIGNED BED LEVEL = 114.645 M

LEGEND

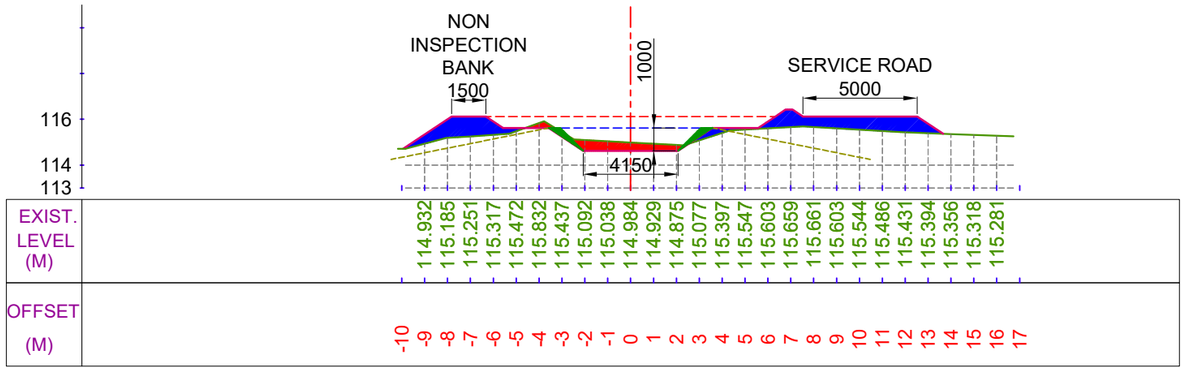
CUT AREA	EXISTING BED LINE	
	F.S.L.	
FILL AREA	DESIGNED BED LINE	
	H.G. LINE	

Prepared by :-

WAPCOS LTD.

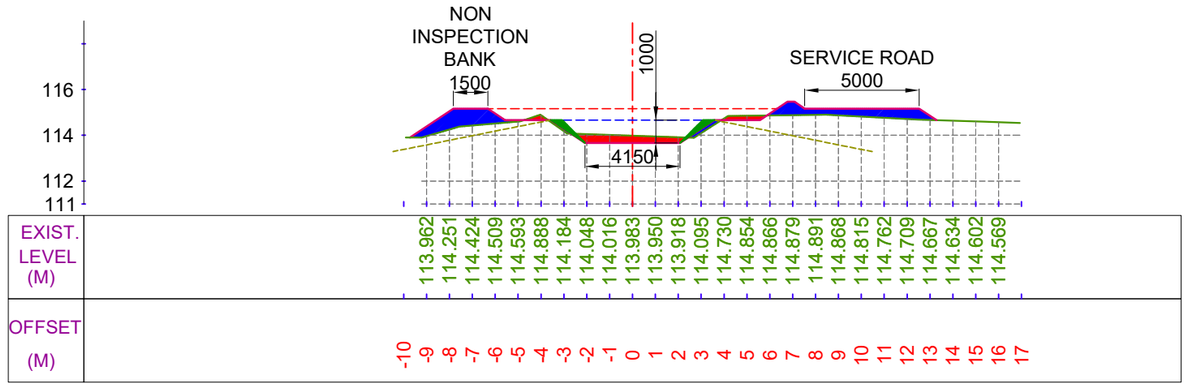
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



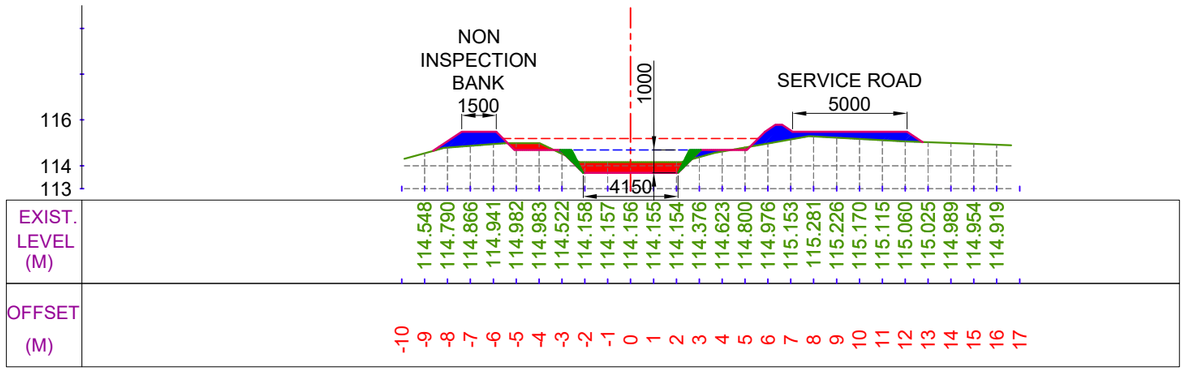
CUTTING AREA (SQ.M) = 1.835
FILLING AREA (SQ.M) = 7.621

CH. (KM):- 9+300
DESIGNED BED LEVEL = 114.623 M



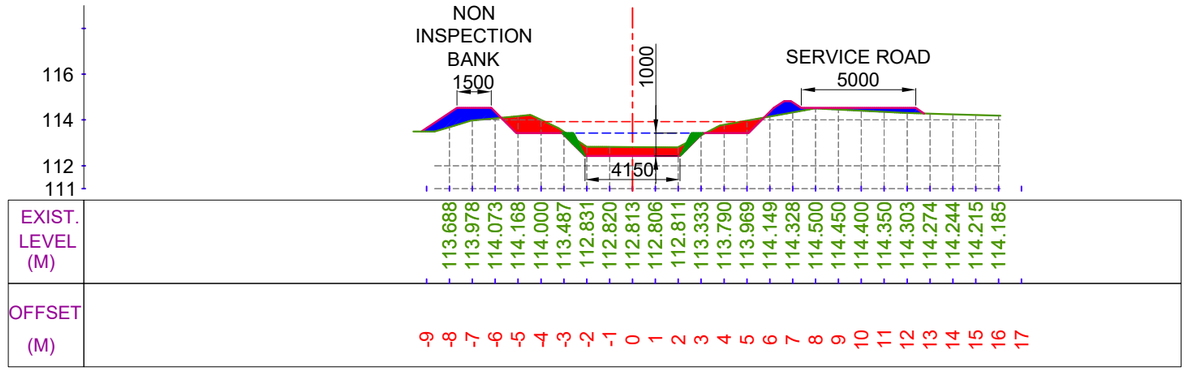
CUTTING AREA (SQ.M) = 1.861
FILLING AREA (SQ.M) = 5.342

CH. (KM):- 9+500
DESIGNED BED LEVEL = 113.666 M



CUTTING AREA (SQ.M) = 2.576
FILLING AREA (SQ.M) = 4.233

CH. (KM):- 9+400
DESIGNED BED LEVEL = 113.687 M



CUTTING AREA (SQ.M) = 3.989
FILLING AREA (SQ.M) = 2.854

CH. (KM):- 9+600
DESIGNED BED LEVEL = 112.424 M

LEGEND

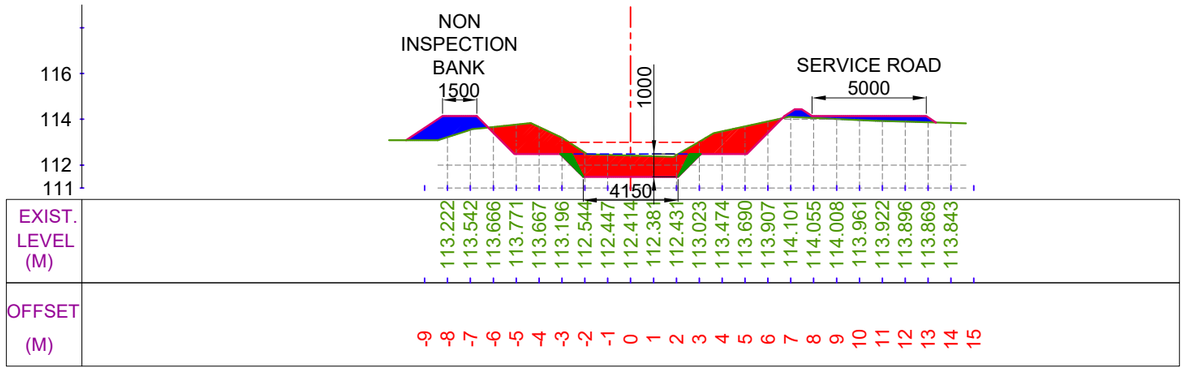
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

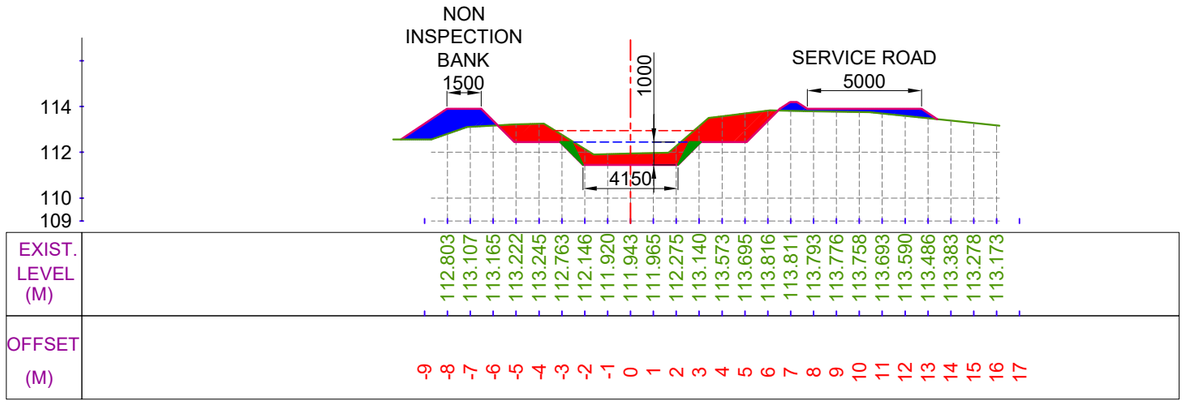
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 24 of 41

X SECTION OF HETAMPUR DY.



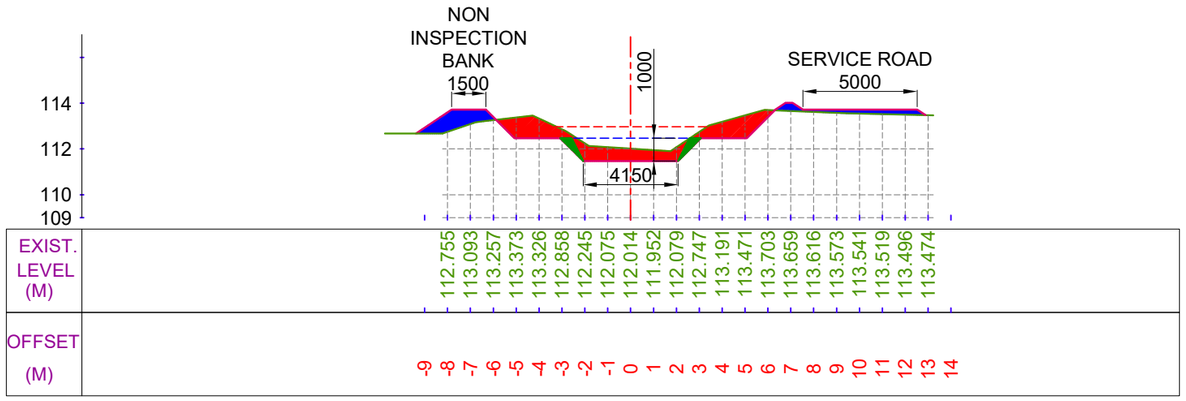
CUTTING AREA (SQ.M) = 10.981
FILLING AREA (SQ.M) = 3.378

CH. (KM):- 9+700
DESIGNED BED LEVEL = 111.489 M



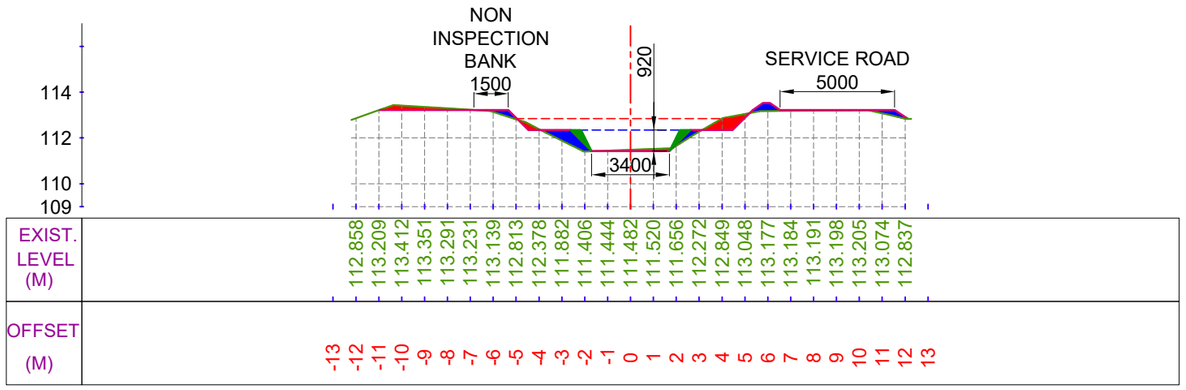
CUTTING AREA (SQ.M) = 7.905
FILLING AREA (SQ.M) = 4.257

CH. (KM):- 9+900
DESIGNED BED LEVEL = 111.447 M



CUTTING AREA (SQ.M) = 7.070
FILLING AREA (SQ.M) = 3.075

CH. (KM):- 9+800
DESIGNED BED LEVEL = 111.468 M



CUTTING AREA (SQ.M) = 1.457
FILLING AREA (SQ.M) = 1.873

CH. (KM):- 10+000
DESIGNED BED LEVEL = 111.425 M

LEGEND

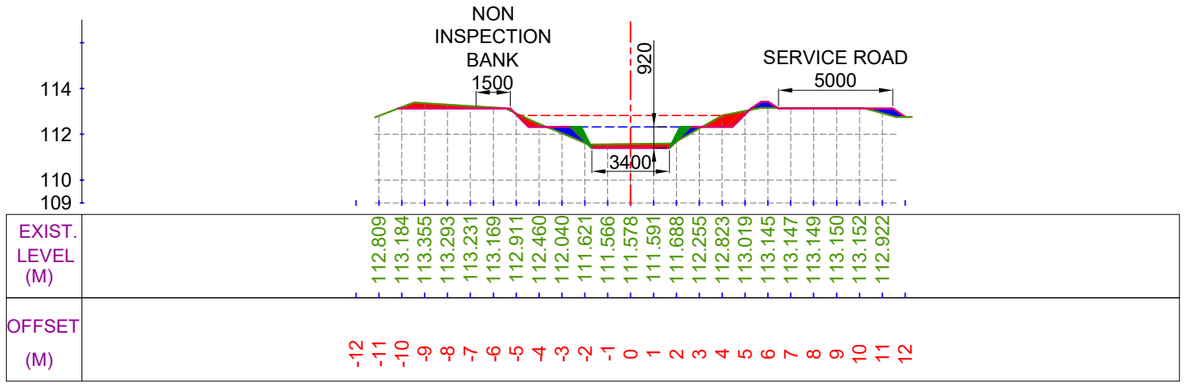
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

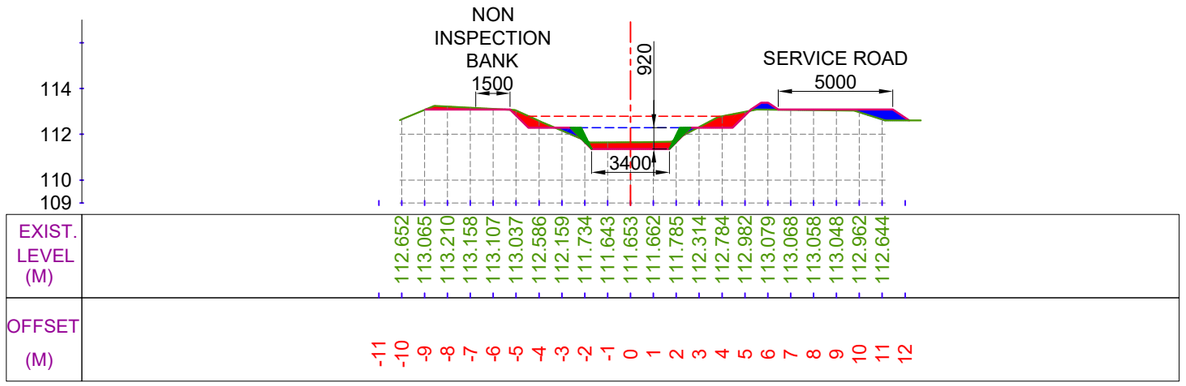
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



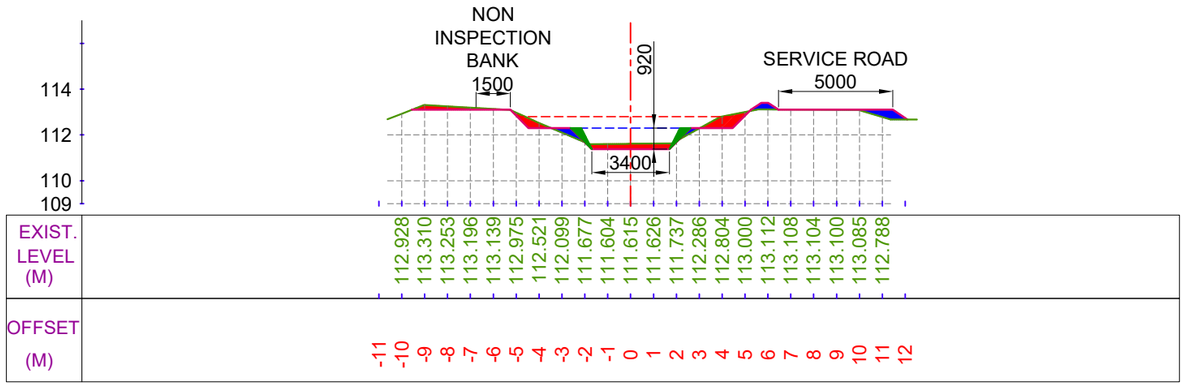
CUTTING AREA (SQ.M) = 2.256
FILLING AREA (SQ.M) = 1.097

CH. (KM):- 10+100
DESIGNED BED LEVEL = 111.404 M



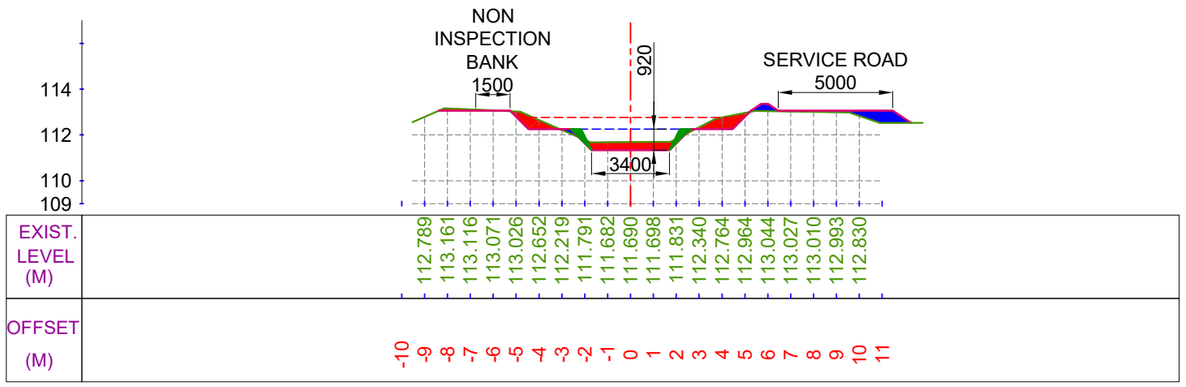
CUTTING AREA (SQ.M) = 2.588
FILLING AREA (SQ.M) = 1.232

CH. (KM):- 10+300
DESIGNED BED LEVEL = 111.362 M



CUTTING AREA (SQ.M) = 2.357
FILLING AREA (SQ.M) = 1.083

CH. (KM):- 10+200
DESIGNED BED LEVEL = 111.383 M



CUTTING AREA (SQ.M) = 2.872
FILLING AREA (SQ.M) = 1.443

CH. (KM):- 10+400
DESIGNED BED LEVEL = 111.340 M

LEGEND

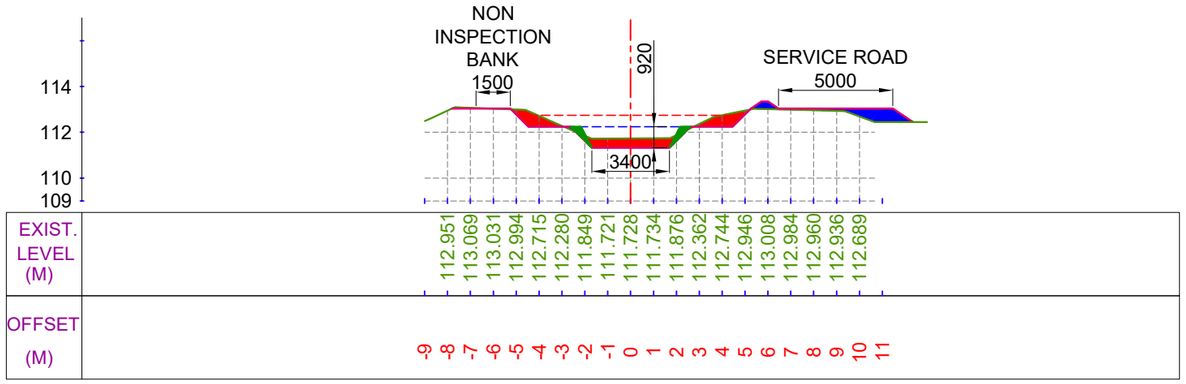
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

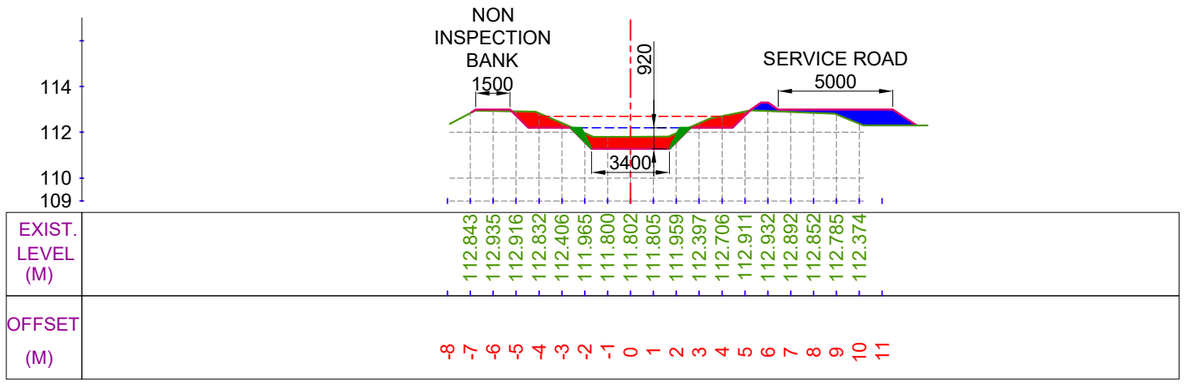
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



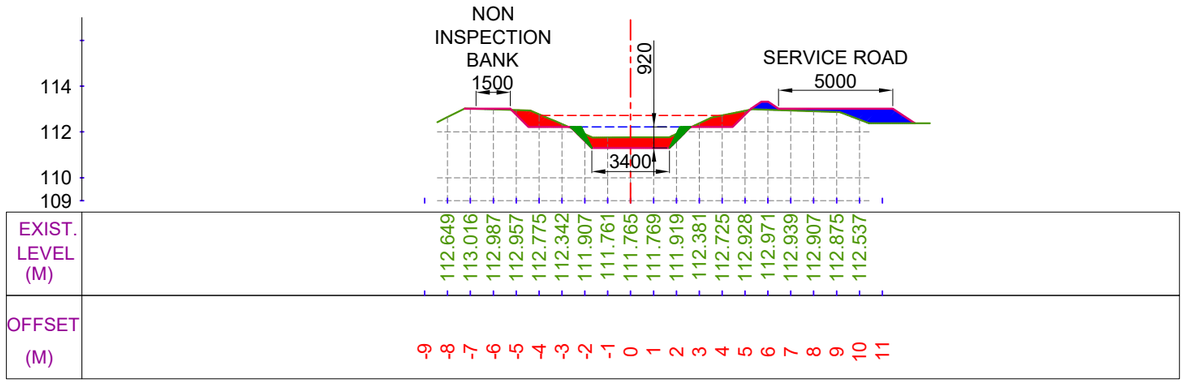
CUTTING AREA (SQ.M) = 3.182
FILLING AREA (SQ.M) = 1.731

CH. (KM):- 10+500
DESIGNED BED LEVEL = 111.319 M



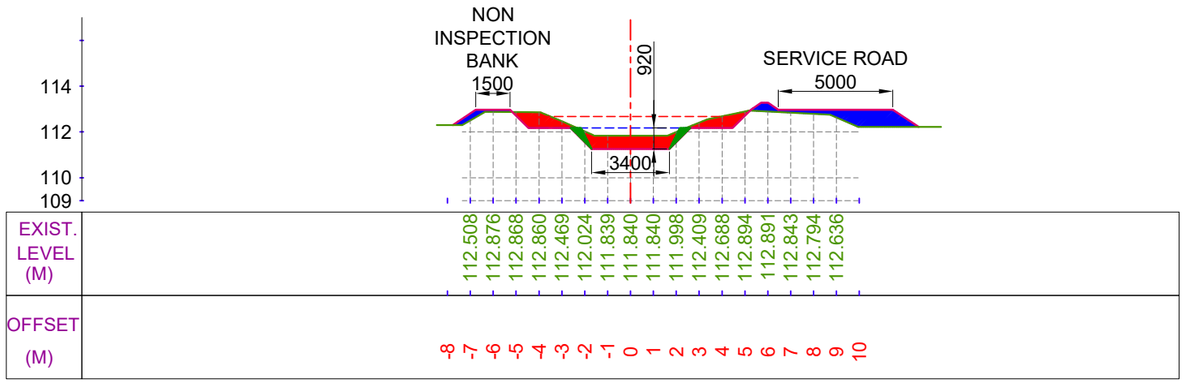
CUTTING AREA (SQ.M) = 3.954
FILLING AREA (SQ.M) = 2.525

CH. (KM):- 10+700
DESIGNED BED LEVEL = 111.276 M



CUTTING AREA (SQ.M) = 3.543
FILLING AREA (SQ.M) = 2.095

CH. (KM):- 10+600
DESIGNED BED LEVEL = 111.298 M



CUTTING AREA (SQ.M) = 4.351
FILLING AREA (SQ.M) = 3.280

CH. (KM):- 10+800
DESIGNED BED LEVEL = 111.255 M

LEGEND

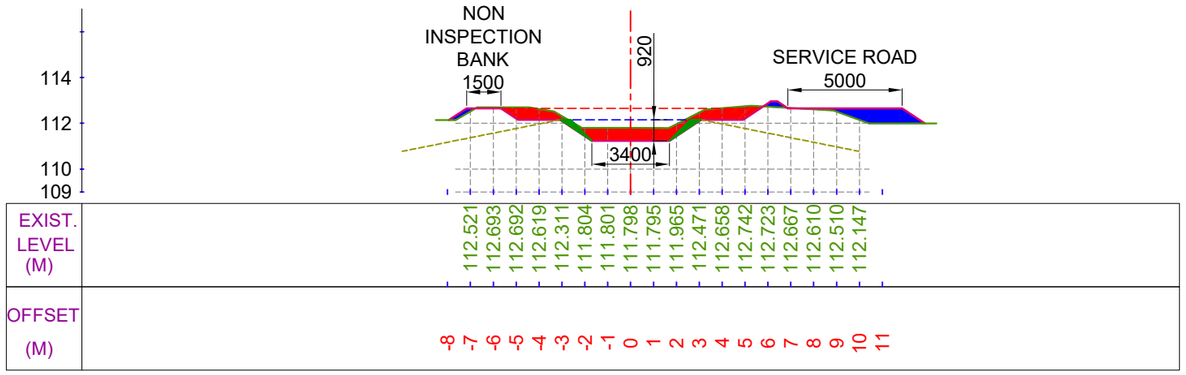
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

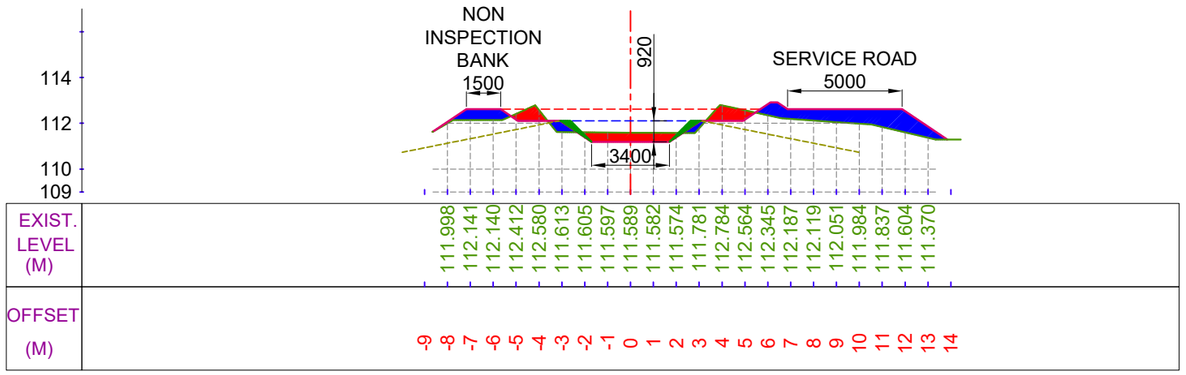
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



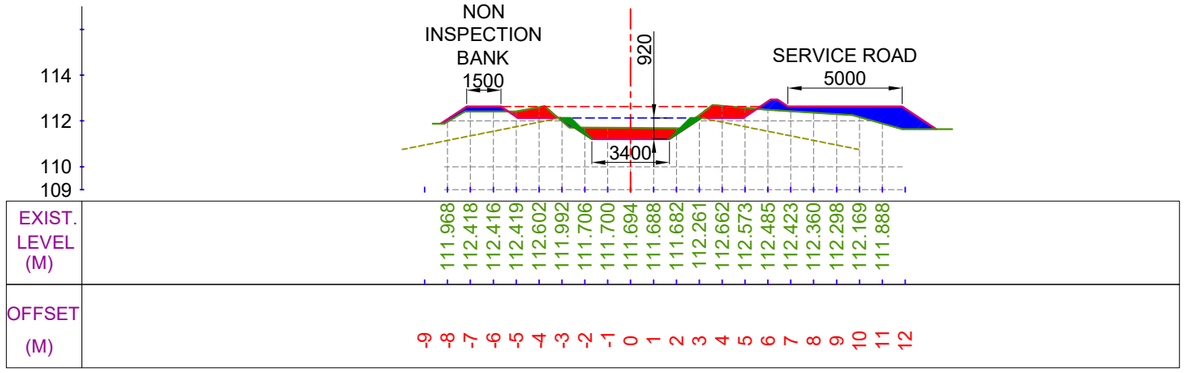
CUTTING AREA (SQ.M) = 4.838
FILLING AREA (SQ.M) = 2.296

CH. (KM):- 10+900
DESIGNED BED LEVEL = 111.234 M



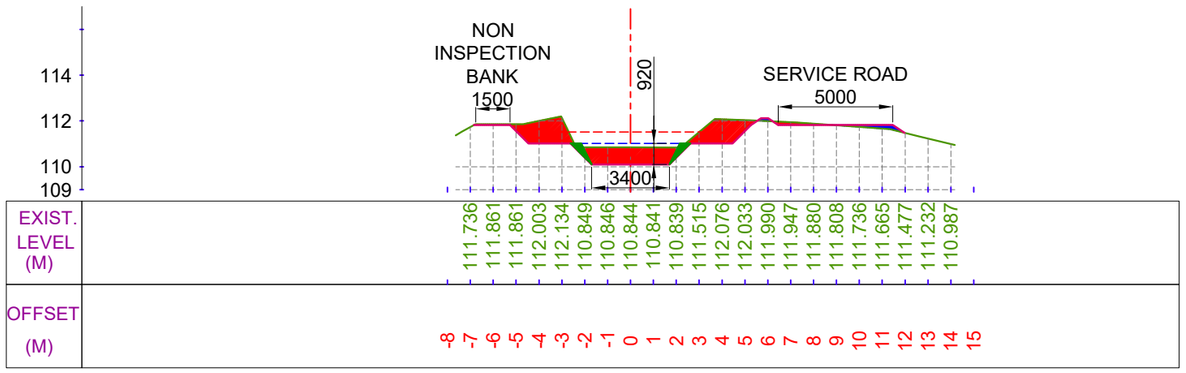
CUTTING AREA (SQ.M) = 3.055
FILLING AREA (SQ.M) = 6.336

CH. (KM):- 11+100
DESIGNED BED LEVEL = 111.191 M



CUTTING AREA (SQ.M) = 3.577
FILLING AREA (SQ.M) = 4.045

CH. (KM):- 11+000
DESIGNED BED LEVEL = 111.213 M



CUTTING AREA (SQ.M) = 7.232
FILLING AREA (SQ.M) = 0.373

CH. (KM):- 11+200
DESIGNED BED LEVEL = 110.103 M

LEGEND

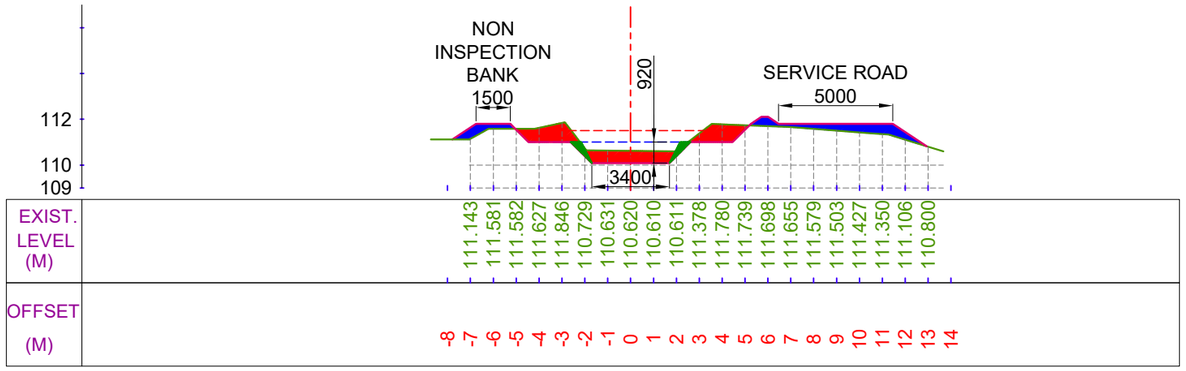
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

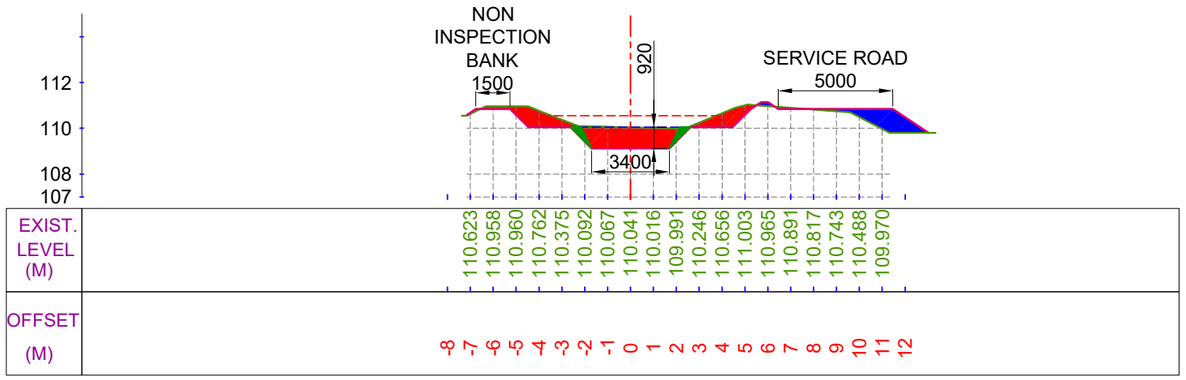
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



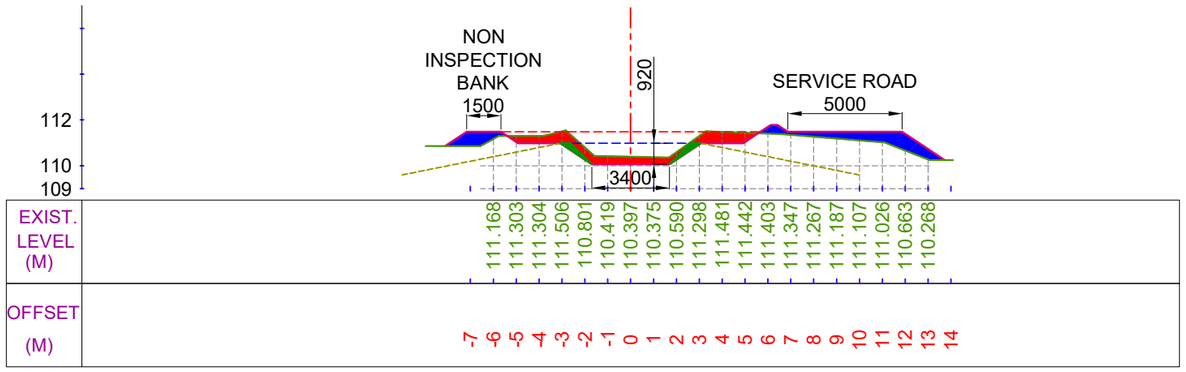
CUTTING AREA (SQ.M) = 4.951
FILLING AREA (SQ.M) = 2.993

CH. (KM):- 11+300
DESIGNED BED LEVEL = 110.082 M



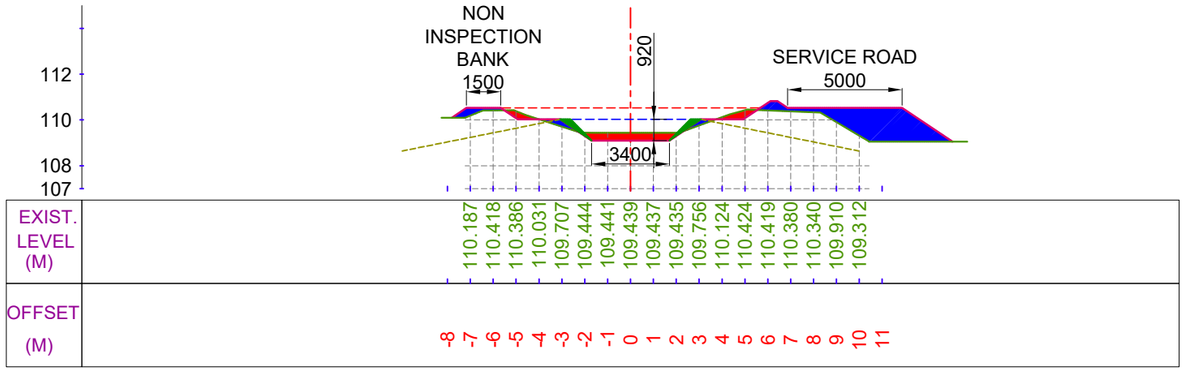
CUTTING AREA (SQ.M) = 6.405
FILLING AREA (SQ.M) = 2.254

CH. (KM):- 11+500
DESIGNED BED LEVEL = 109.124 M



CUTTING AREA (SQ.M) = 3.839
FILLING AREA (SQ.M) = 3.937

CH. (KM):- 11+400
DESIGNED BED LEVEL = 110.060 M



CUTTING AREA (SQ.M) = 1.894
FILLING AREA (SQ.M) = 6.933

CH. (KM):- 11+600
DESIGNED BED LEVEL = 109.103 M

LEGEND

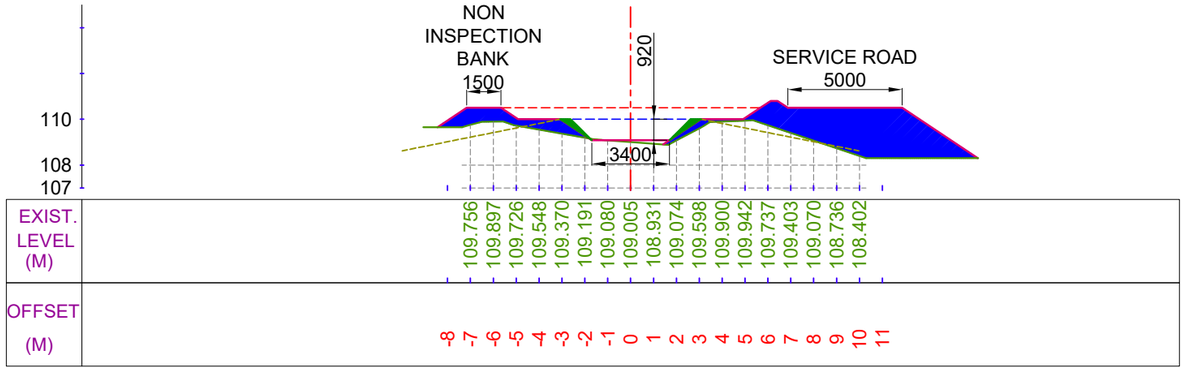
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

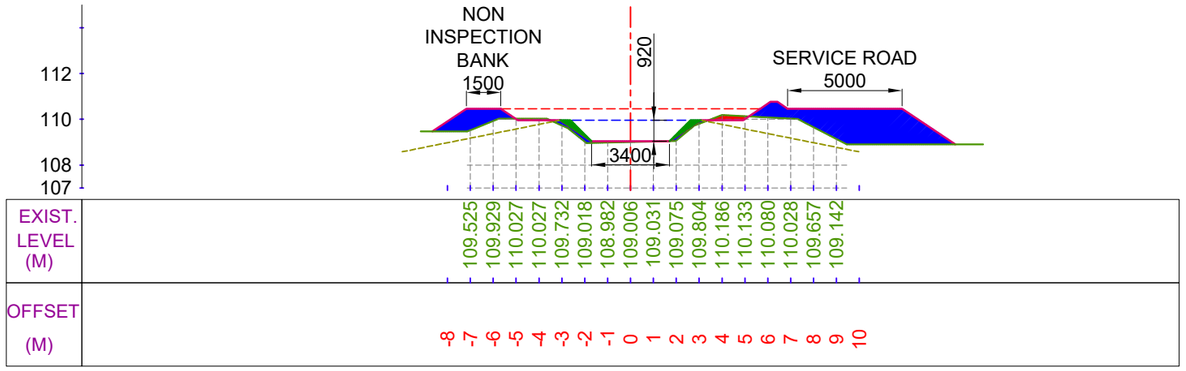
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 29 of 41

X SECTION OF HETAMPUR DY.



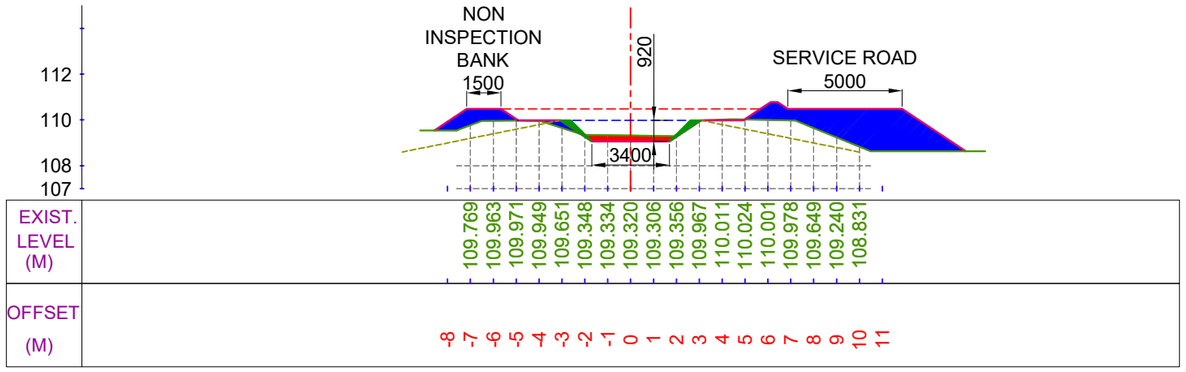
CUTTING AREA (SQ.M) = 0.019
FILLING AREA (SQ.M) = 17.819

CH. (KM):- 11+700
DESIGNED BED LEVEL = 109.082 M



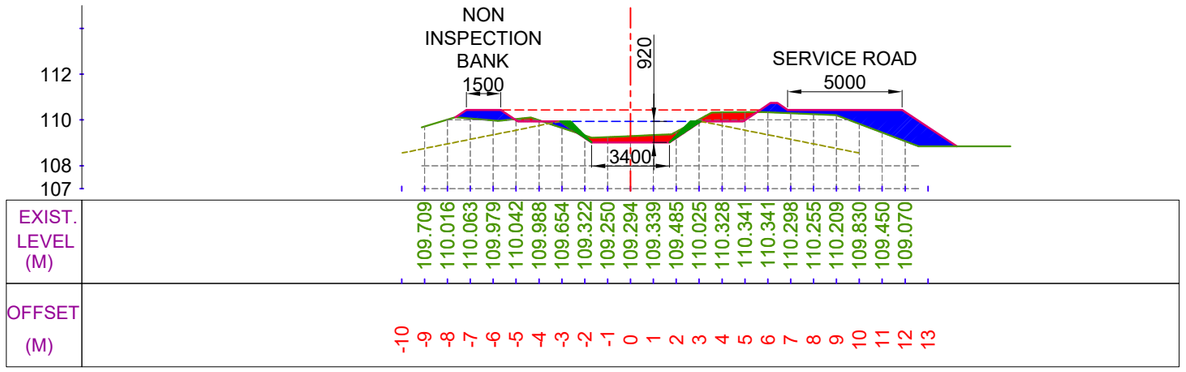
CUTTING AREA (SQ.M) = 0.375
FILLING AREA (SQ.M) = 11.130

CH. (KM):- 11+900
DESIGNED BED LEVEL = 109.039 M



CUTTING AREA (SQ.M) = 1.009
FILLING AREA (SQ.M) = 12.105

CH. (KM):- 11+800
DESIGNED BED LEVEL = 109.060 M



CUTTING AREA (SQ.M) = 2.003
FILLING AREA (SQ.M) = 5.832

CH. (KM):- 12+000
DESIGNED BED LEVEL = 109.018 M

LEGEND

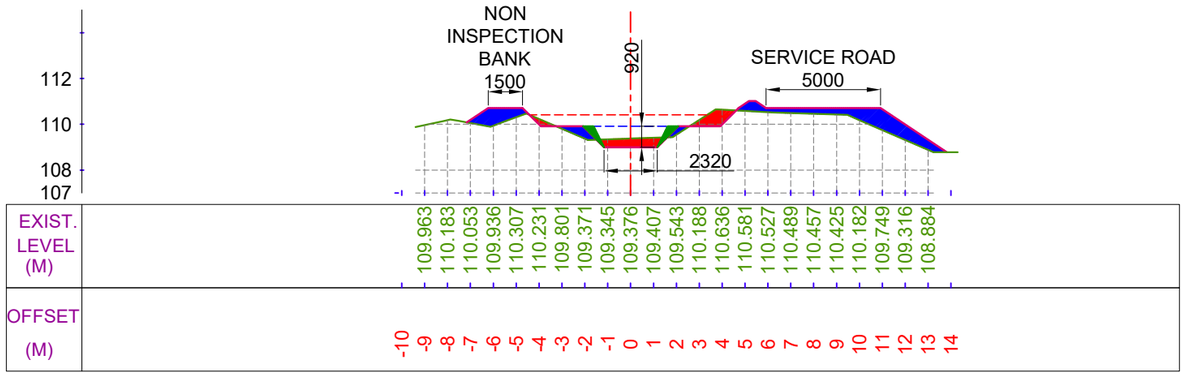
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

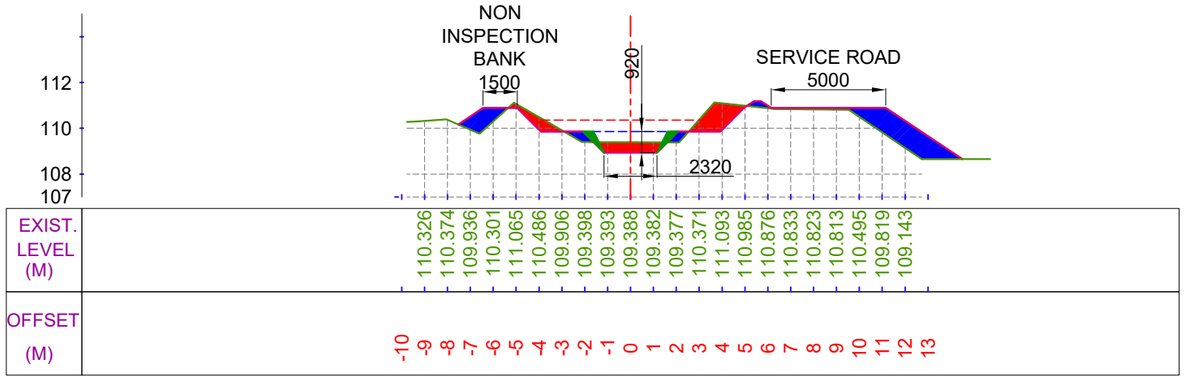
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 30 of 41

X SECTION OF HETAMPUR DY.



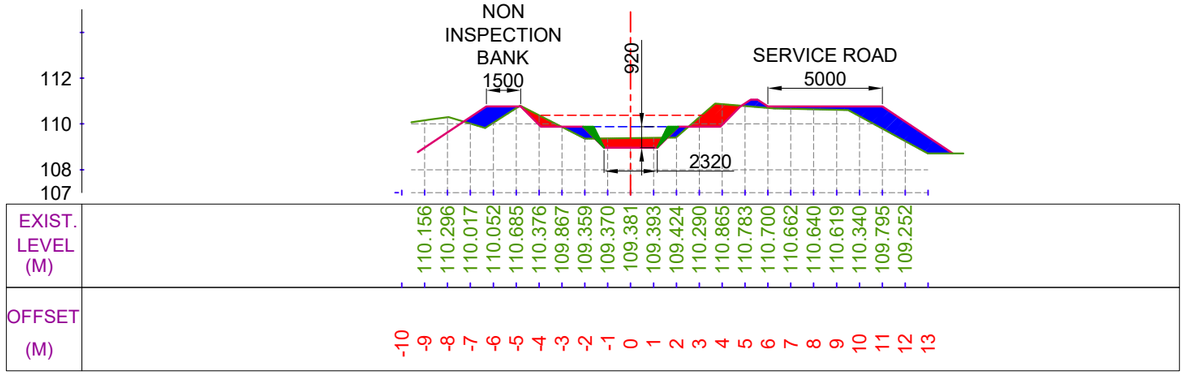
CUTTING AREA (SQ.M) = 1.948
FILLING AREA (SQ.M) = 5.737

CH. (KM):- 12+100
DESIGNED BED LEVEL = 108.993 M



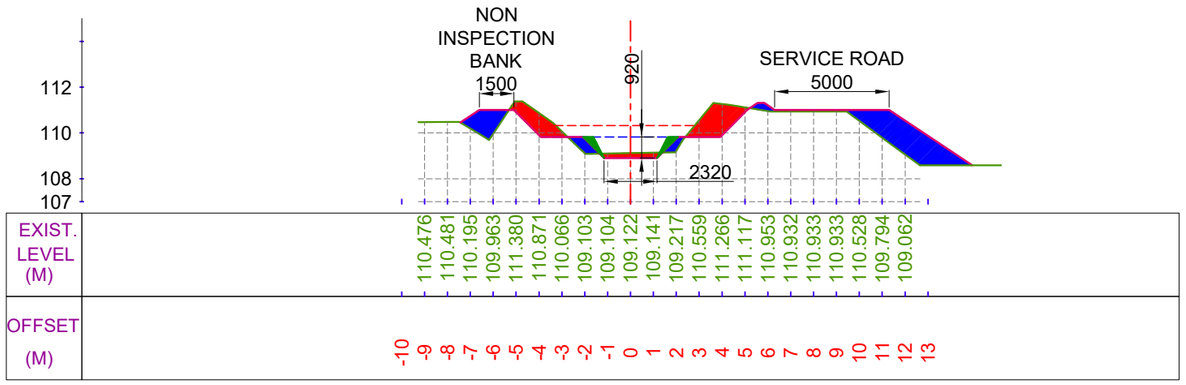
CUTTING AREA (SQ.M) = 3.614
FILLING AREA (SQ.M) = 6.015

CH. (KM):- 12+300
DESIGNED BED LEVEL = 108.936 M



CUTTING AREA (SQ.M) = 2.724
FILLING AREA (SQ.M) = 5.249

CH. (KM):- 12+200
DESIGNED BED LEVEL = 108.964 M



CUTTING AREA (SQ.M) = 4.355
FILLING AREA (SQ.M) = 7.861

CH. (KM):- 12+400
DESIGNED BED LEVEL = 108.907 M

LEGEND

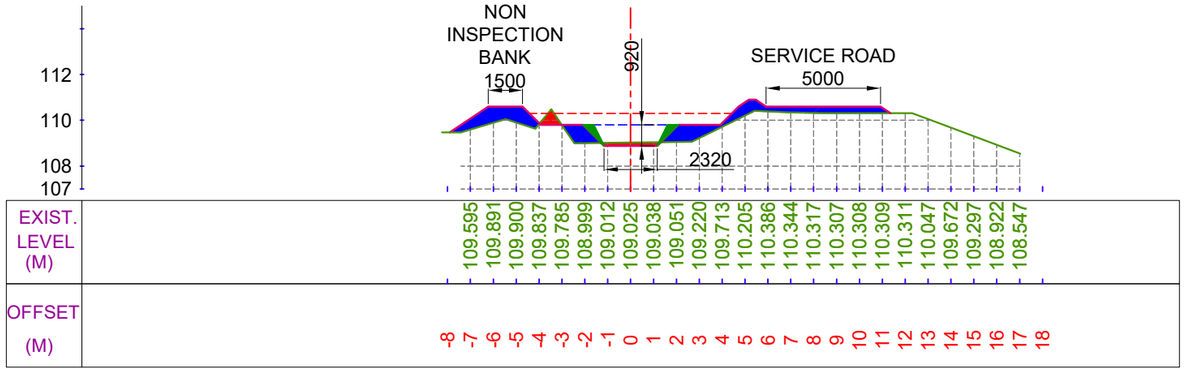
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

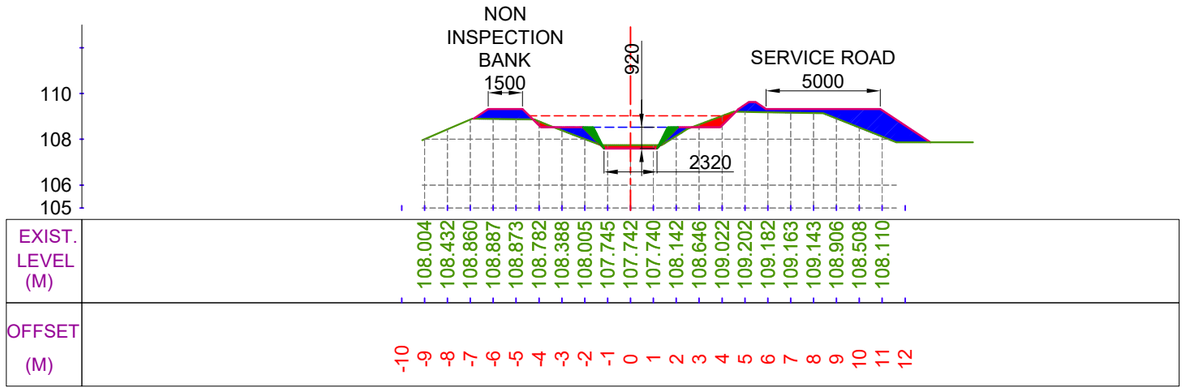
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



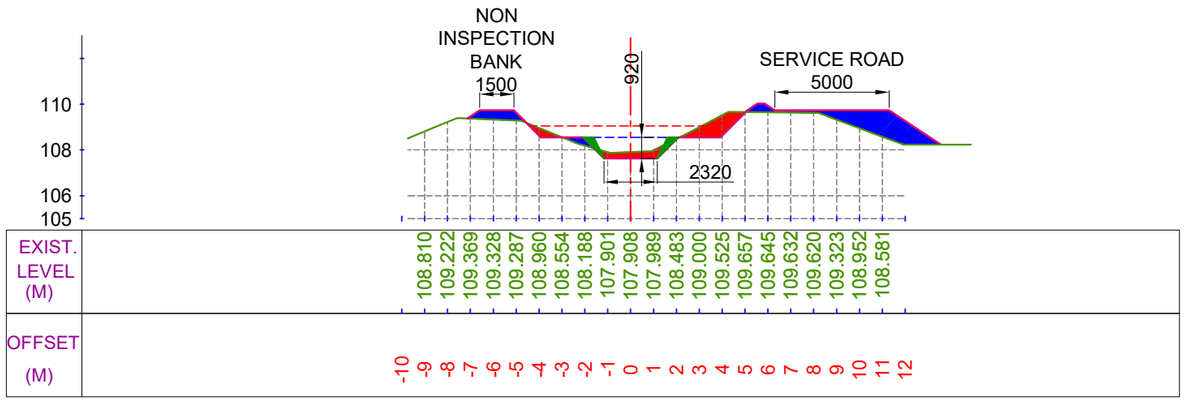
CUTTING AREA (SQ.M) = 0.696
FILLING AREA (SQ.M) = 6.490

CH. (KM):- 12+500
DESIGNED BED LEVEL = 108.879 M



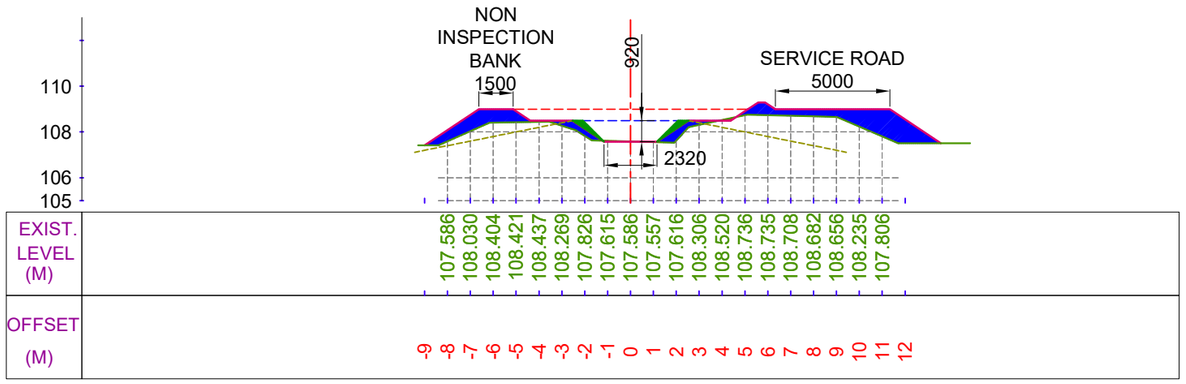
CUTTING AREA (SQ.M) = 0.916
FILLING AREA (SQ.M) = 5.615

CH. (KM):- 12+700
DESIGNED BED LEVEL = 107.601 M



CUTTING AREA (SQ.M) = 2.476
FILLING AREA (SQ.M) = 5.317

CH. (KM):- 12+600
DESIGNED BED LEVEL = 107.630 M



CUTTING AREA (SQ.M) = 0.080
FILLING AREA (SQ.M) = 8.574

CH. (KM):- 12+800
DESIGNED BED LEVEL = 107.573 M

LEGEND

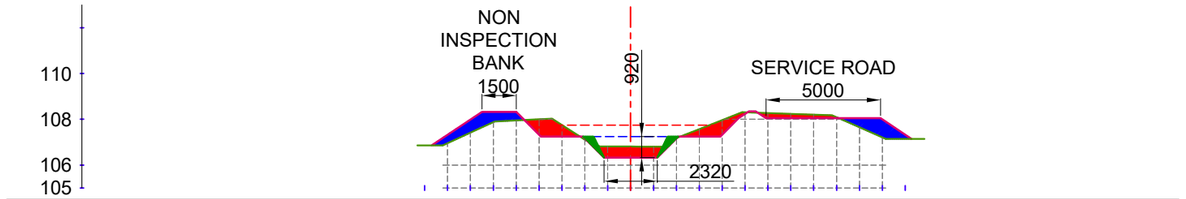
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

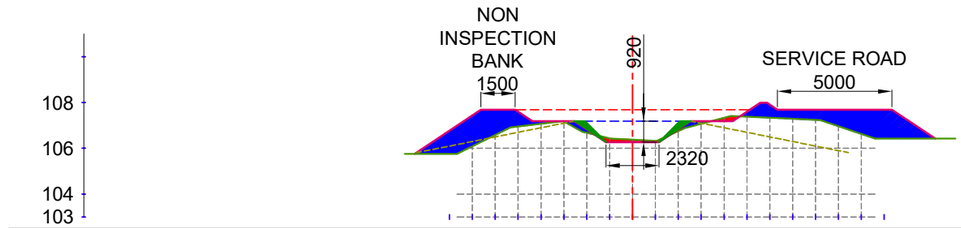
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

X SECTION OF HETAMPUR DY.



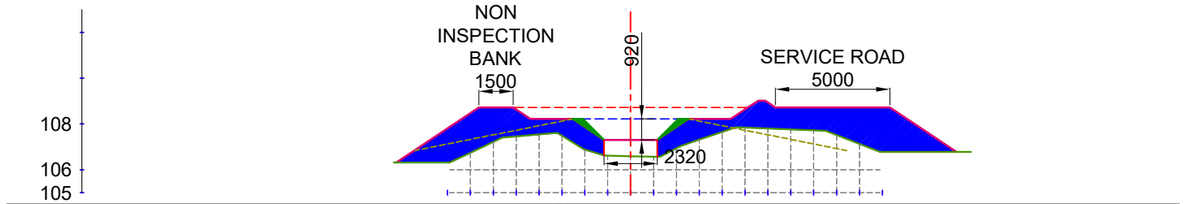
EXIST. LEVEL (M)	106.956	107.414	107.873	107.949	107.998	107.749	107.107	106.812	106.807	106.802	107.160	107.569	107.962	108.303	108.270	108.238	108.205	108.089	107.650	107.210				
OFFSET (M)	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12		

CUTTING AREA (SQ.M) = 3.939 CH. (KM):- 12+900
FILLING AREA (SQ.M) = 3.056 DESIGNED BED LEVEL = 106.325 M



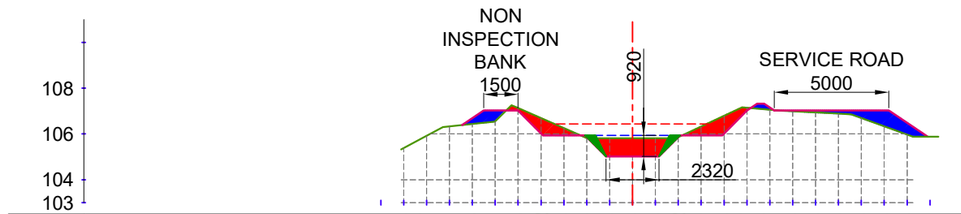
EXIST. LEVEL (M)	106.087	106.578	106.947	107.069	107.172	106.675	106.430	106.374	106.324	106.748	107.068	107.331	107.377	107.331	107.285	107.239	106.960	106.620						
OFFSET (M)	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11				

CUTTING AREA (SQ.M) = 0.432 CH. (KM):- 13+100
FILLING AREA (SQ.M) = 10.687 DESIGNED BED LEVEL = 106.268 M



EXIST. LEVEL (M)	106.743	107.218	107.456	107.540	107.482	106.884	106.615	106.591	106.568	106.934	107.311	107.650	107.843	107.804	107.764	107.725	107.521	107.131						
OFFSET (M)	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11				

CUTTING AREA (SQ.M) = 0.000 CH. (KM):- 13+000
FILLING AREA (SQ.M) = 23.135 DESIGNED BED LEVEL = 106.297 M



EXIST. LEVEL (M)	105.383	105.917	106.331	106.435	106.551	107.128	106.692	106.256	105.820	105.814	105.814	105.862	106.330	106.798	107.147	107.057	106.986	106.936	106.886	106.693	106.334	105.976			
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) = 4.556 CH. (KM):- 13+200
FILLING AREA (SQ.M) = 2.577 DESIGNED BED LEVEL = 105.021 M

LEGEND

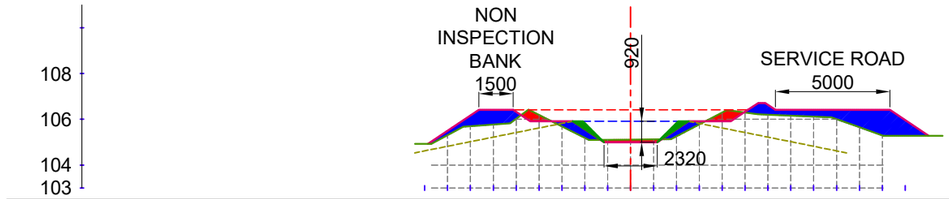
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 33 of 41

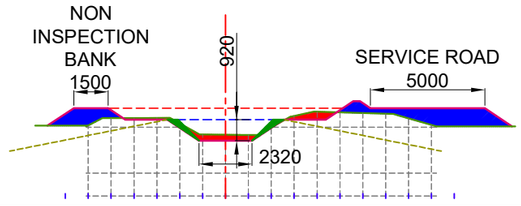
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)	105.307	105.695	105.771	106.025	106.189	105.687	105.184	105.100	105.109	105.118	105.249	105.771	106.293	106.296	106.200	106.157	106.114	106.002	105.649	105.297				
OFFSET (M)	-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) = 1.063
FILLING AREA (SQ.M) = 6.743

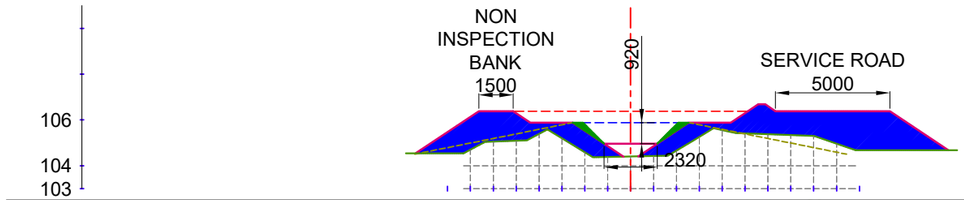
CH. (KM):- 13+300
DESIGNED BED LEVEL = 104.992 M



EXIST. LEVEL (M)	104.085	104.398	104.404	104.408	104.166	103.684	103.675	103.666	103.988	104.497	104.679	104.650	104.621	104.592	104.390	104.105				
OFFSET (M)	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10		

CUTTING AREA (SQ.M) = 1.384
FILLING AREA (SQ.M) = 5.418

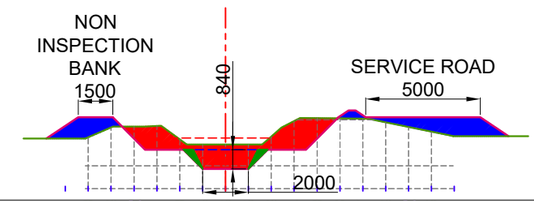
CH. (KM):- 13+500
DESIGNED BED LEVEL = 103.415 M



EXIST. LEVEL (M)	104.698	105.055	105.094	105.394	105.200	104.585	104.384	104.404	104.424	104.659	105.259	105.559	105.413	105.376	105.339	105.302	104.964			
OFFSET (M)	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	

CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 20.901

CH. (KM):- 13+400
DESIGNED BED LEVEL = 104.963 M



EXIST. LEVEL (M)	103.240	103.668	103.712	103.741	103.150	102.923	102.923	102.923	103.278	103.954	104.080	104.069	104.057	103.898	103.692	103.486				
OFFSET (M)	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10		

CUTTING AREA (SQ.M) = 7.440
FILLING AREA (SQ.M) = 5.250

CH. (KM):- 13+600
DESIGNED BED LEVEL = 101.866 M

LEGEND

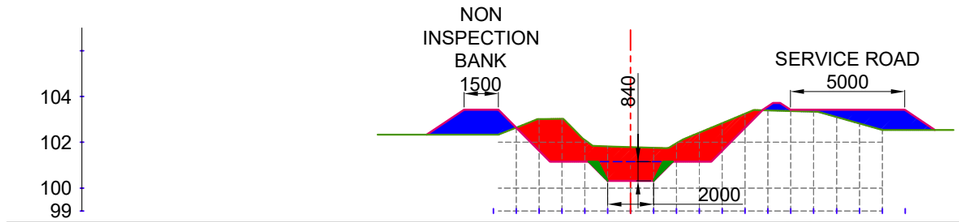
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 34 of 41

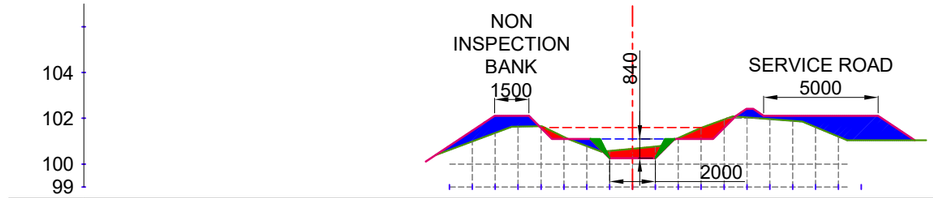
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)	102.641	103.013	103.027	102.095	101.816	101.786	101.760	101.957	102.423	102.837	103.250	103.393	103.362	103.332	103.101	102.822	102.542						
OFFSET (M)	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12				

CUTTING AREA (SQ.M) = 12.086
FILLING AREA (SQ.M) = 6.090

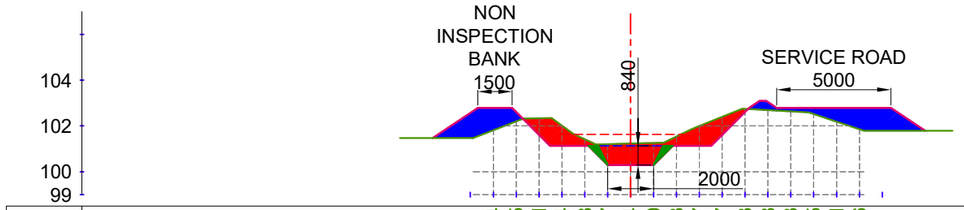
CH. (KM):- 13+700
DESIGNED BED LEVEL = 100.318 M



EXIST. LEVEL (M)	100.989	101.361	101.633	101.653	101.181	100.785	100.575	100.670	100.766	101.133	101.580	101.950	102.040	101.962	101.885	101.614	101.201						
OFFSET (M)	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10				

CUTTING AREA (SQ.M) = 2.034
FILLING AREA (SQ.M) = 6.466

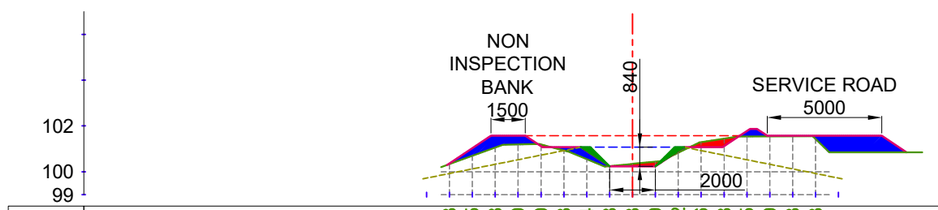
CH. (KM):- 13+900
DESIGNED BED LEVEL = 100.261 M



EXIST. LEVEL (M)	101.814	102.195	102.331	102.014	101.418	101.207	101.234	101.260	101.543	101.997	102.397	102.743	102.688	102.633	102.525	102.191	101.856						
OFFSET (M)	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11				

CUTTING AREA (SQ.M) = 6.509
FILLING AREA (SQ.M) = 6.783

CH. (KM):- 13+800
DESIGNED BED LEVEL = 100.289 M



EXIST. LEVEL (M)	100.333	100.695	101.058	101.190	101.190	100.933	100.554	100.248	100.343	100.439	100.832	101.296	101.448	101.545	101.549	101.553	101.433						
OFFSET (M)	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9				

CUTTING AREA (SQ.M) = 0.750
FILLING AREA (SQ.M) = 4.490

CH. (KM):- 14+000
DESIGNED BED LEVEL = 100.232 M

LEGEND

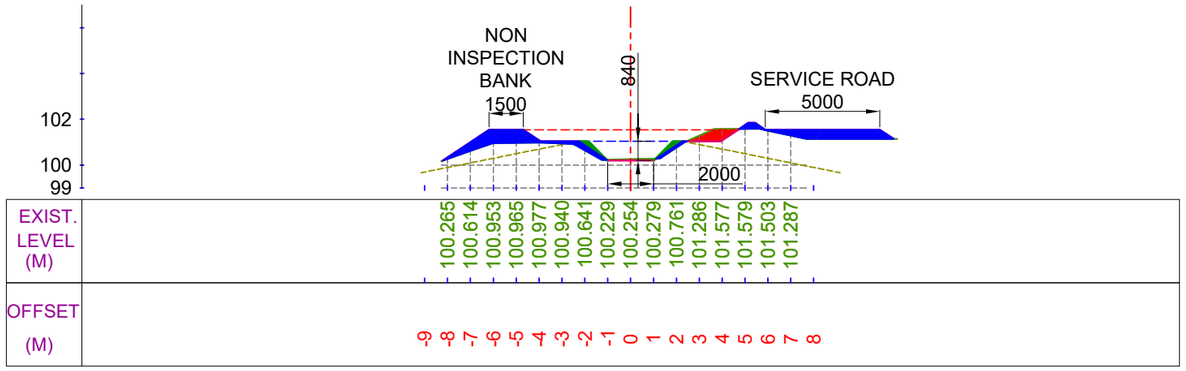
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

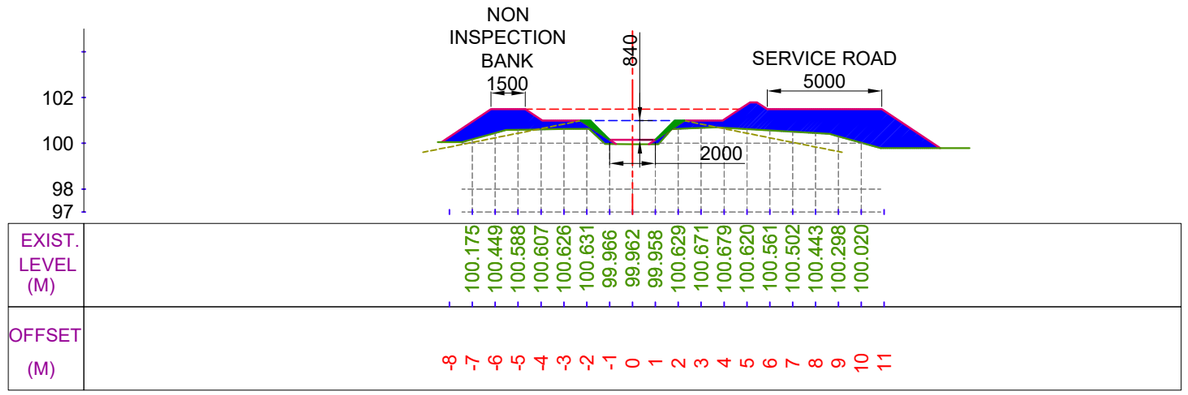
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 35 of 41

X SECTION OF HETAMPUR DY.



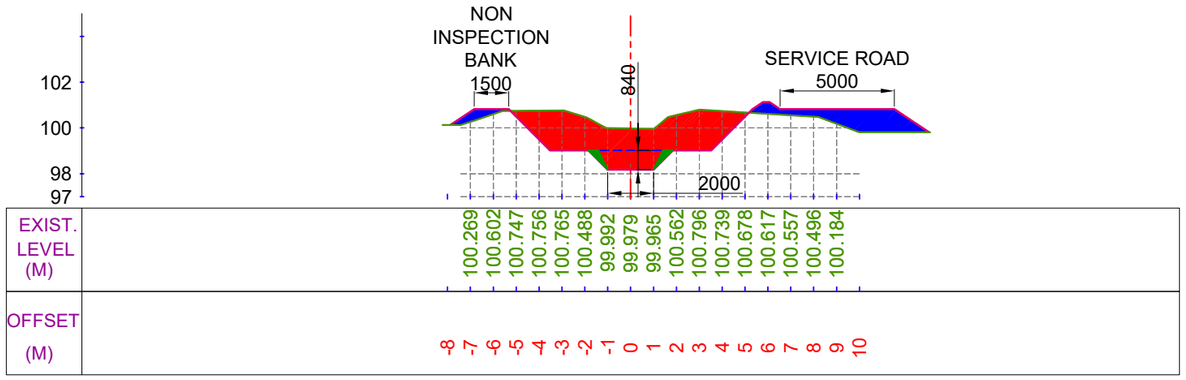
CUTTING AREA (SQ.M) = 0.793
FILLING AREA (SQ.M) = 4.289

CH. (KM):- 14+100
DESIGNED BED LEVEL = 100.203 M



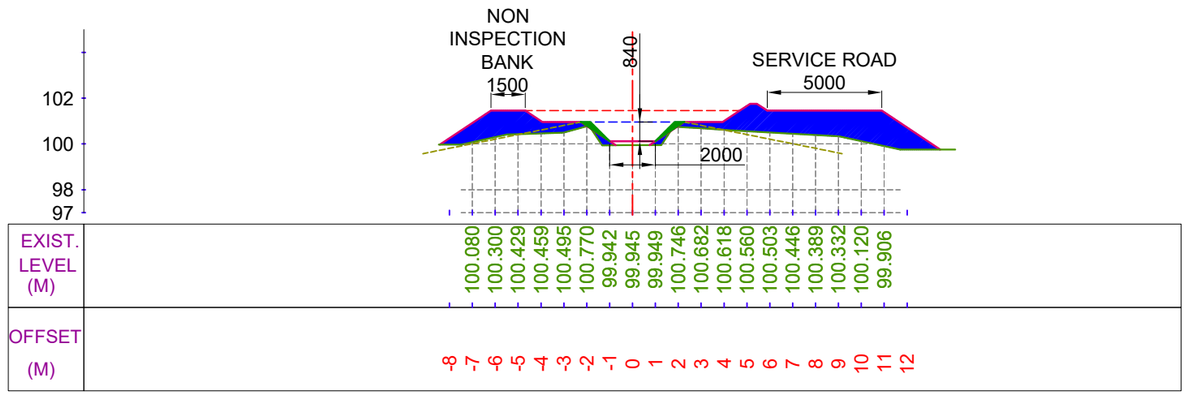
CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 14.686

CH. (KM):- 14+300
DESIGNED BED LEVEL = 100.146 M



CUTTING AREA (SQ.M) = 14.565
FILLING AREA (SQ.M) = 5.196

CH. (KM):- 14+200
DESIGNED BED LEVEL = 100.175 M



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 14.896

CH. (KM):- 14+400
DESIGNED BED LEVEL = 100.118 M

LEGEND

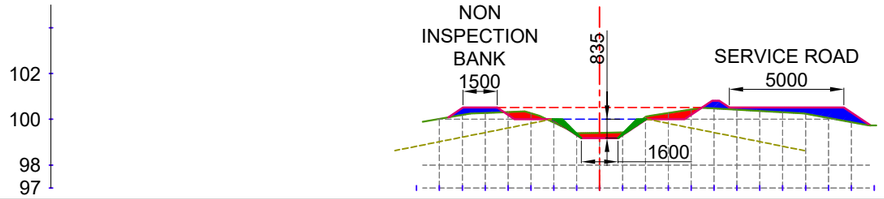
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC-

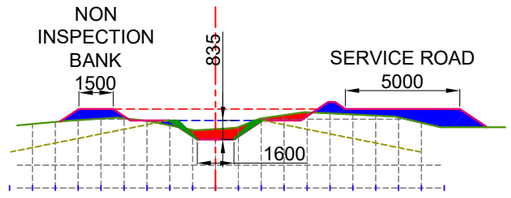
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)	100.018	100.187	100.277	100.319	100.263	99.853	99.395	99.408	99.421	100.103	100.271	100.426	100.471	100.416	100.361	100.307	100.244	100.059	99.875						
OFFSET (M)	-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) = 1.383
FILLING AREA (SQ.M) = 2.436

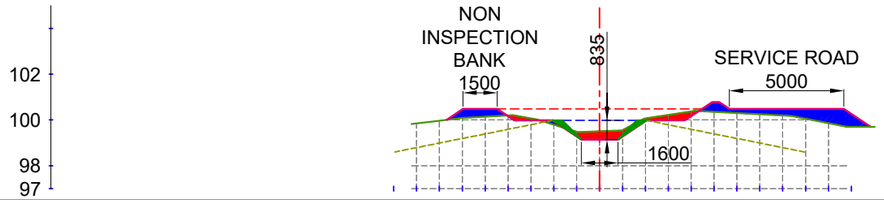
CH. (KM):- 14+500
DESIGNED BED LEVEL = 99.174 M



EXIST. LEVEL (M)	99.791	99.884	99.964	100.028	100.039	99.922	99.734	99.536	99.569	99.659	100.034	100.181	100.307	100.258	100.208	100.158	100.081	99.849							
OFFSET (M)	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10					

CUTTING AREA (SQ.M) = 1.471
FILLING AREA (SQ.M) = 4.497

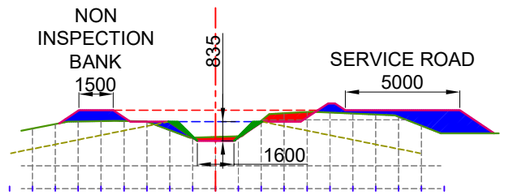
CH. (KM):- 14+700
DESIGNED BED LEVEL = 99.117 M



EXIST. LEVEL (M)	99.845	99.969	100.090	100.145	100.199	100.066	99.791	99.486	99.505	99.556	100.066	100.222	100.377	100.356	100.304	100.251	100.199	100.056	99.857						
OFFSET (M)	-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) = 1.408
FILLING AREA (SQ.M) = 3.502

CH. (KM):- 14+600
DESIGNED BED LEVEL = 99.146 M



EXIST. LEVEL (M)	99.621	99.818	99.932	99.947	99.950	99.922	99.551	99.224	99.257	99.290	99.977	100.292	100.347	100.324	100.279	100.234	100.139	99.749							
OFFSET (M)	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10					

CUTTING AREA (SQ.M) = 1.026
FILLING AREA (SQ.M) = 5.000

CH. (KM):- 14+800
DESIGNED BED LEVEL = 99.088 M

LEGEND

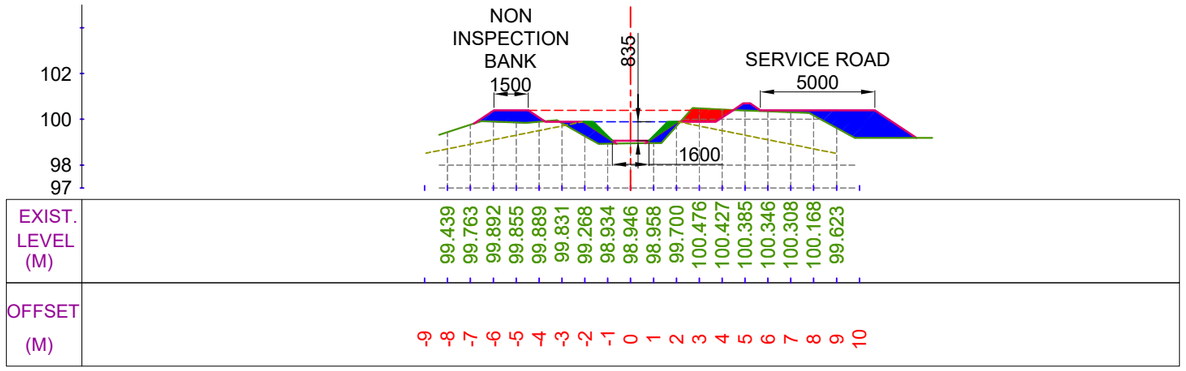
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

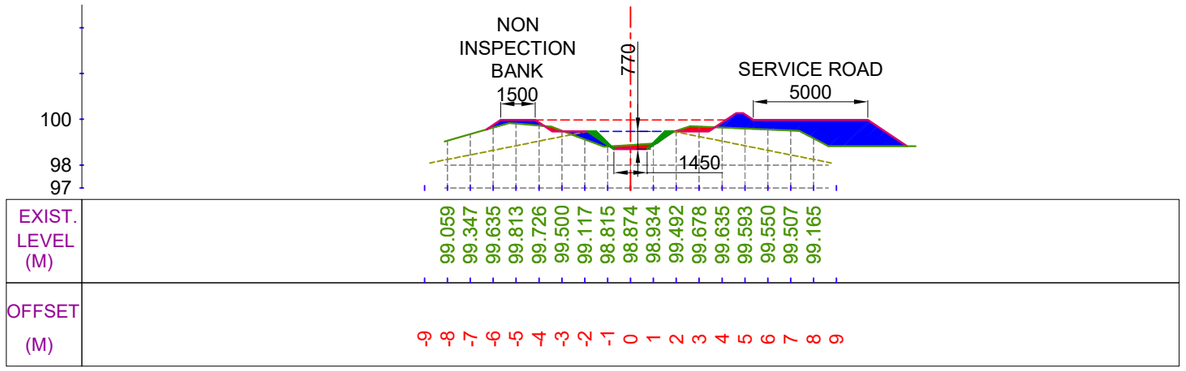
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 37 of 41

X SECTION OF HETAMPUR DY.



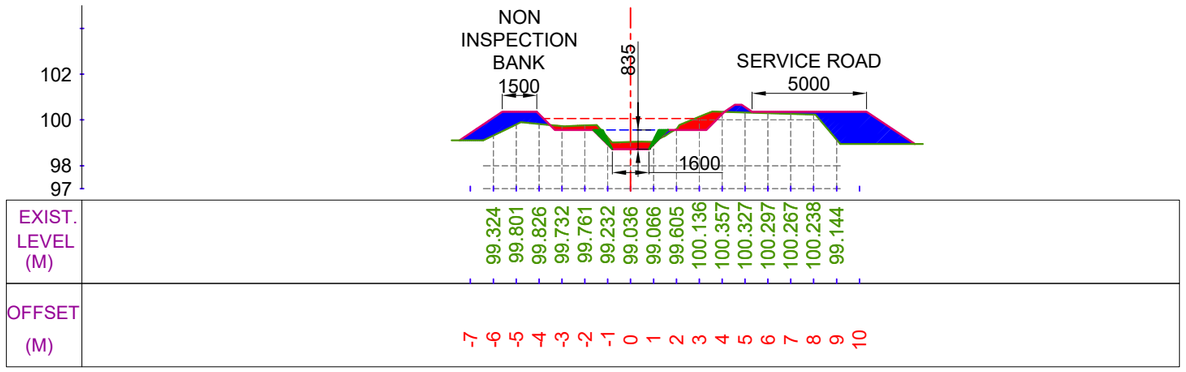
CUTTING AREA (SQ.M) = 0.970
FILLING AREA (SQ.M) = 6.338

CH. (KM):- 14+900
DESIGNED BED LEVEL = 99.060 M



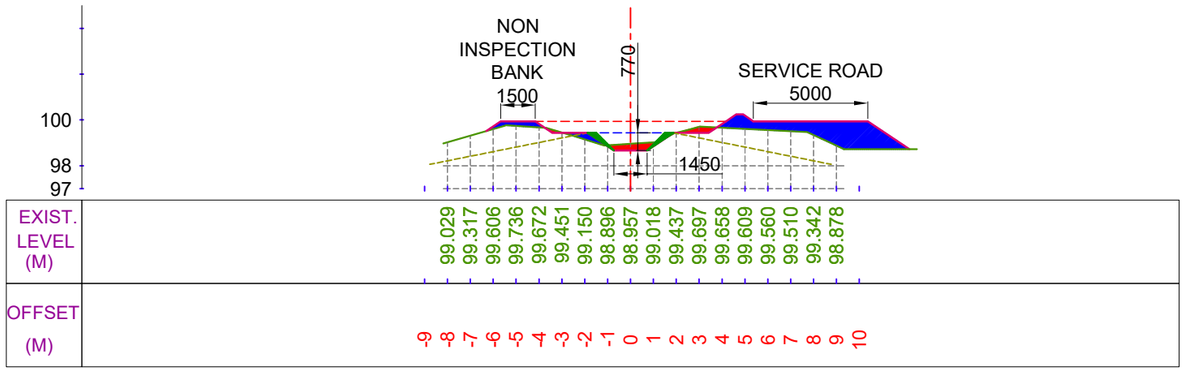
CUTTING AREA (SQ.M) = 0.650
FILLING AREA (SQ.M) = 6.409

CH. (KM):- 15+100
DESIGNED BED LEVEL = 98.698 M



CUTTING AREA (SQ.M) = 1.816
FILLING AREA (SQ.M) = 6.500

CH. (KM):- 15+000
DESIGNED BED LEVEL = 98.726 M



CUTTING AREA (SQ.M) = 0.839
FILLING AREA (SQ.M) = 6.100

CH. (KM):- 15+200
DESIGNED BED LEVEL = 98.669 M

LEGEND

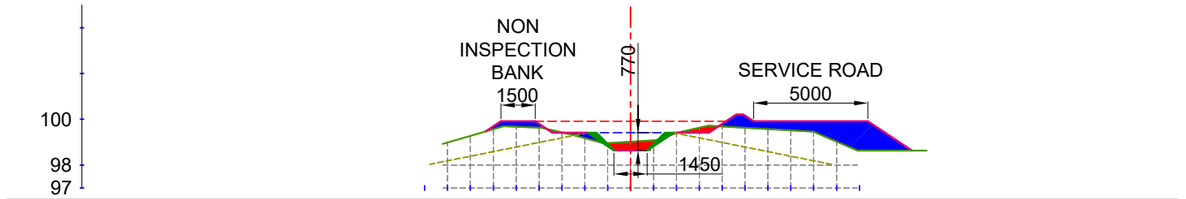
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 38 of 41

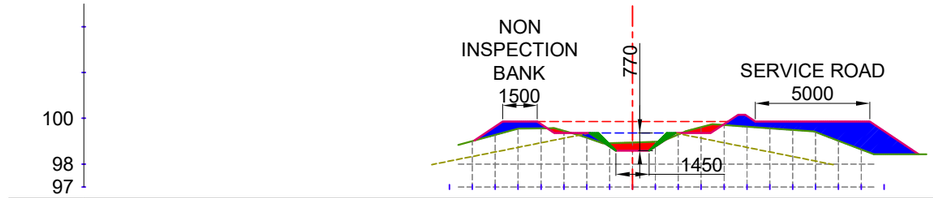
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)	98.989	99.277	99.565	99.670	99.629	99.425	99.176	98.962	99.022	99.082	99.400	99.630	99.683	99.627	99.570	99.514	99.454	99.024			
OFFSET (M)	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	

CUTTING AREA (SQ.M) = 1.026
FILLING AREA (SQ.M) = 5.816

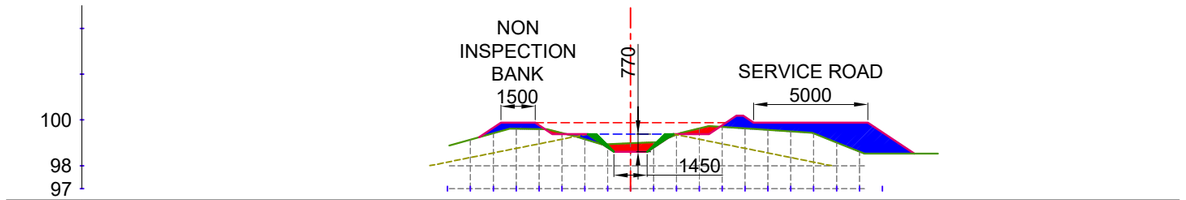
CH. (KM):- 15+300
DESIGNED BED LEVEL = 98.641 M



EXIST. LEVEL (M)	99.002	99.272	99.543	99.561	99.450	99.152	98.915	98.943	98.971	99.294	99.612	99.703	99.633	99.562	99.491	99.398	99.017	98.637				
OFFSET (M)	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11		

CUTTING AREA (SQ.M) = 1.127
FILLING AREA (SQ.M) = 6.106

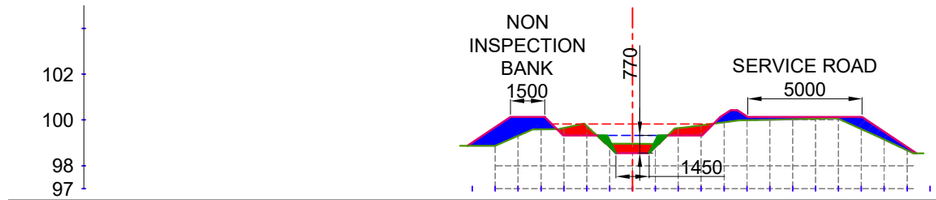
CH. (KM):- 15+500
DESIGNED BED LEVEL = 98.583 M



EXIST. LEVEL (M)	99.141	99.420	99.616	99.601	99.430	99.158	98.940	98.983	99.026	99.358	99.626	99.692	99.628	99.565	99.502	99.419	99.018	98.616				
OFFSET (M)	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11		

CUTTING AREA (SQ.M) = 1.081
FILLING AREA (SQ.M) = 5.963

CH. (KM):- 15+400
DESIGNED BED LEVEL = 98.612 M



EXIST. LEVEL (M)	98.870	99.311	99.592	99.653	99.743	98.963	98.958	98.952	99.643	99.767	99.898	99.989	100.010	100.032	100.054	100.052	99.602	99.145	98.670				
OFFSET (M)	-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) = 1.838
FILLING AREA (SQ.M) = 4.109

CH. (KM):- 15+600
DESIGNED BED LEVEL = 98.555 M

LEGEND

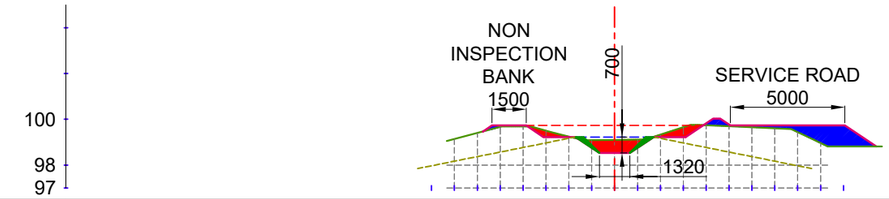
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 39 of 41

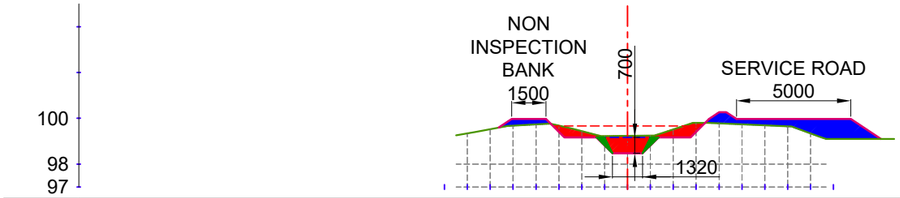
X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)	99.136	99.398	99.661	99.688	99.499	99.242	99.084	99.097	99.111	99.327	99.654	99.743	99.699	99.654	99.610	99.442	98.963		
OFFSET (M)	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10

CUTTING AREA (SQ.M) = 1.904
FILLING AREA (SQ.M) = 2.754

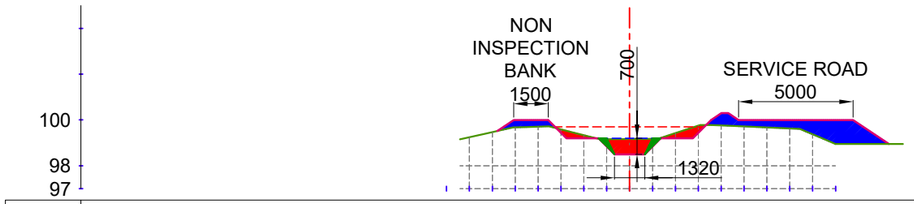
CH. (KM):- 15+700
DESIGNED BED LEVEL = 98.526 M



EXIST. LEVEL (M)	99.340	99.523	99.675	99.729	99.674	99.435	99.224	99.232	99.241	99.517	99.803	99.778	99.734	99.689	99.644	99.339			
OFFSET (M)	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	

CUTTING AREA (SQ.M) = 2.591
FILLING AREA (SQ.M) = 4.059

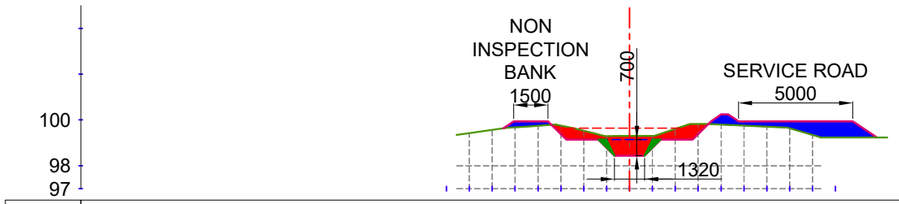
CH. (KM):- 15+900
DESIGNED BED LEVEL = 98.469 M



EXIST. LEVEL (M)	99.243	99.467	99.674	99.710	99.590	99.337	99.154	99.165	99.176	99.423	99.753	99.761	99.716	99.671	99.627	99.371			
OFFSET (M)	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	

CUTTING AREA (SQ.M) = 1.889
FILLING AREA (SQ.M) = 4.775

CH. (KM):- 15+800
DESIGNED BED LEVEL = 98.498 M



EXIST. LEVEL (M)	99.429	99.568	99.679	99.747	99.751	99.535	99.295	99.300	99.305	99.612	99.826	99.796	99.751	99.707	99.638	99.344			
OFFSET (M)	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	

CUTTING AREA (SQ.M) = 3.302
FILLING AREA (SQ.M) = 3.362

CH. (KM):- 16+000
DESIGNED BED LEVEL = 98.441 M

LEGEND

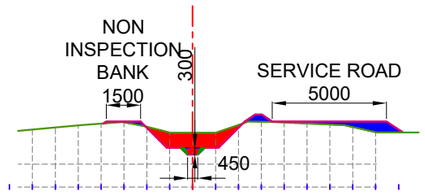
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 40 of 41

X SECTION OF HETAMPUR DY.



EXIST. LEVEL (M)	99.510 99.602 99.686 99.763 99.820 99.635 99.374 99.367 99.369 99.708 99.847 99.814 99.769 99.724 99.614 99.391
OFFSET (M)	-8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9

CUTTING AREA (SQ.M) = 2.366

FILLING AREA (SQ.M) = 1.512

CH. (KM):- 16+100

DESIGNED BED LEVEL = 98.410 M

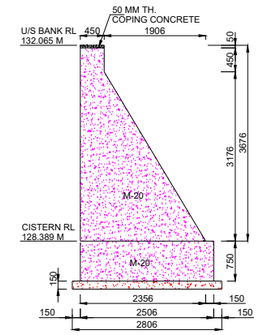
LEGEND			
	CUT AREA		EXISTING BED LINE
			F.S.L.
	FILL AREA		DESIGNED BED LINE
			H.G. LINE

Prepared by :-

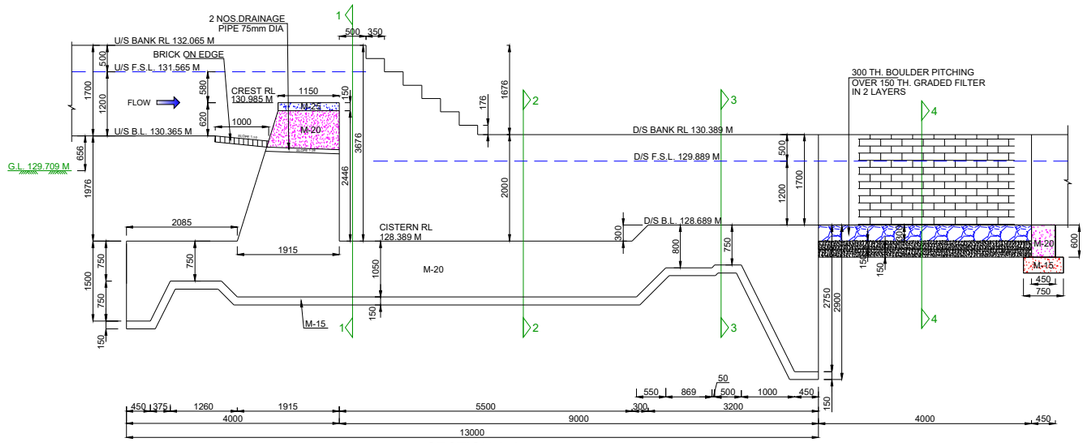
WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ XSEC- 41 of 41

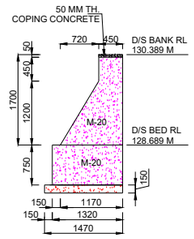
DRAWING OF STRUCTURES



SECTION AT 5-5
(SCALE A)



SECTION A-A
(SCALE A)



SECTION AT 6-6
(SCALE A)

NOTES:-

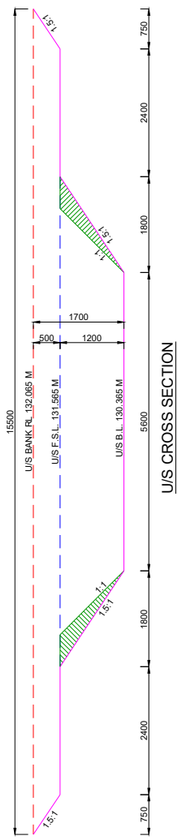
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

FLOOR	M 20
FOUNDATION OF ABUTMENTS & WING WALL	M 20
PCC UNDER FLOOR	M 15
ABUTMENTS / WING WALLS	M 20

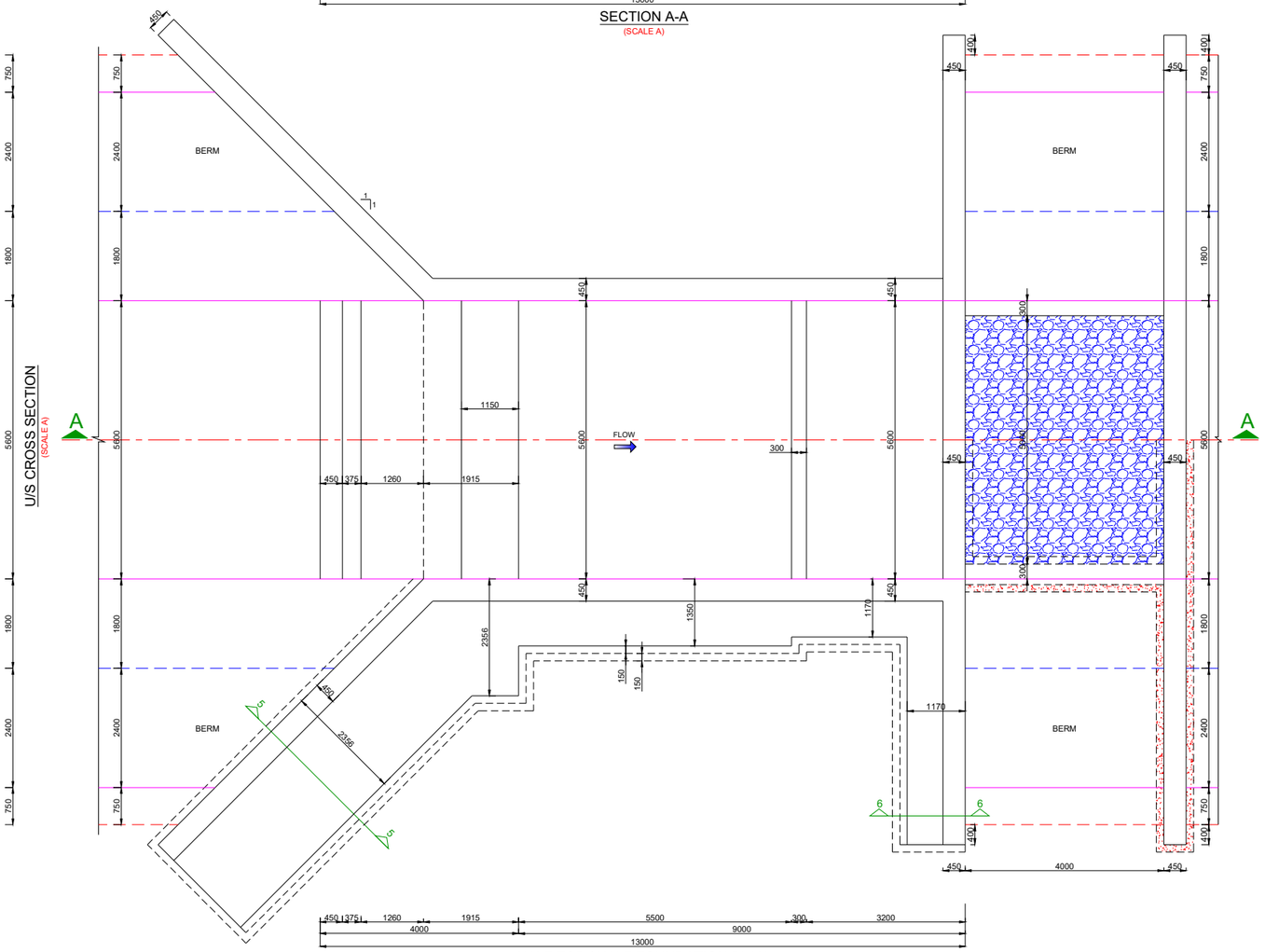
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

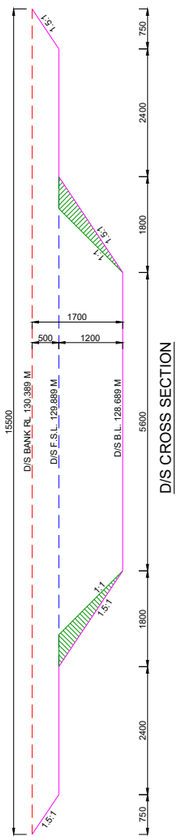
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	4.180	4.180	CUMEC
VERTICAL DROP	1.676	1.676	METRE
FULL SUPPLY DEPTH	1.200	1.200	METRE
BED WIDTH	5.600	5.600	METRE
BED SLOPE	1 : 4700	1 : 4700	



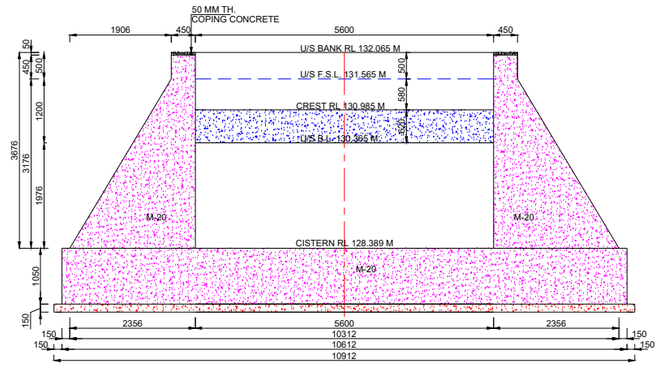
U/S CROSS SECTION
(SCALE A)



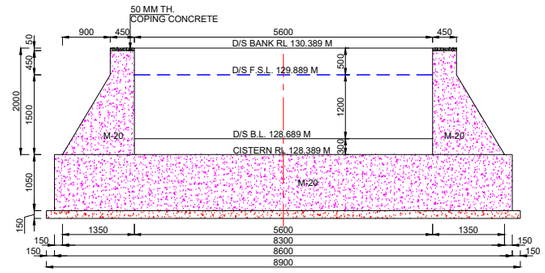
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



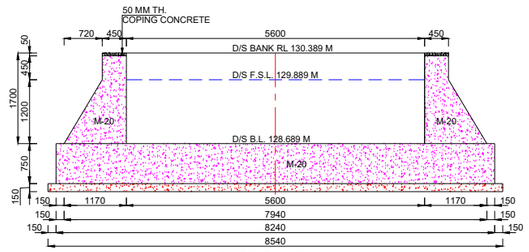
D/S CROSS SECTION
(SCALE A)



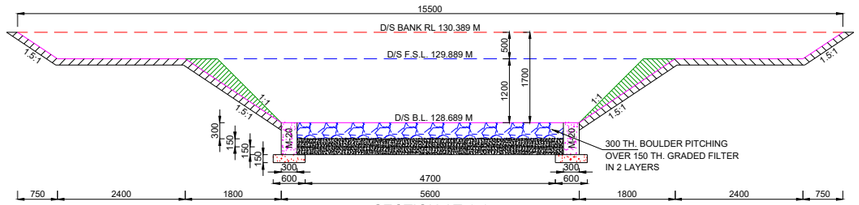
SECTION AT 1-1
(SCALE A)



SECTION AT 2-2
(SCALE A)



SECTION AT 3-3
(SCALE A)

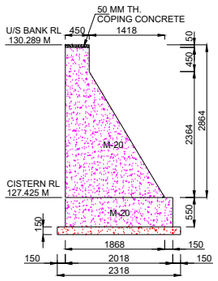


SECTION AT 4-4
(SCALE A)

SCALE A:-

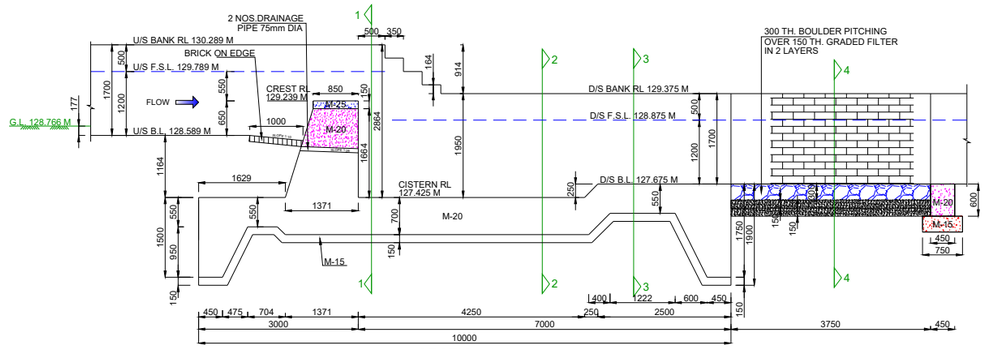
1000 0 1000 2000 3000

Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 1.676 M HT. FALL AT KM. 1.930 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL — 1 of 1



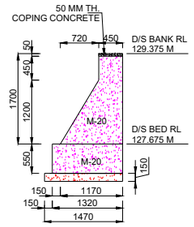
SECTION AT 5-5

(SCALE A)



SECTION A-A

(SCALE A)



SECTION AT 6-6

(SCALE A)

NOTES:-

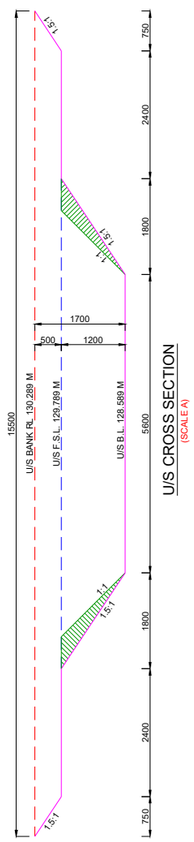
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

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.

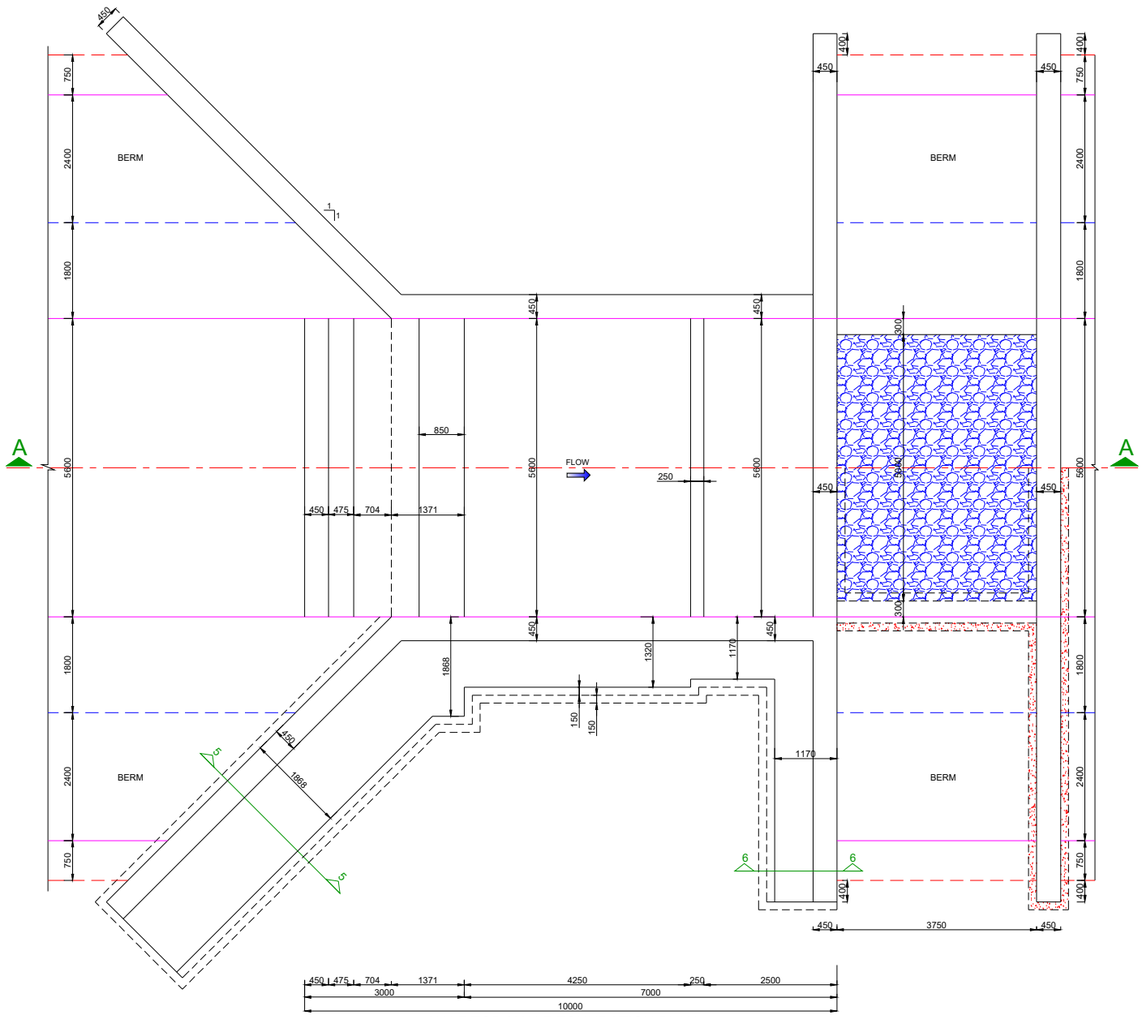
HYDRAULIC:- DATA

	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	4.180	4.180	CUMEC
VERTICAL DROP	0.914	0.914	METRE
FULL SUPPLY DEPTH	1.200	1.200	METRE
BED WIDTH	5.600	5.600	METRE
BED SLOPE	1 : 4700	1 : 4700	



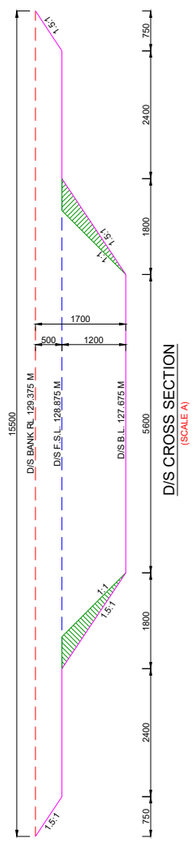
U/S CROSS SECTION

(SCALE A)



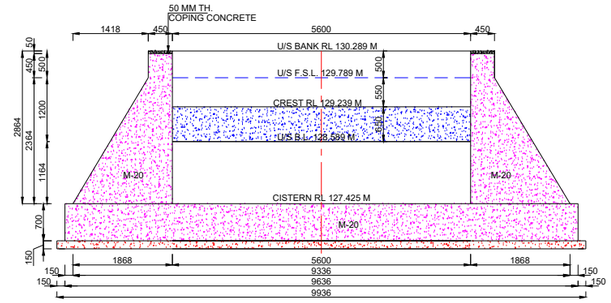
HALF TOP / HALF FOUNDATION PLAN

(SCALE A)



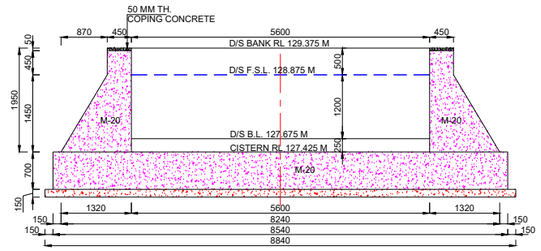
D/S CROSS SECTION

(SCALE A)



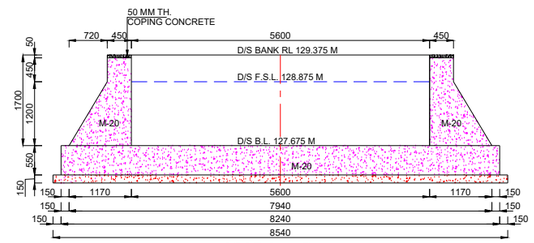
SECTION AT 1-1

(SCALE A)



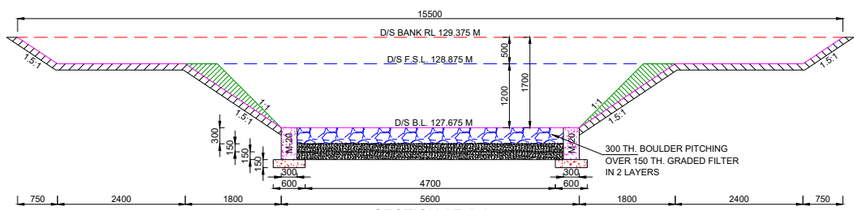
SECTION AT 2-2

(SCALE A)



SECTION AT 3-3

(SCALE A)



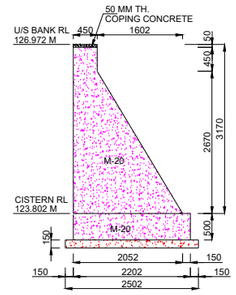
SECTION AT 4-4

(SCALE A)

SCALE A:-

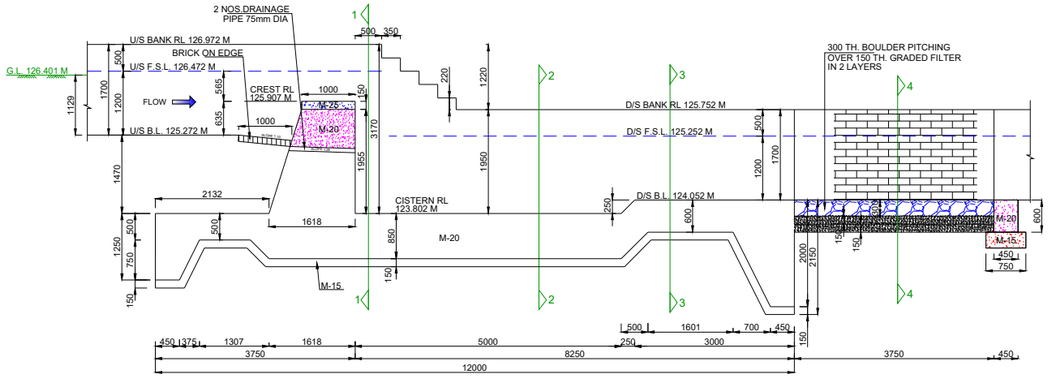
1000 0 1000 2000 3000

Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 0.914 M HT. FALL AT KM. 2.400 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL 1 of 1



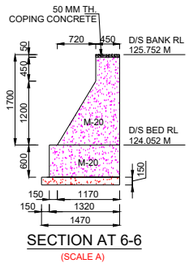
SECTION AT 5-5

(SCALE A)



SECTION A-A

(SCALE A)



SECTION AT 6-6

(SCALE A)

NOTES:-

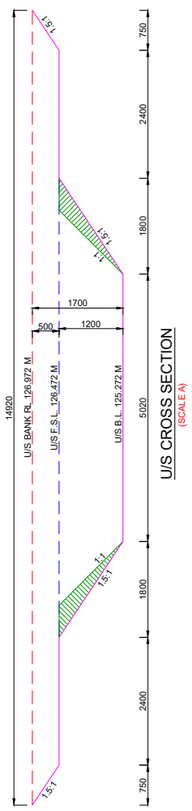
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

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.

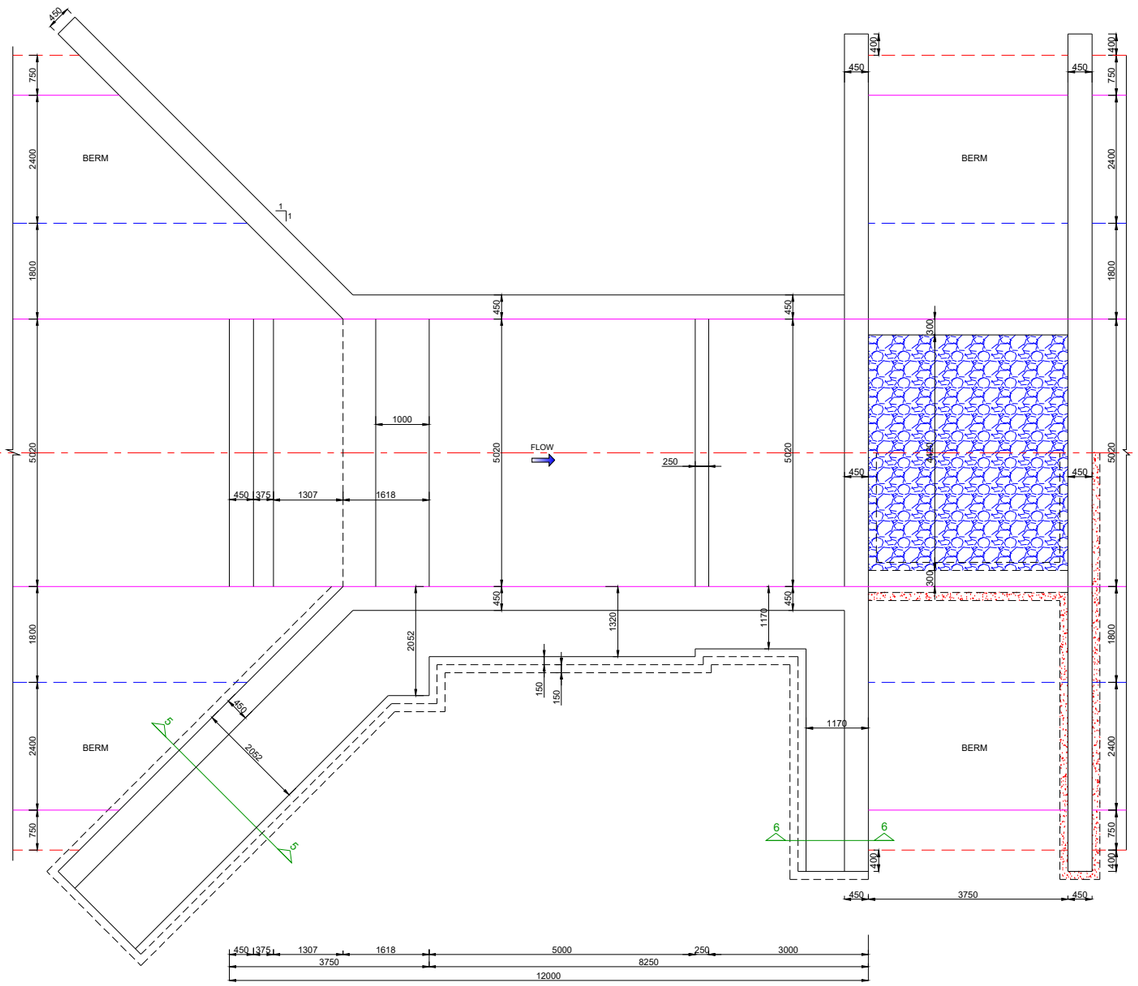
HYDRAULIC:- DATA

	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	3.740	3.740	CUMEC
VERTICAL DROP	1.220	1.220	METRE
FULL SUPPLY DEPTH	1.200	1.200	METRE
BED WIDTH	5.020	5.020	METRE
BED SLOPE	1 : 4700	1 : 4700	



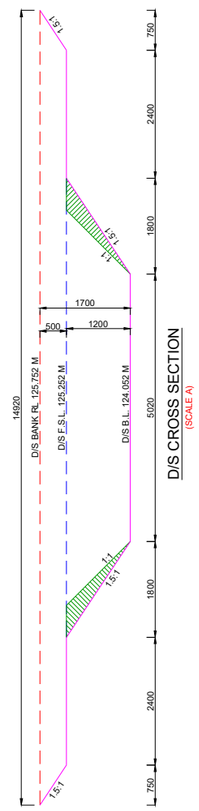
U/S CROSS SECTION

(SCALE A)



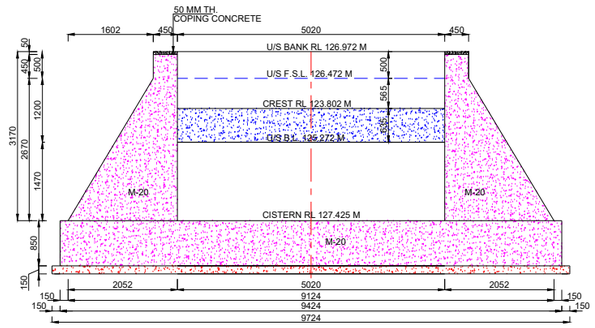
HALF TOP / HALF FOUNDATION PLAN

(SCALE A)



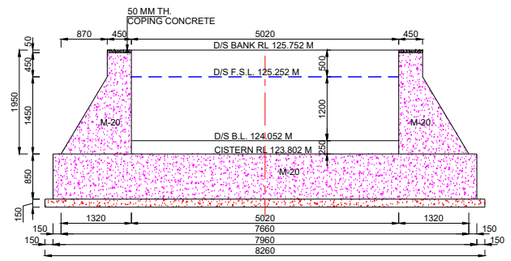
D/S CROSS SECTION

(SCALE A)



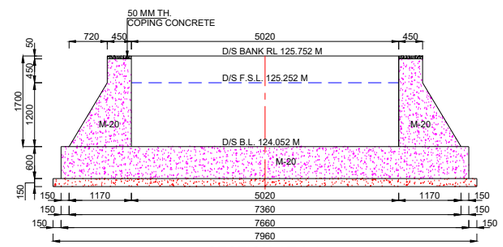
SECTION AT 1-1

(SCALE A)



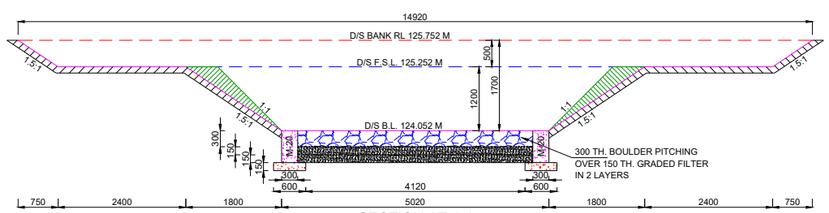
SECTION AT 2-2

(SCALE A)



SECTION AT 3-3

(SCALE A)



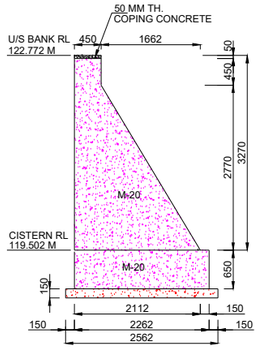
SECTION AT 4-4

(SCALE A)

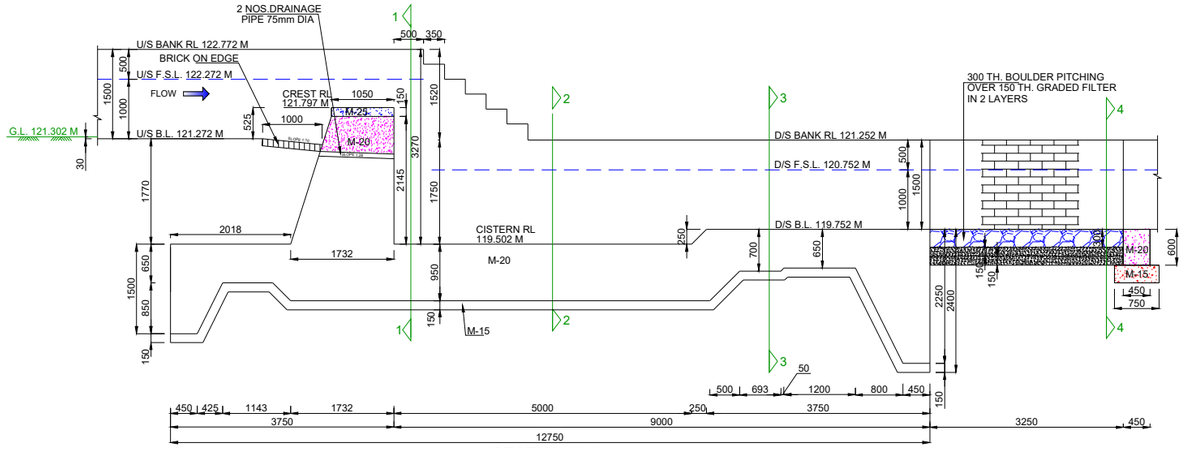
SCALE A:-

1000 0 1000 2000 3000

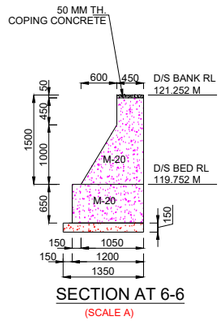
Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 1.220 M HT. FALL AT KM. 4.380 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL 1 of 1



SECTION AT 5-5
(SCALE A)



SECTION A-A
(SCALE A)



SECTION AT 6-6
(SCALE A)

NOTES:-

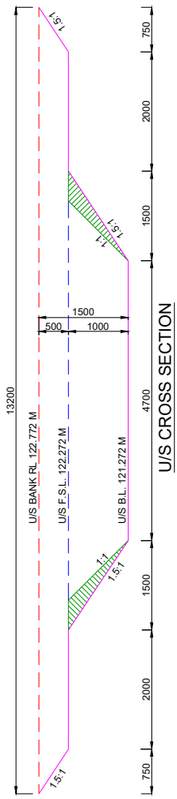
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

FLOOR	M 20
FOUNDATION OF ABUTMENTS & WING WALL	M 20
PCC UNDER FLOOR	M 15
ABUTMENTS / WING WALLS	M 20

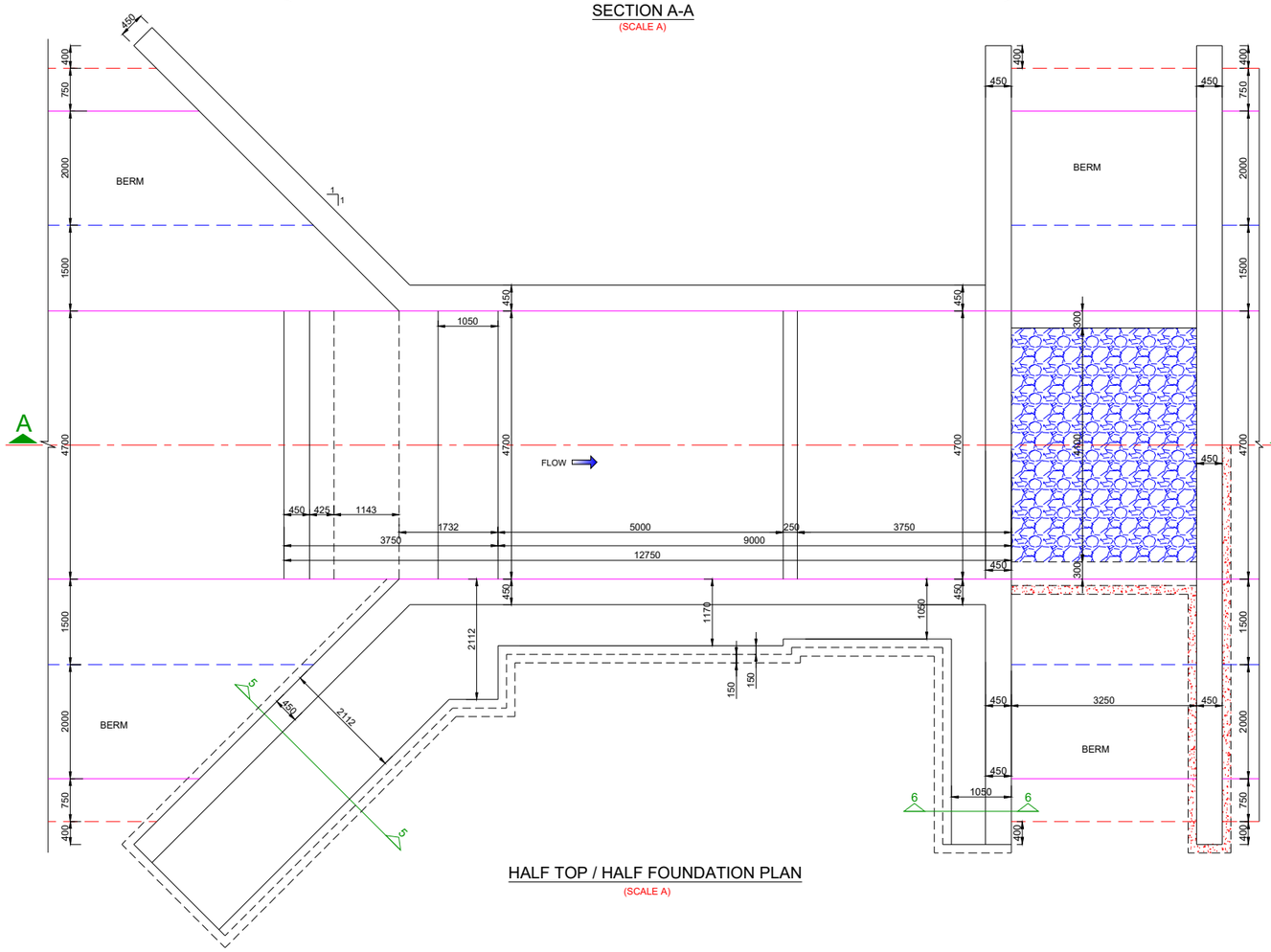
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

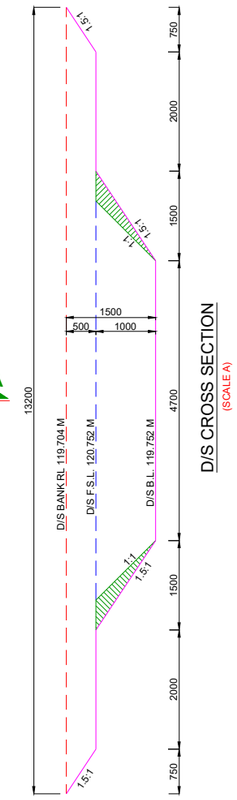
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	2.600	2.600	CUMEC
VERTICAL DROP	1.520	1.520	METRE
FULL SUPPLY DEPTH	1.000	1.000	METRE
BED WIDTH	4.700	4.700	METRE
BED SLOPE	1 : 4700	1 : 4700	



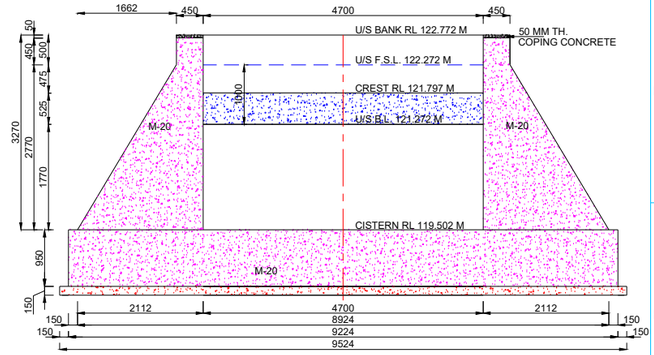
U/S CROSS SECTION
(SCALE A)



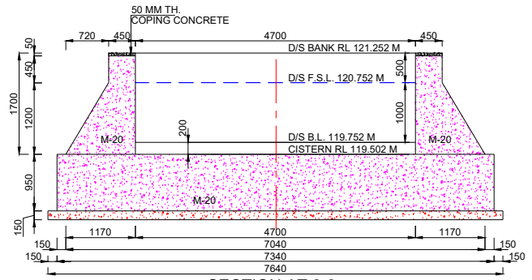
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



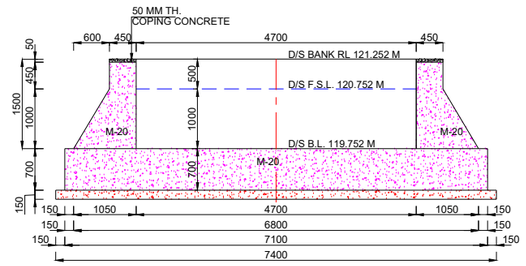
D/S CROSS SECTION
(SCALE A)



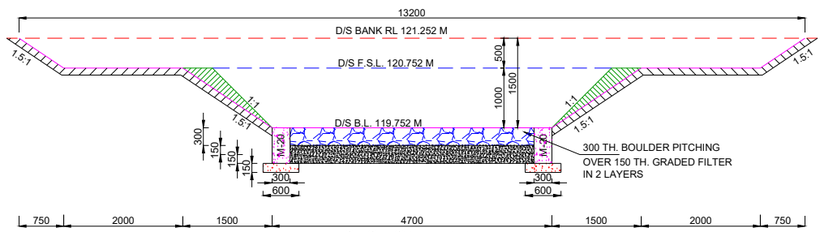
SECTION AT 1-1
(SCALE A)



SECTION AT 2-2
(SCALE A)



SECTION AT 3-3
(SCALE A)

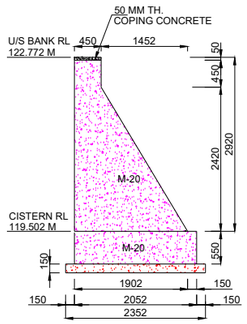


SECTION AT 4-4
(SCALE A)

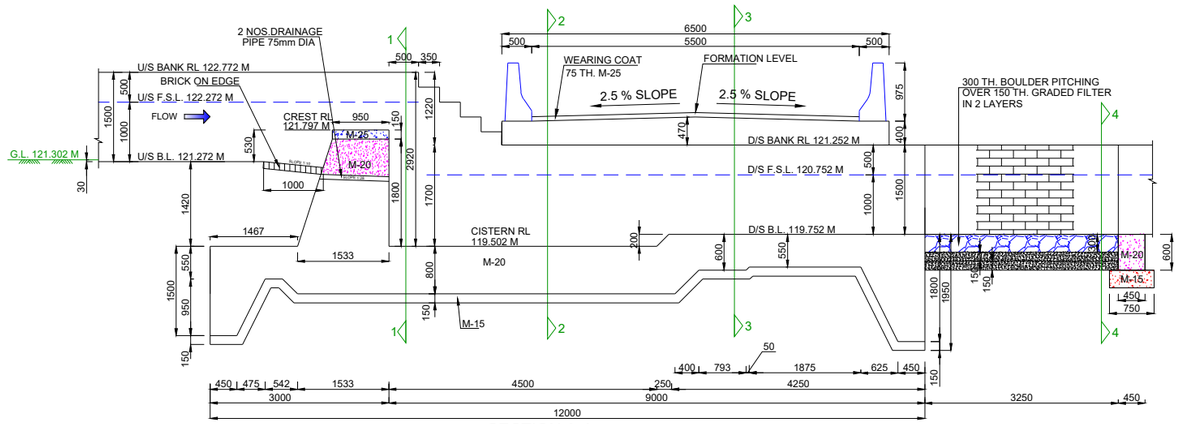
SCALE A:-

1000 0 1000 2000 3000

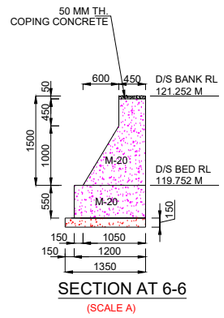
Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 1.520 M HT. FALL AT KM. 5.980 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL — 1 of 1



SECTION AT 5-5
(SCALE A)



SECTION A-A
(SCALE A)



SECTION AT 6-6
(SCALE A)

NOTES:-

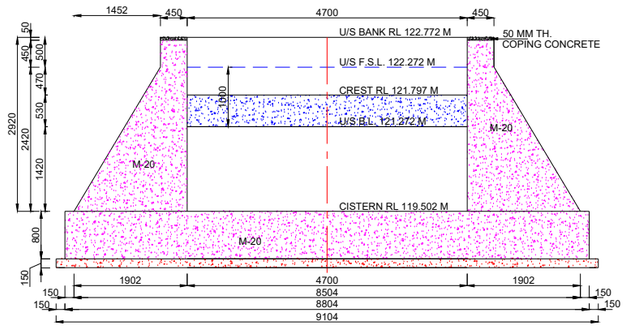
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

PCC UNDER FLOOR	M 15
FOUNDATION OF ABUTMENTS & WING WALL	M 20
FLOOR	M 20
ABUTMENTS / WING WALLS	M 20
SLAB & DIRT WALL	M 25

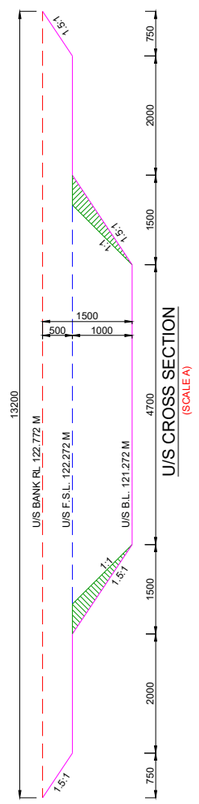
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

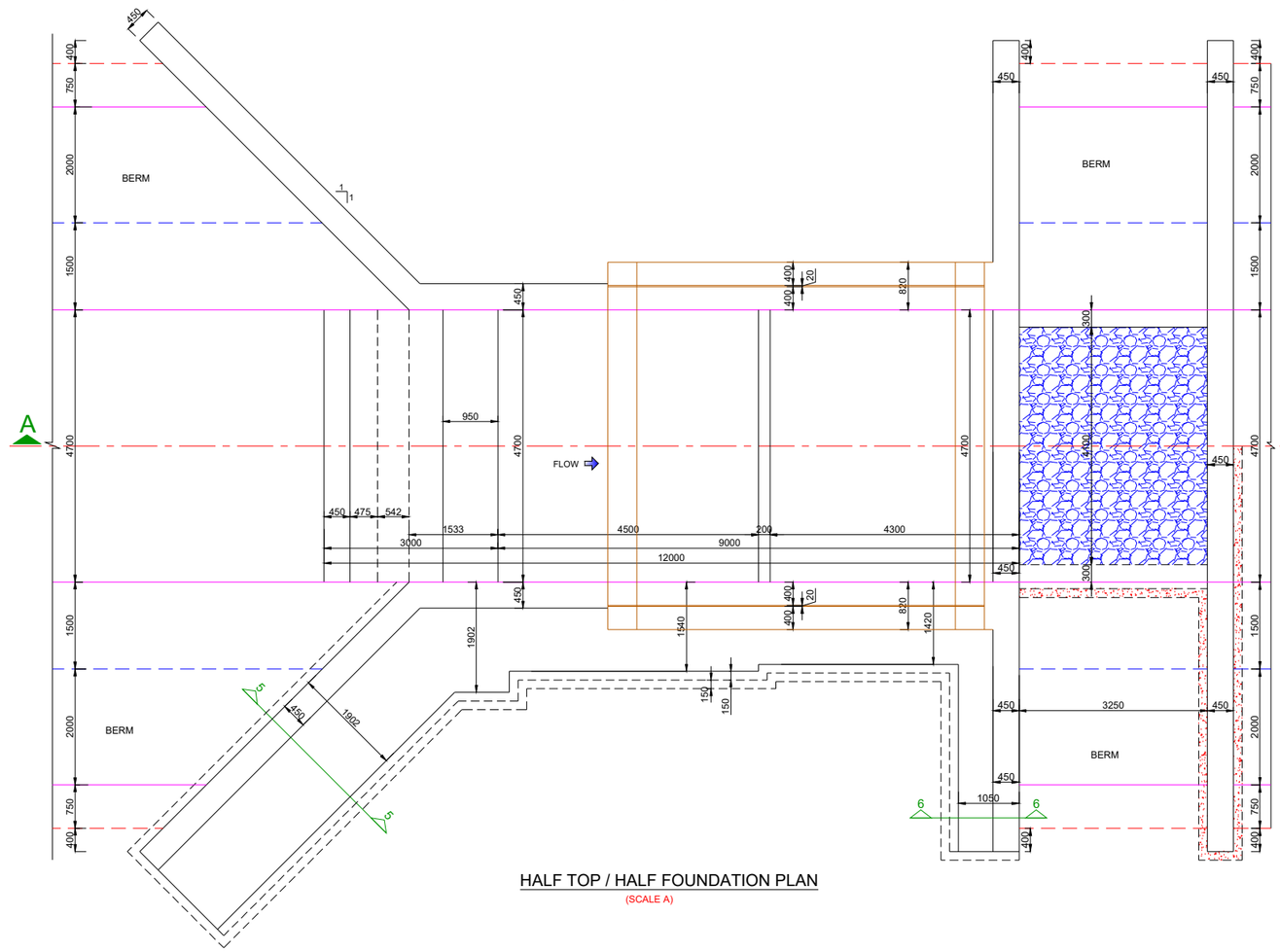
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	2.600	2.600	CUMEC
VERTICAL DROP	1.220	1.220	METRE
FULL SUPPLY DEPTH	1.000	1.000	METRE
BED WIDTH	4.700	4.700	METRE
BED SLOPE	1 : 4700	1 : 4700	



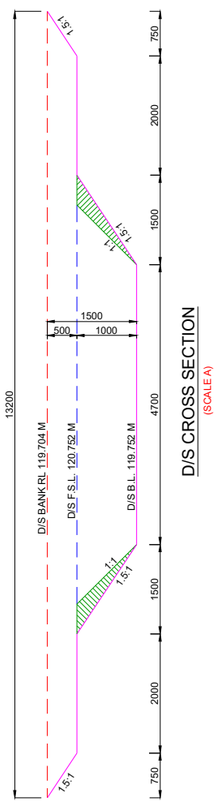
SECTION AT 1-1
(SCALE A)



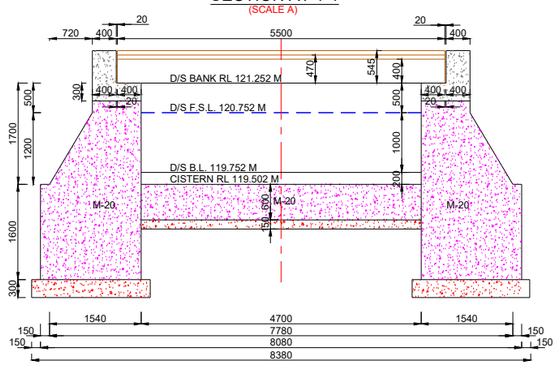
U/S CROSS SECTION
(SCALE A)



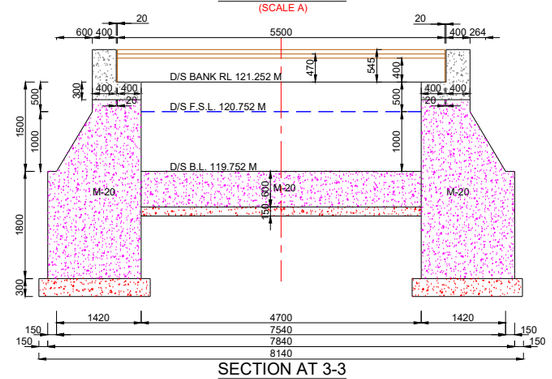
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



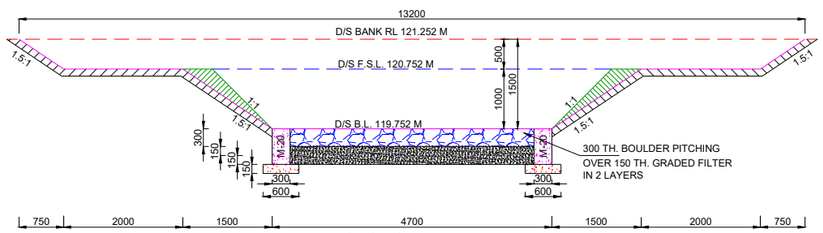
D/S CROSS SECTION
(SCALE A)



SECTION AT 2-2
(SCALE A)

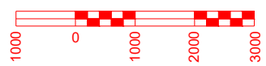


SECTION AT 3-3
(SCALE A)

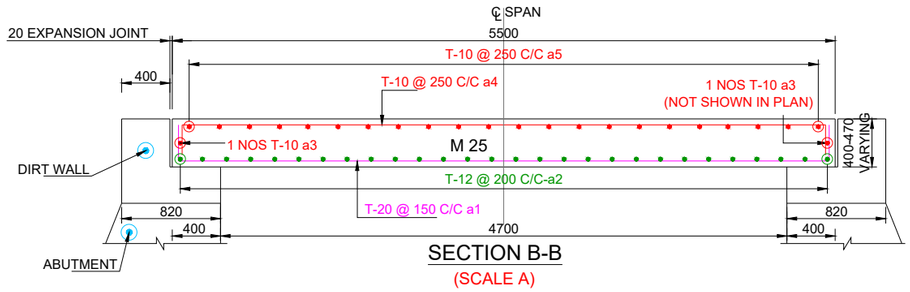


SECTION AT 4-4
(SCALE A)

SCALE A:-

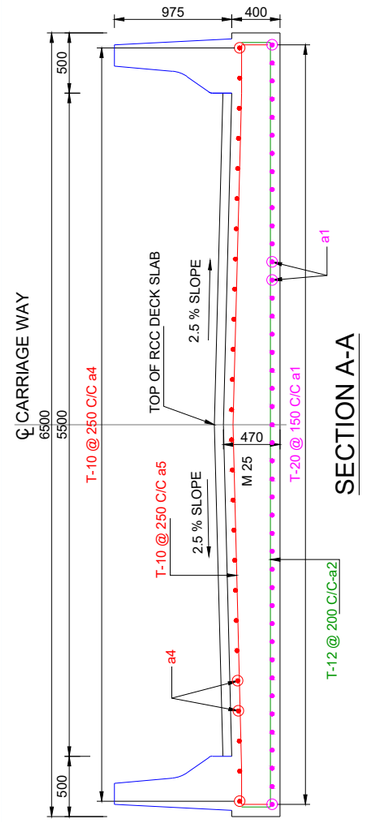


Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 1.220 M HT. FALL AT KM. 6.280 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL — 1 of 2

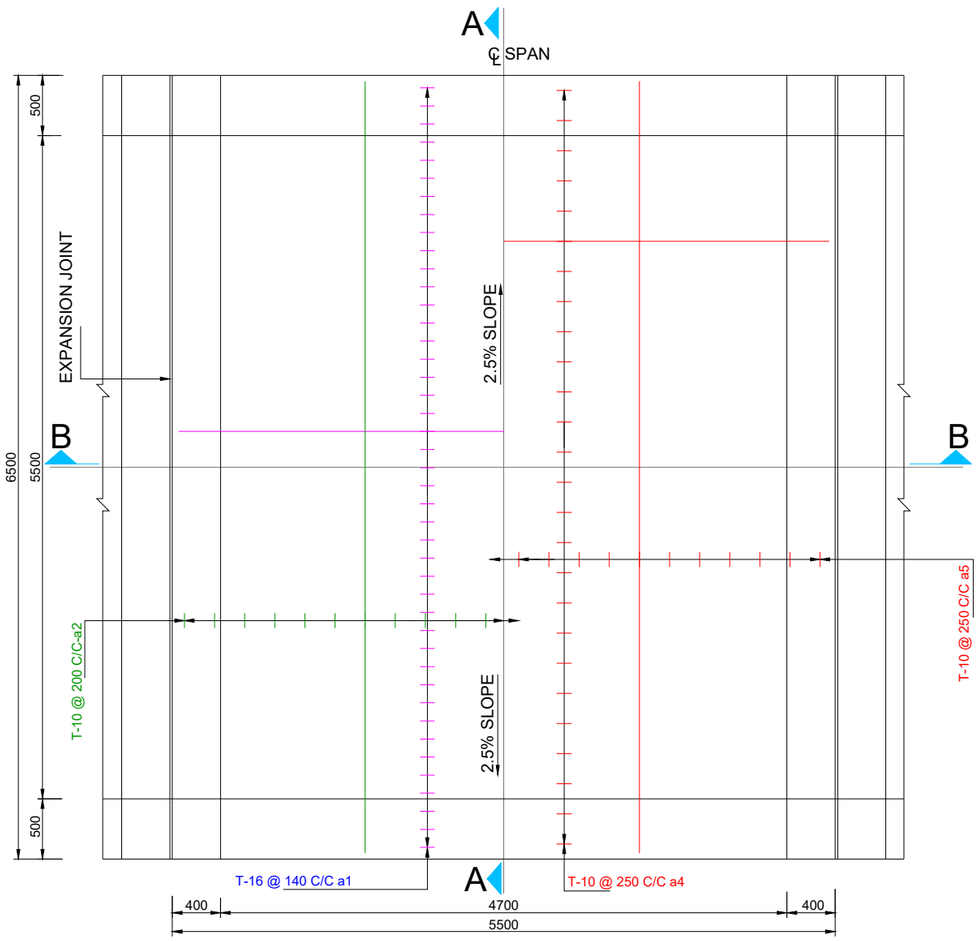


SECTION B-B

(SCALE A)



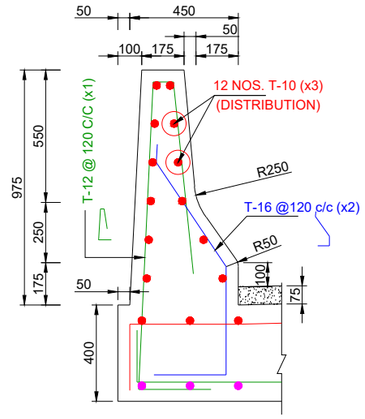
SECTION A-A



BOTTOM REINFORCEMENT TOP REINFORCEMENT

PLAN SHOWING REINFORCEMENT DETAILS OF DECK SLAB

(SCALE A)



REINF. DETAILS OF CRASH BARRIER IN MAIN SLAB

(SCALE B)

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	R=80, 350, 5400, 350	20	150	44
2	a2	R=50, 350, 6400, 350	12	200	28
3	a3	6400	10	-	2
4	a4	5400, R=40, 350, 350	10	250	26
5	a5	450, 2750, 2750, 450, 250, 250	10	250	22
CRASH BARRIER					
1	x1	75, 1276, 950, 300	12	120	46X2
2	x2	75, 540, 450, 300	16	120	46X2
3	x3	5400	10	-	12X2

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 (f_y=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 = α1. lbnet
WHERE, α1 = 1.0 for p%≤25%
α1 = 1.15 for 25%≤p%≤33%
α1 = 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.

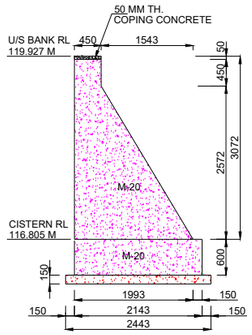
19. LAP SPLICES SHALL BE CONSIDERED AS STAGGERED IF THE C/C DISTANCE OF SPLICES IS NOT LESS THAN 1.3 TIMES THE LAP LENGTH CALCULATED.

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.

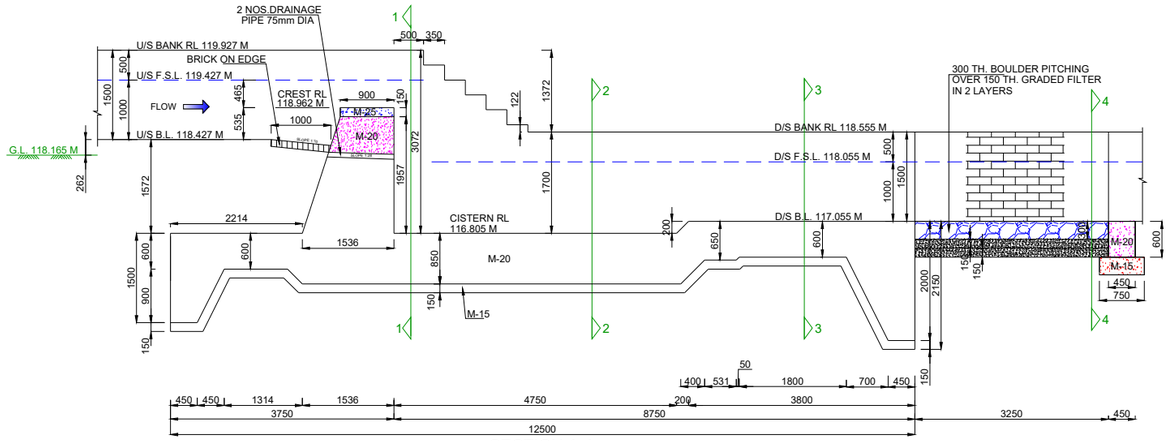
SCALE A:- 400 0 400 800 1200

SCALE B:- 200 0 200 400 600

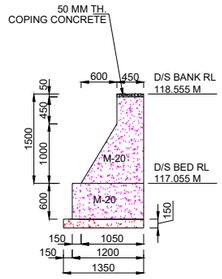
Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND	
	Drawing Title :-	REINFORCEMENT DETAILS OF SLAB FOR FALL CUM BRG. AT KM. 6.280 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)	
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL	2 of 2
	Drawn by:-	Checked by:-	Approved by:-



SECTION AT 5-5
(SCALE A)



SECTION A-A
(SCALE A)



SECTION AT 6-6
(SCALE A)

NOTES:-

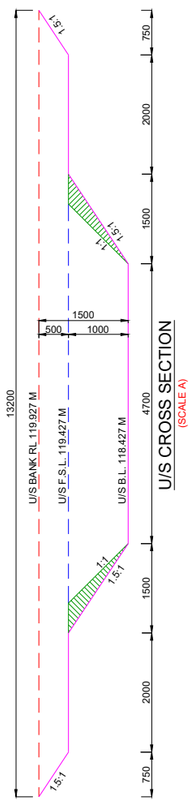
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

FLOOR	M 20
FOUNDATION OF ABUTMENTS & WING WALL	M 20
PCC UNDER FLOOR	M 15
ABUTMENTS / WING WALLS	M 20

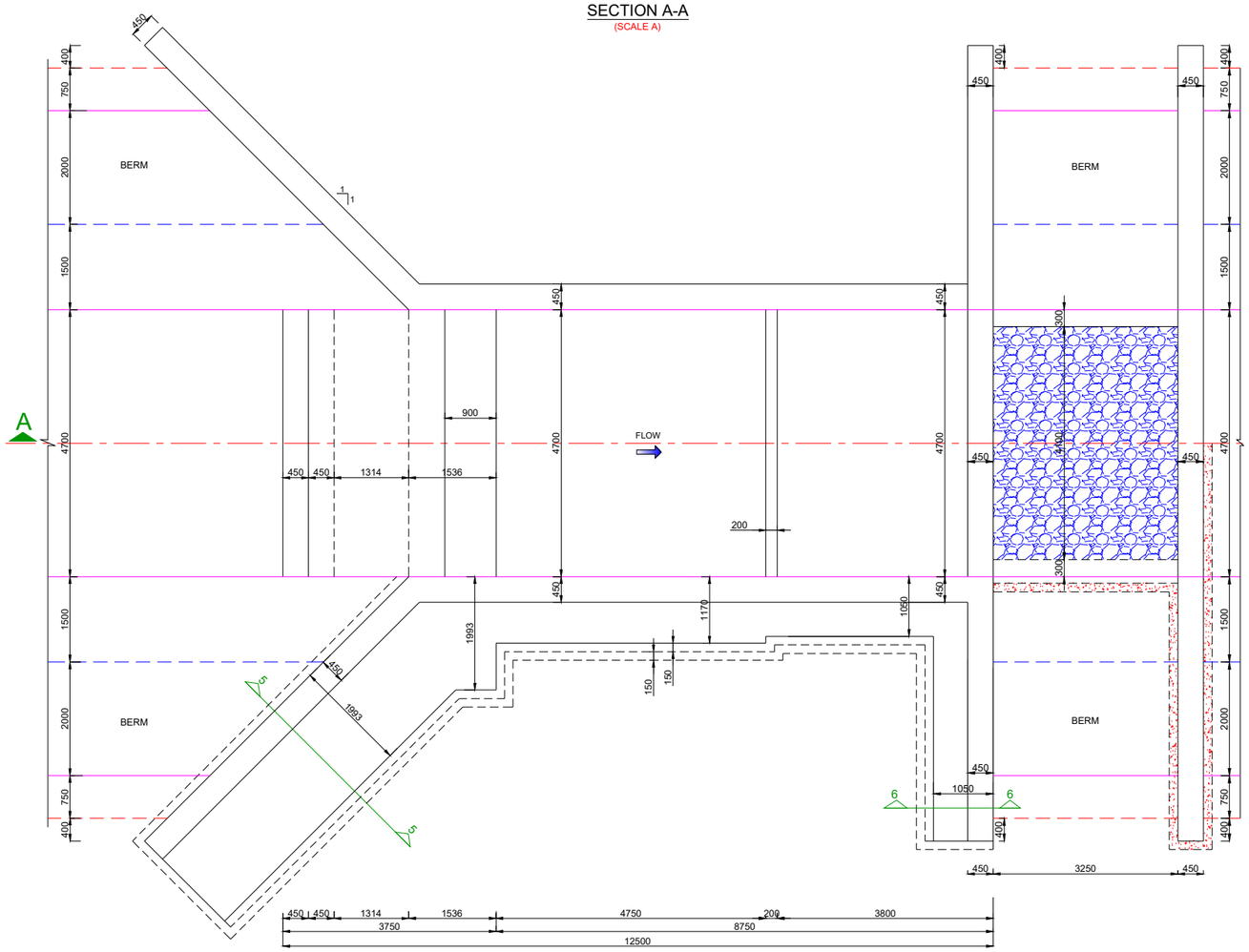
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

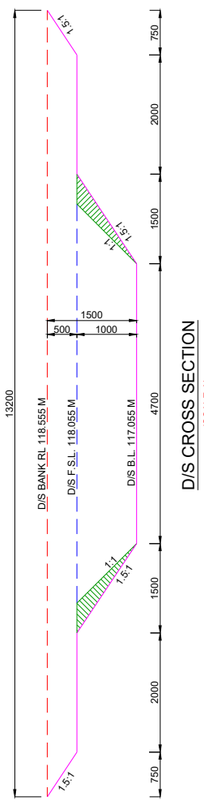
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	2.600	2.600	CUMEC
VERTICAL DROP	1.372	1.372	METRE
FULL SUPPLY DEPTH	1.000	1.000	METRE
BED WIDTH	4.700	4.700	METRE
BED SLOPE	1 : 4700	1 : 4700	



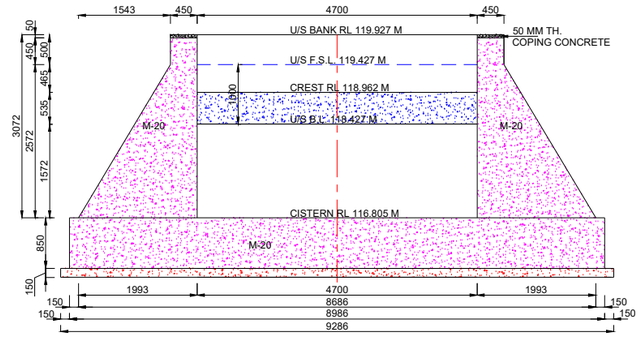
U/S CROSS SECTION
(SCALE A)



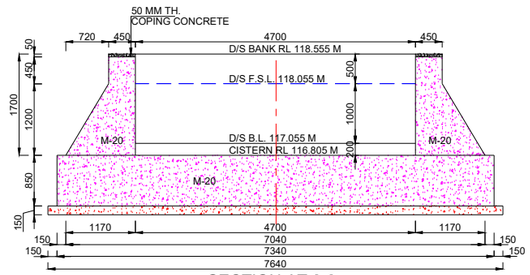
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



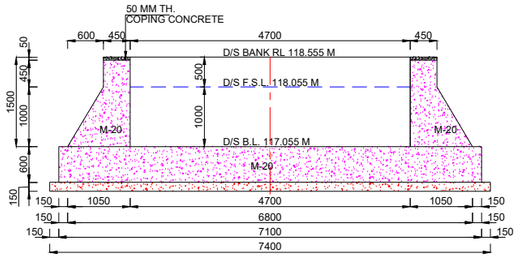
D/S CROSS SECTION
(SCALE A)



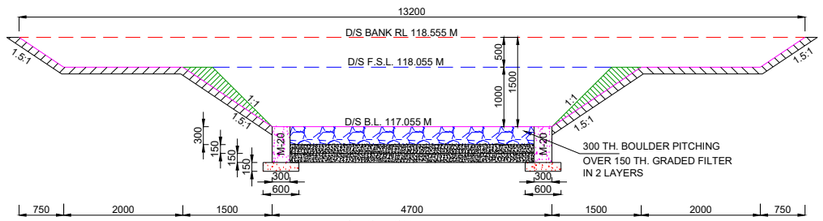
SECTION AT 1-1
(SCALE A)



SECTION AT 2-2
(SCALE A)



SECTION AT 3-3
(SCALE A)

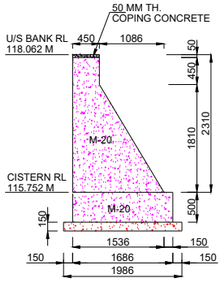


SECTION AT 4-4
(SCALE A)

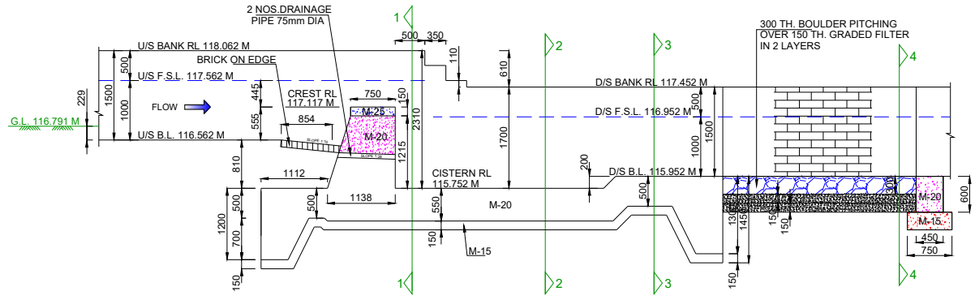
SCALE A:-

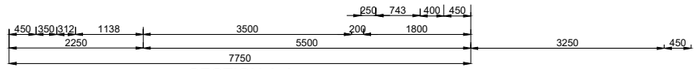
1000 0 1000 2000 3000

Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 1.372 M HT. FALL AT KM. 6.470 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL — 1 of 1

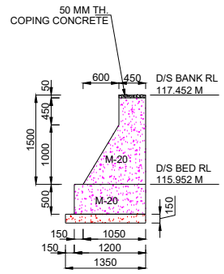


SECTION AT 5-5
(SCALE A)





SECTION A-A
(SCALE A)



SECTION AT 6-6
(SCALE A)

NOTES:-

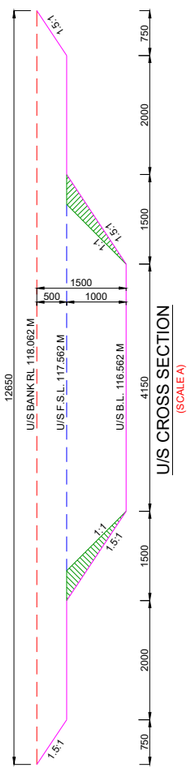
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

FLOOR	M 20
FOUNDATION OF ABUTMENTS & WING WALL	M 20
PCC UNDER FLOOR	M 15
ABUTMENTS / WING WALLS	M 20

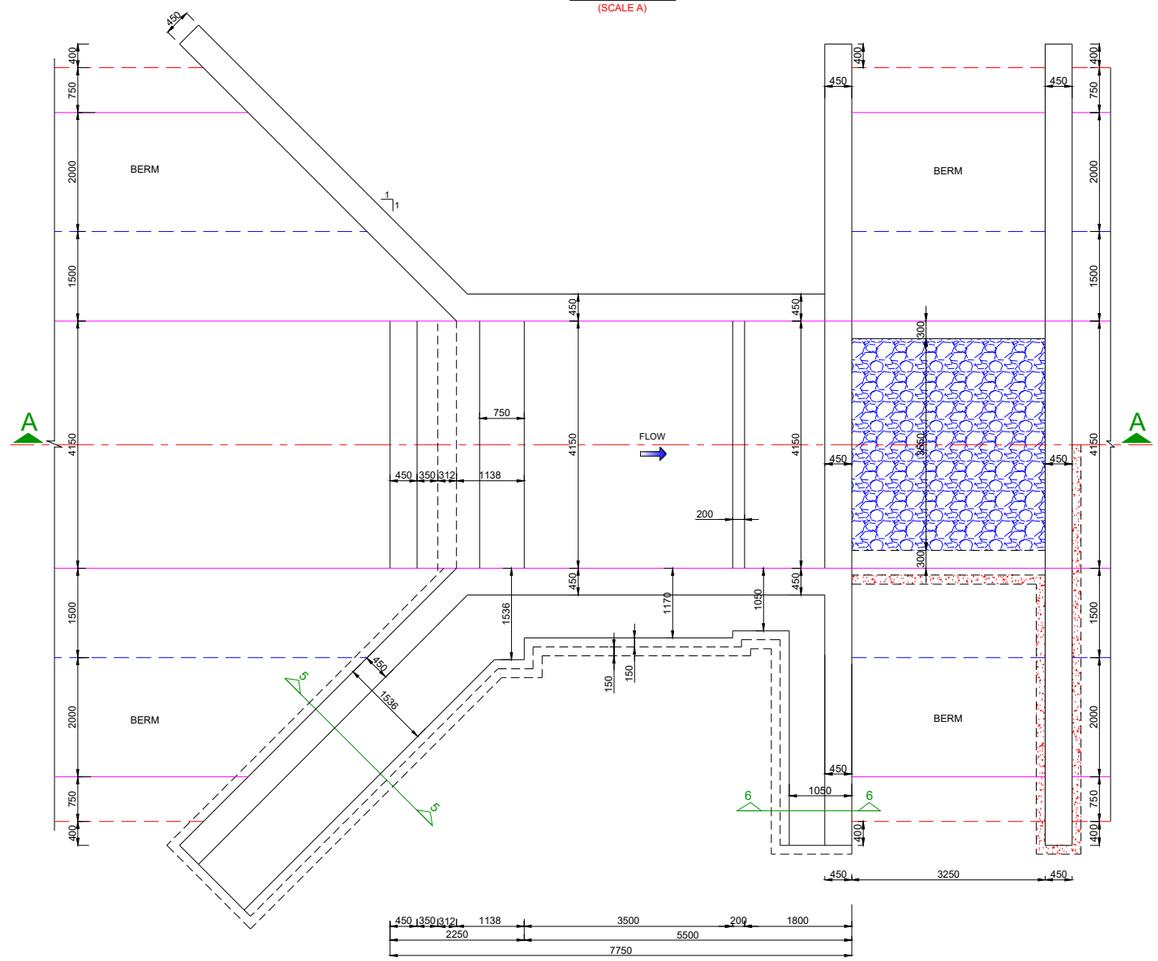
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

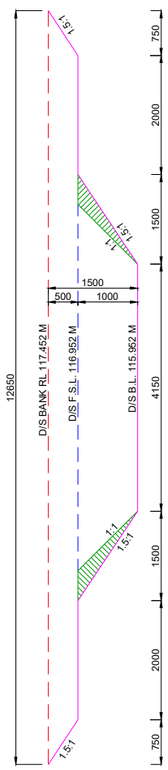
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	2.270	2.270	CUMEC
VERTICAL DROP	0.610	0.610	METRE
FULL SUPPLY DEPTH	1.000	1.000	METRE
BED WIDTH	4.150	4.150	METRE
BED SLOPE	1 : 4700	1 : 4700	



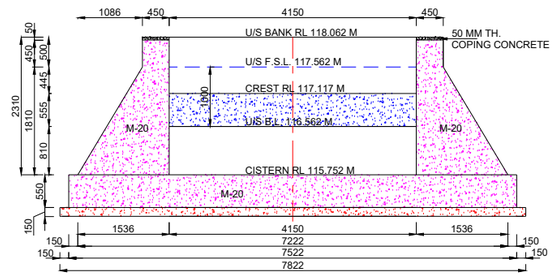
U/S CROSS SECTION
(SCALE A)



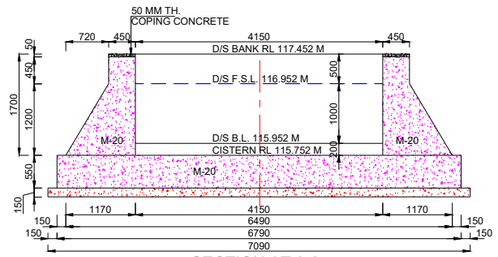
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



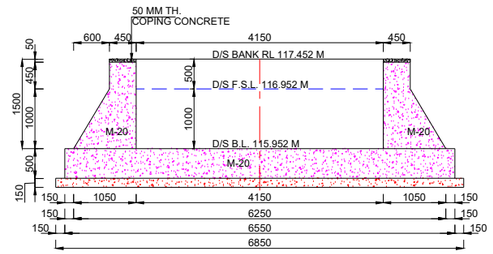
D/S CROSS SECTION
(SCALE A)



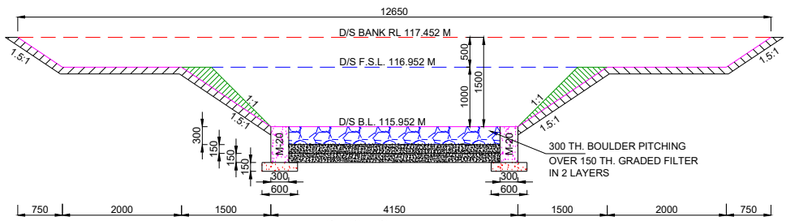
SECTION AT 1-1
(SCALE A)



SECTION AT 2-2
(SCALE A)



SECTION AT 3-3
(SCALE A)

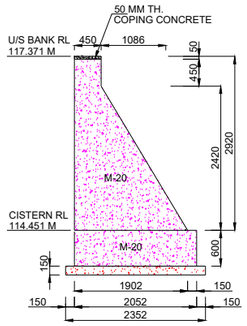


SECTION AT 4-4
(SCALE A)

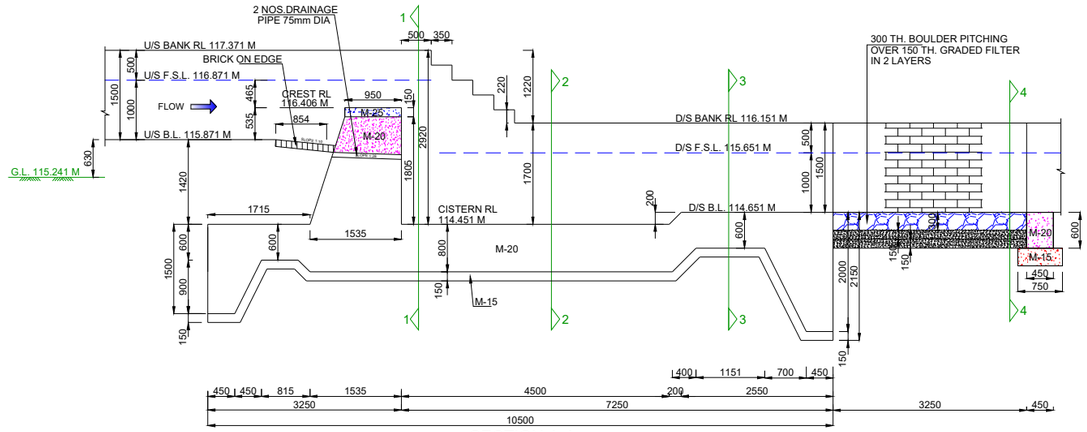
SCALE A:-

1000 0 1000 2000 3000

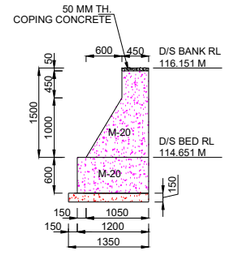
Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 0.610 M HT. FALL AT KM. 8.790 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL — 1 of 1



SECTION AT 5-5
(SCALE A)



SECTION A-A
(SCALE A)



SECTION AT 6-6
(SCALE A)

NOTES:-

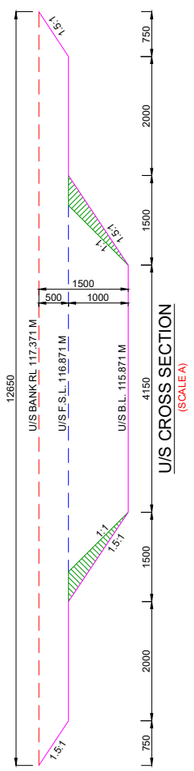
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

FLOOR	M 20
FOUNDATION OF ABUTMENTS & WING WALL	M 20
PCC UNDER FLOOR	M 15
ABUTMENTS / WING WALLS	M 20

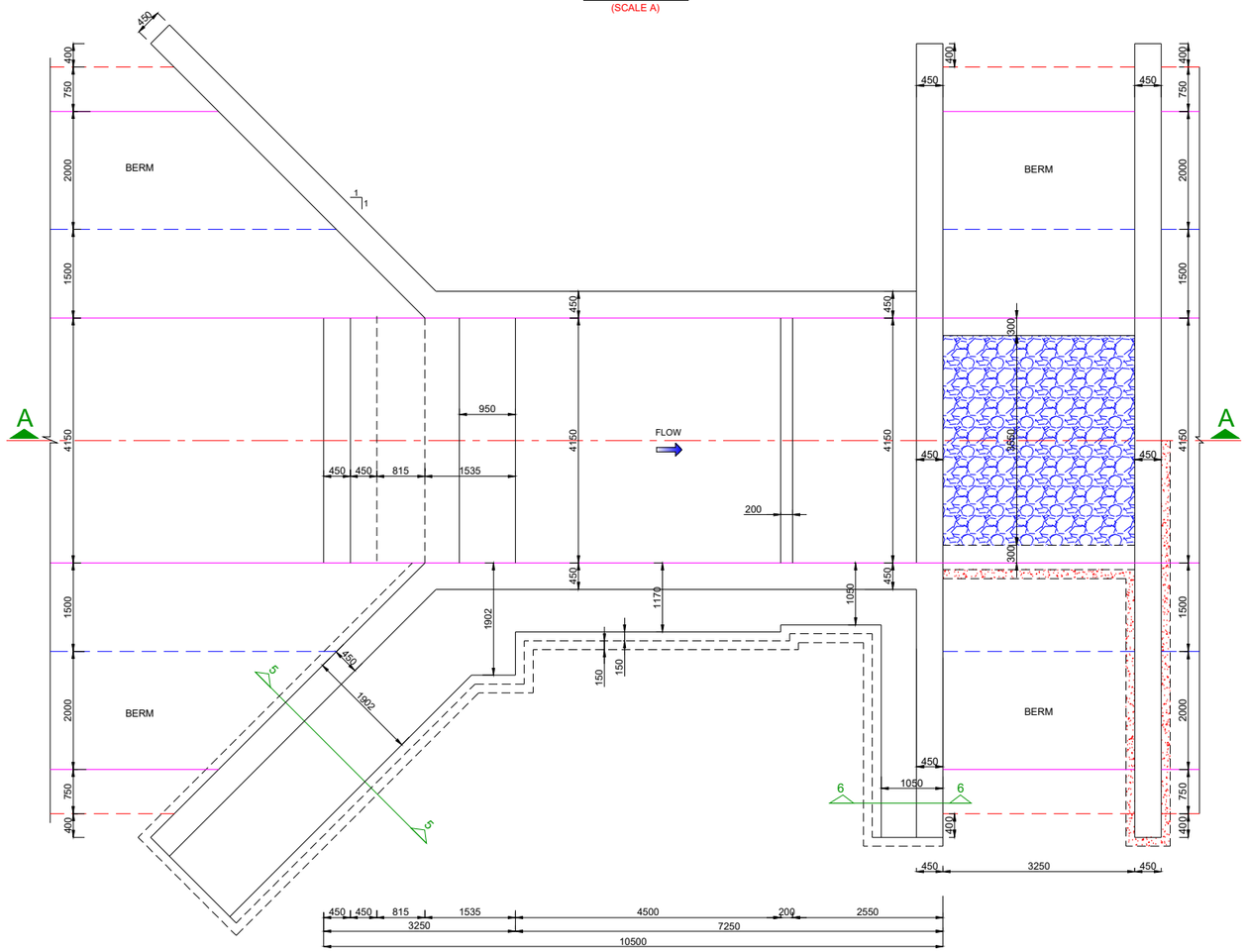
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

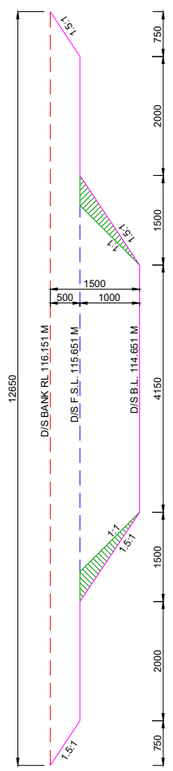
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	2.270	2.270	CUMEC
VERTICAL DROP	1.220	1.220	METRE
FULL SUPPLY DEPTH	1.000	1.000	METRE
BED WIDTH	4.150	4.150	METRE
BED SLOPE	1 : 4700	1 : 4700	



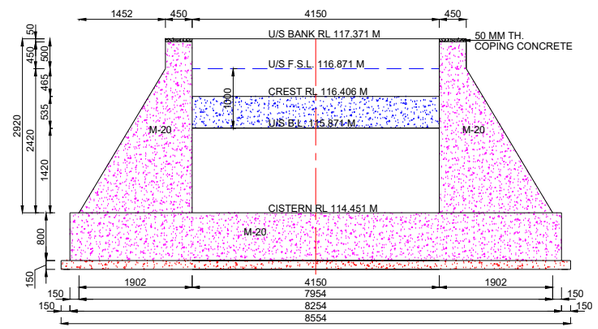
U/S CROSS SECTION
(SCALE A)



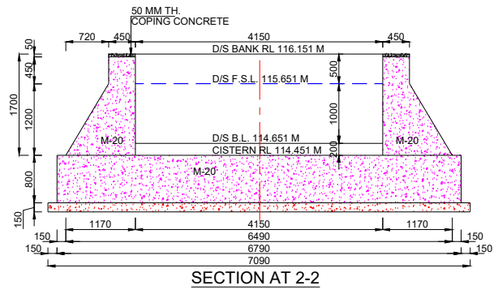
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



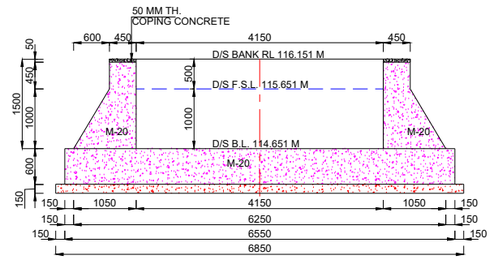
D/S CROSS SECTION
(SCALE A)



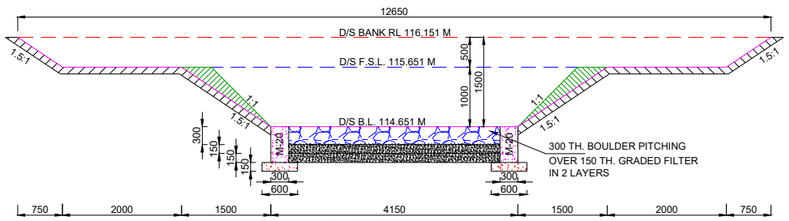
SECTION AT 1-1
(SCALE A)



SECTION AT 2-2
(SCALE A)



SECTION AT 3-3
(SCALE A)

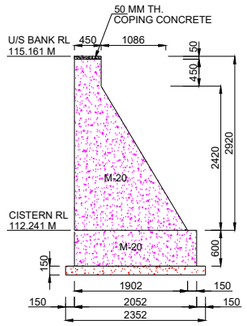


SECTION AT 4-4
(SCALE A)

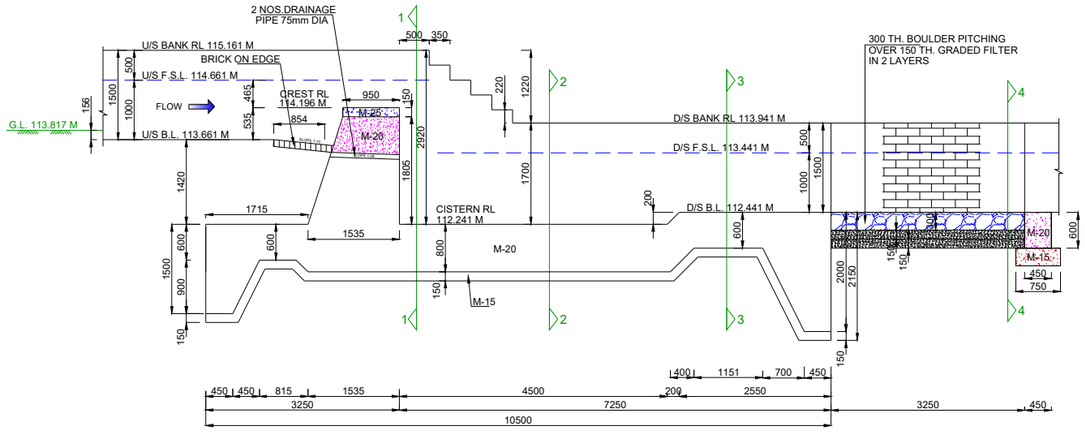
SCALE A:-

1000 0 1000 2000 3000

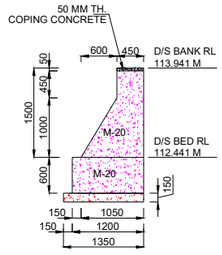
Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 1.220 M HT. FALL AT KM. 9.170 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL — 1 of 1



SECTION AT 5-5
(SCALE A)



SECTION A-A
(SCALE A)



SECTION AT 6-6
(SCALE A)

NOTES:-

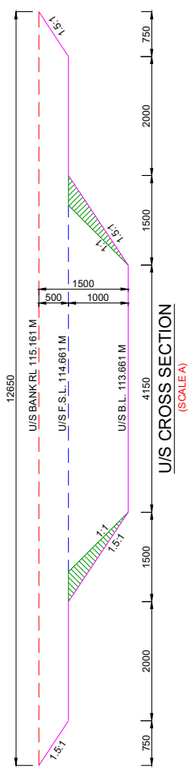
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

FLOOR	M 20
FOUNDATION OF ABUTMENTS & WING WALL	M 20
PCC UNDER FLOOR	M 15
ABUTMENTS / WING WALLS	M 20

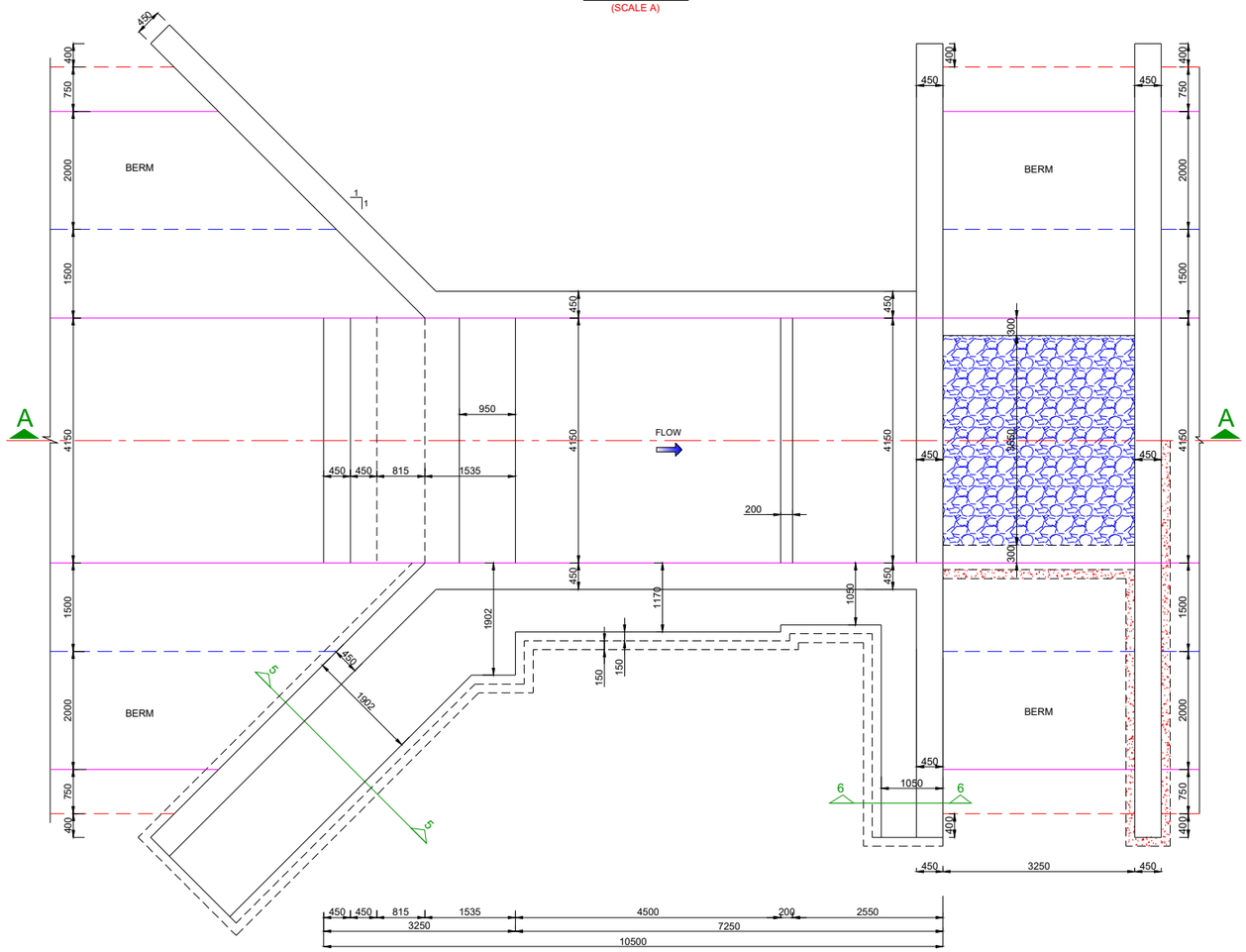
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

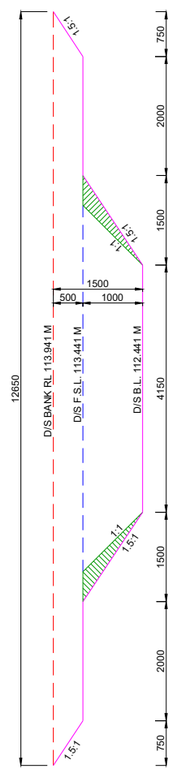
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	2.270	2.270	CUMEC
VERTICAL DROP	1.220	1.220	METRE
FULL SUPPLY DEPTH	1.000	1.000	METRE
BED WIDTH	4.150	4.150	METRE
BED SLOPE	1 : 4700	1 : 4700	



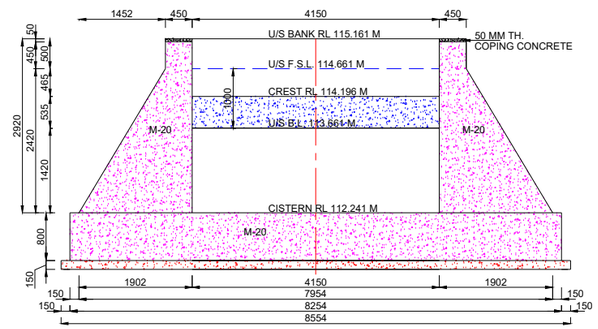
U/S CROSS SECTION
(SCALE A)



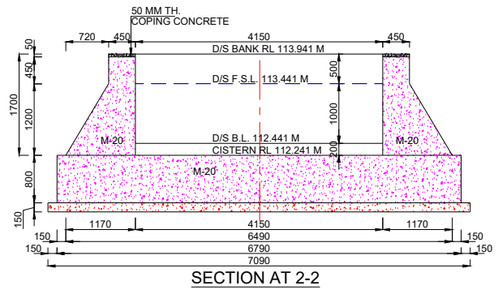
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



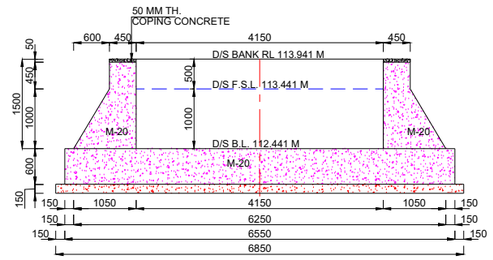
D/S CROSS SECTION
(SCALE A)



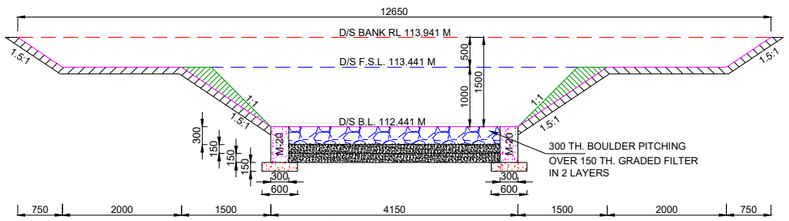
SECTION AT 1-1
(SCALE A)



SECTION AT 2-2
(SCALE A)



SECTION AT 3-3
(SCALE A)

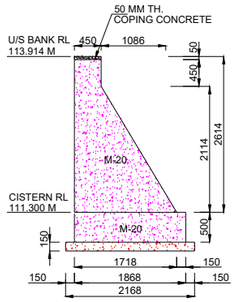


SECTION AT 4-4
(SCALE A)

SCALE A:-

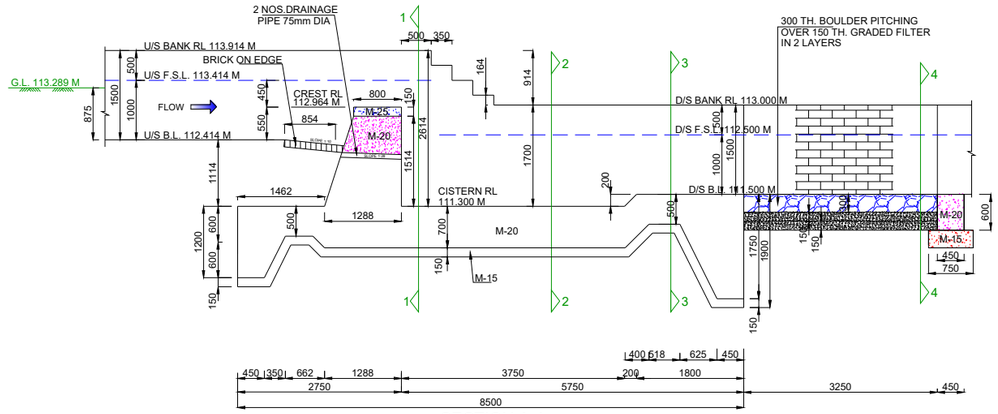
1000 0 1000 2000 3000

Prepared by :- WAPCOS LTD.	
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	SHARDA TYPE 1.220 M HT. FALL AT KM. 9.520 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL — 1 of 1



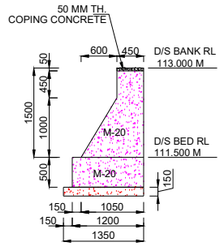
SECTION AT 5-5

(SCALE A)



SECTION A-A

(SCALE A)



SECTION AT 6-6

(SCALE A)

NOTES:-

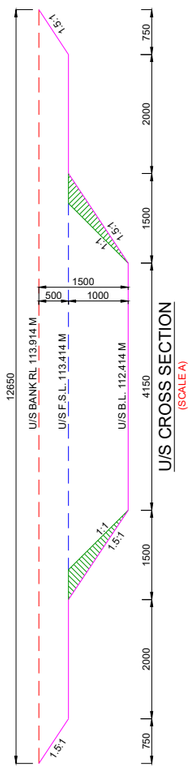
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

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.

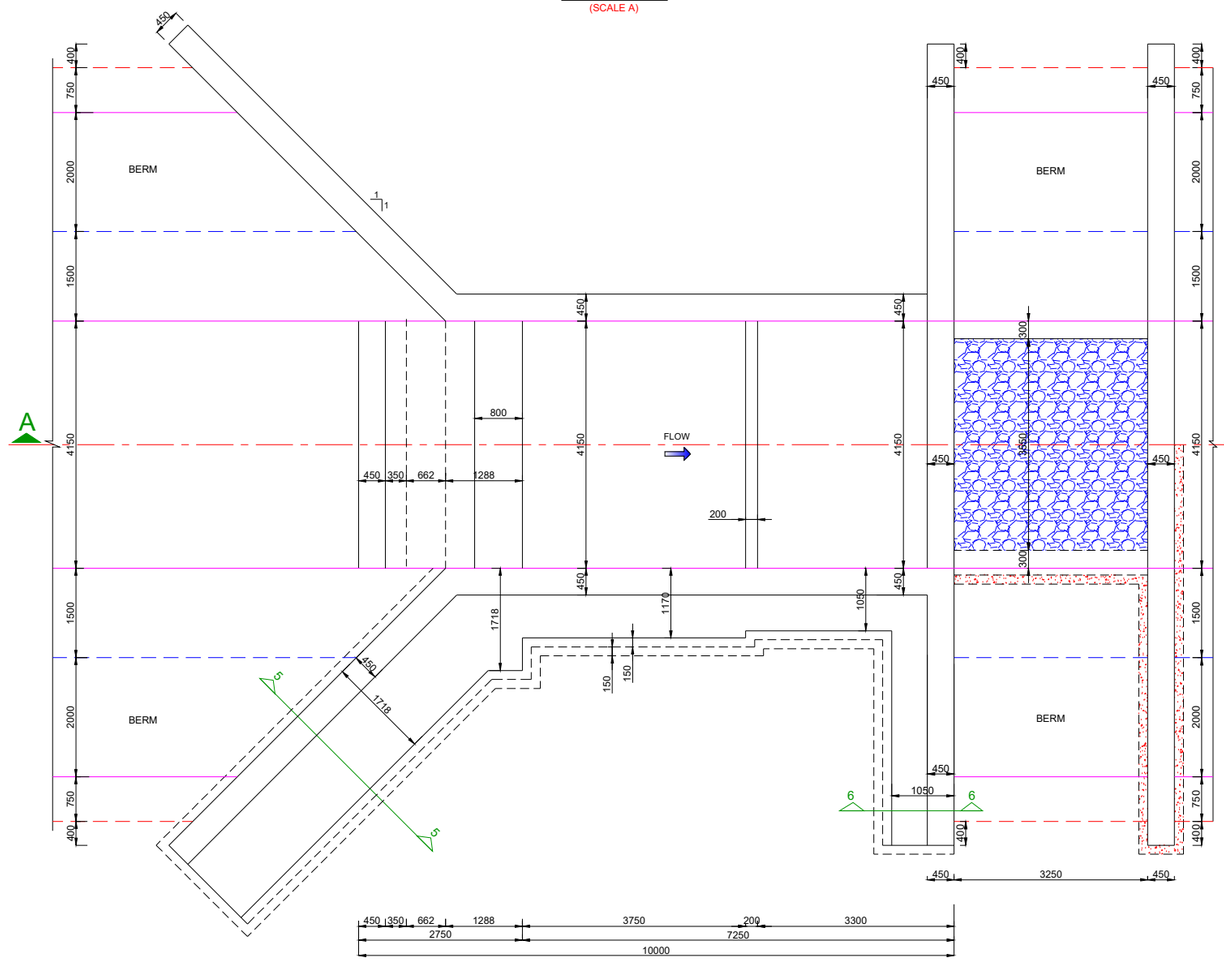
HYDRAULIC:- DATA

	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	2.270	2.270	CUMEC
VERTICAL DROP	0.914	0.914	METRE
FULL SUPPLY DEPTH	1.000	1.000	METRE
BED WIDTH	4.150	4.150	METRE
BED SLOPE	1 : 4700	1 : 4700	



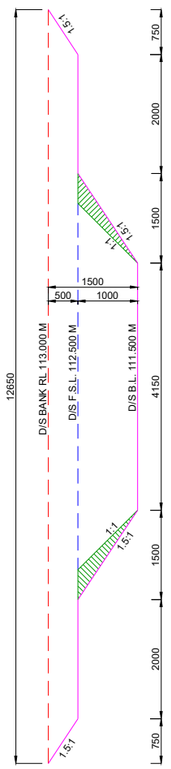
U/S CROSS SECTION

(SCALE A)



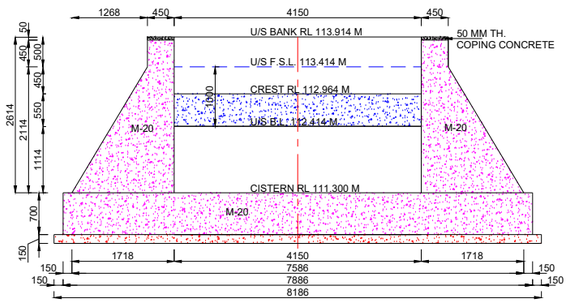
HALF TOP / HALF FOUNDATION PLAN

(SCALE A)



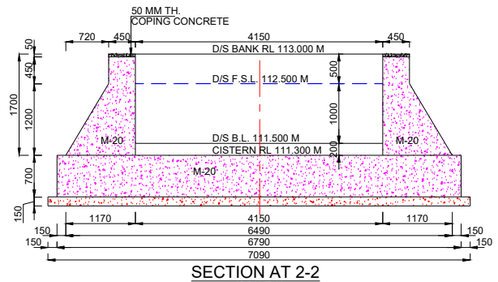
D/S CROSS SECTION

(SCALE A)



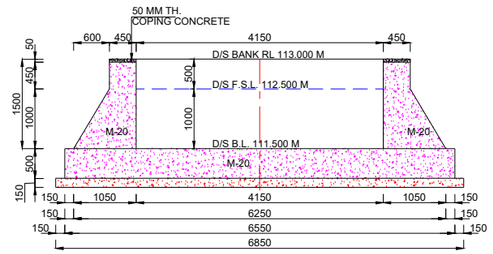
SECTION AT 1-1

(SCALE A)



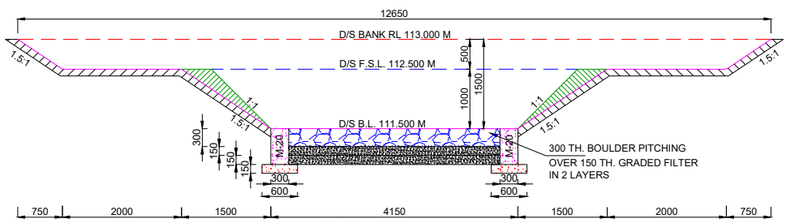
SECTION AT 2-2

(SCALE A)



SECTION AT 3-3

(SCALE A)



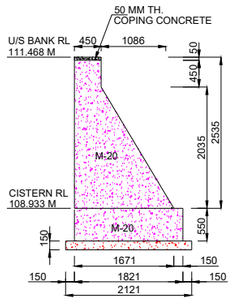
SECTION AT 4-4

(SCALE A)

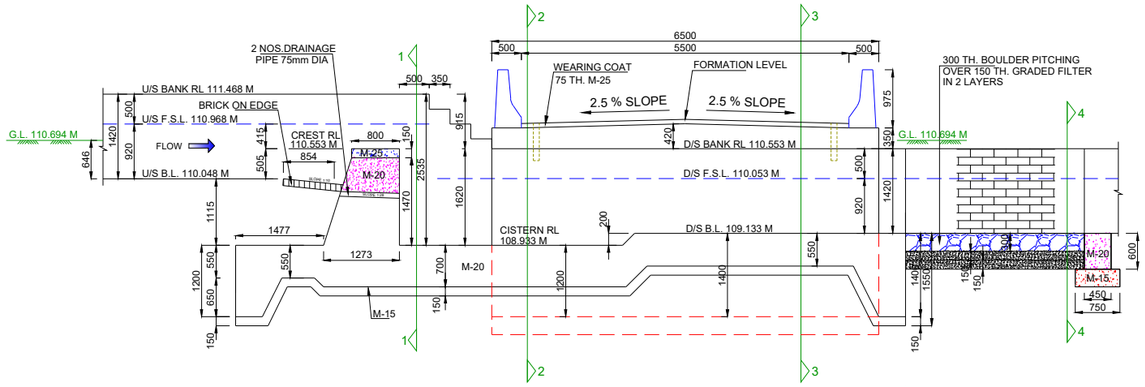
SCALE A:-

1000 0 1000 2000 3000

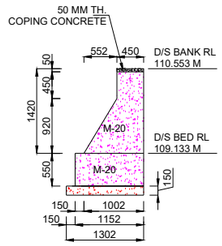
Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 0.914 M HT. FALL AT KM. 9.650 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL 1 of 1



SECTION AT 5-5
(SCALE A)



SECTION A-A
(SCALE A)



SECTION AT 6-6
(SCALE A)

NOTES:-

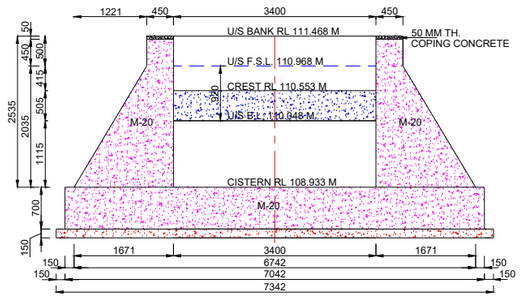
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

PCC UNDER FLOOR	M 15
FOUNDATION OF ABUTMENTS & WING WALL	M 20
FLOOR	M 20
ABUTMENTS / WING WALLS	M 20
SLAB & DIRT WALL	M 25

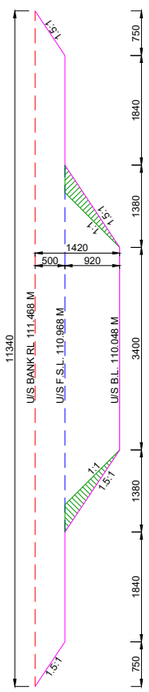
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

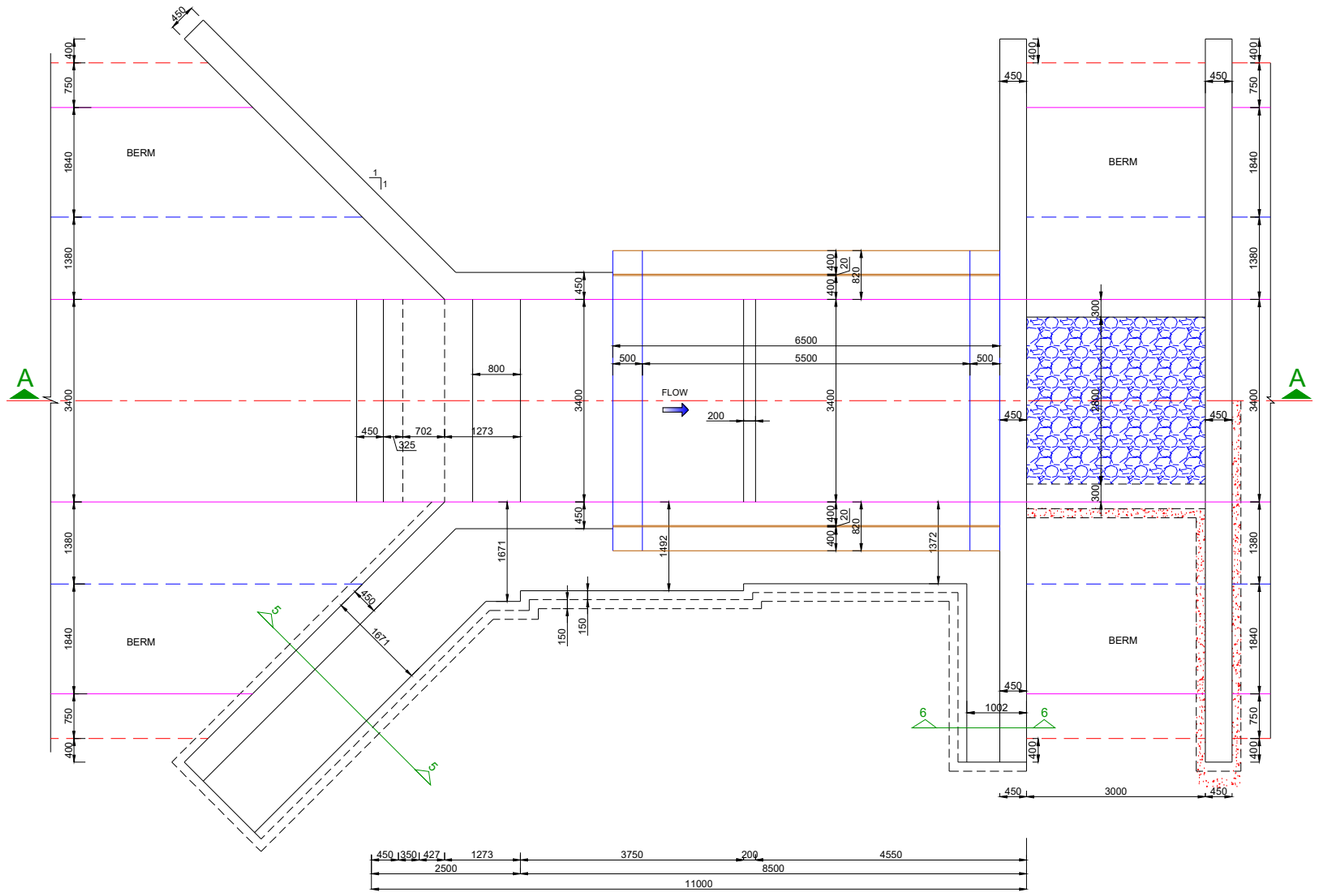
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	1.610	1.610	CUMEC
VERTICAL DROP	0.915	0.915	METRE
FULL SUPPLY DEPTH	0.920	0.920	METRE
BED WIDTH	3.400	3.400	METRE
BED SLOPE	1 : 4700	1 : 4700	



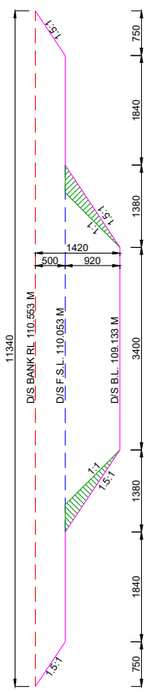
SECTION AT 1-1
(SCALE A)



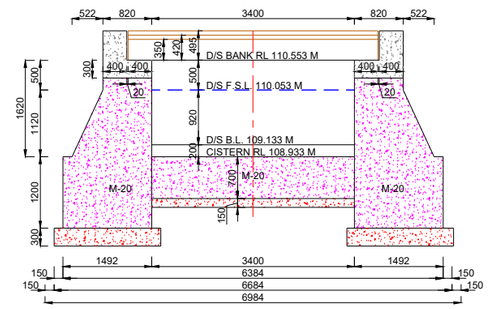
U/S CROSS SECTION
(SCALE A)



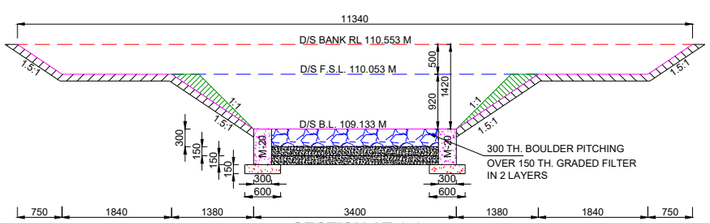
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



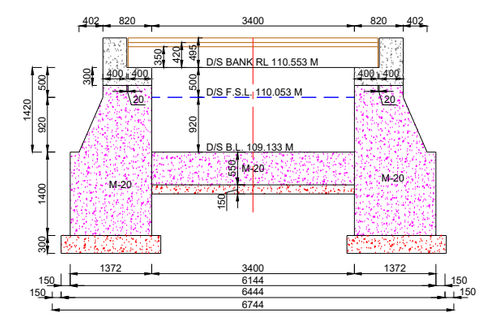
D/S CROSS SECTION
(SCALE A)



SECTION AT 2-2
(SCALE A)



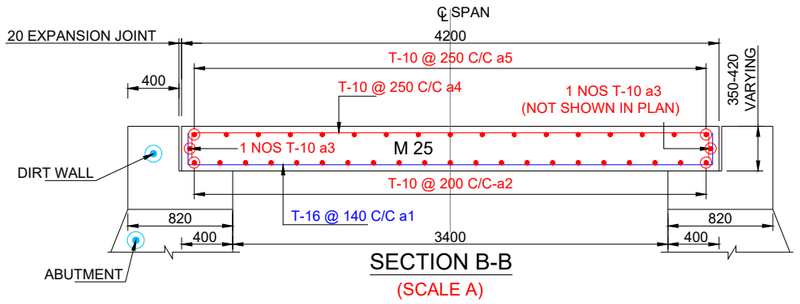
SECTION AT 4-4
(SCALE A)



SECTION AT 3-3
(SCALE A)

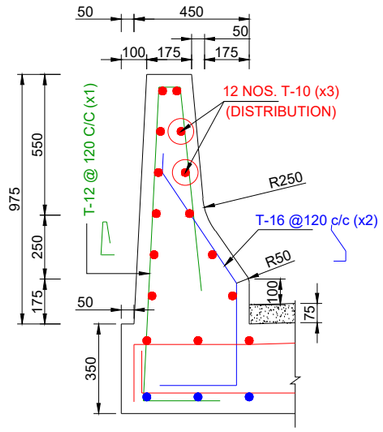
SCALE A:-
1000 0 1000 2000 3000

Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 0.915 M HT. FALL AT KM. 11.460 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL — 1 of 1



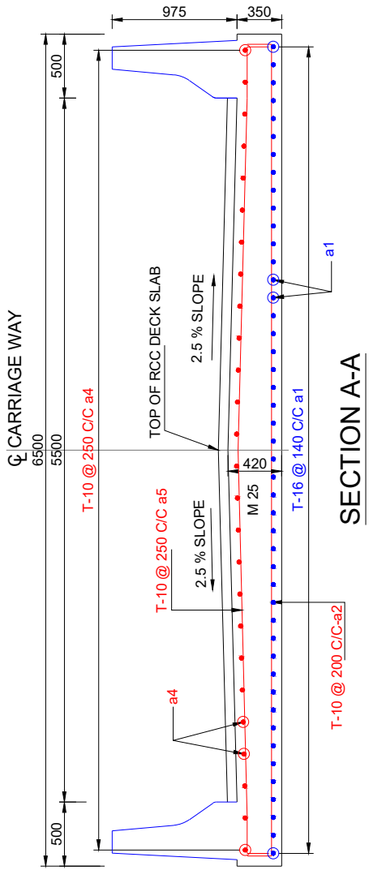
SECTION B-B

(SCALE A)

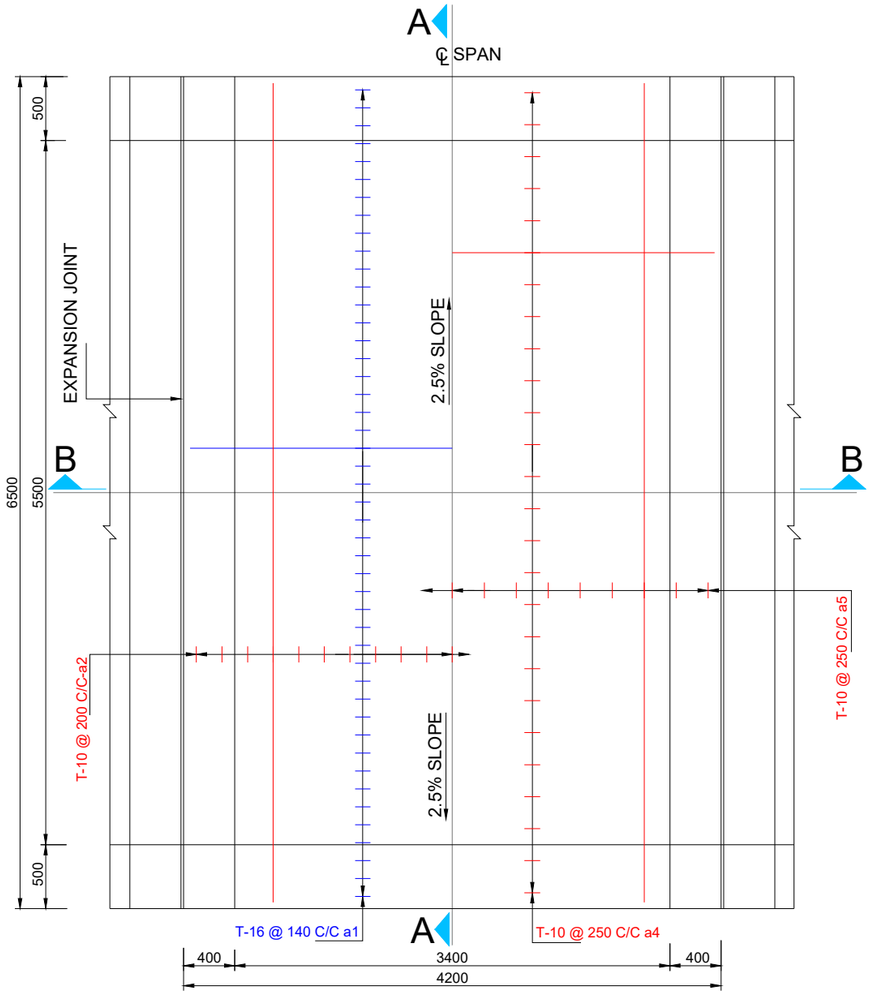


REINF. DETAILS OF CRASH BARRIER IN MAIN SLAB

(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	250, R=80, 4100, 250	16	140	47
2	a2	250, R=50, 6400, 250	10	200	21
3	a3	6400	10	-	2
4	a4	250, R=40, 4100, 250	10	250	27
5	a5	250, 450, 2750, 2750, 450, 250	10	250	17
CRASH BARRIER					
1	x1	75, 1226, 950, 300	12	120	35X2
2	x2	75, 540, 400, 300	16	120	35X2
3	x3	4100	10	-	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

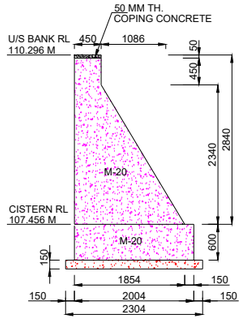
1. THE DEVELOPMENT LENGTHS GIVEN ABOVE ARE FOR A STRESS OF 0.87 fy IN THE BAR
2. THE DEVELOPMENT LENGTH INCLUDES ANCHORAGE VALUES OF HOOKS IN TENSION REINFORCEMENT.

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 $p\% \leq 25\%$
$\alpha 1$ = 1.15 for $25\% \leq p\% \leq 33\%$
$\alpha 1$ = 1.4 for $33\% \leq p\% \leq 50\%$
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.

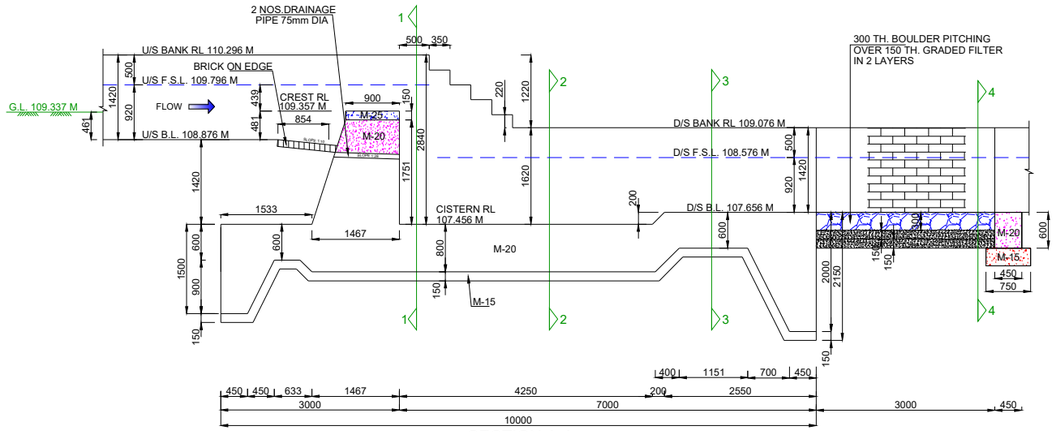
SCALE A:- 400 0 400 800 1200

SCALE B:- 200 0 200 400 600

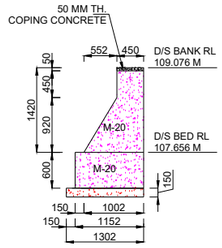
Prepared by :-		
WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	REINFORCEMENT DETAILS OF SLAB FOR FALL CUM BRG. AT KM. 11.460 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL 2 of 2



SECTION AT 5-5
(SCALE A)



SECTION A-A
(SCALE A)



SECTION AT 6-6
(SCALE A)

NOTES:-

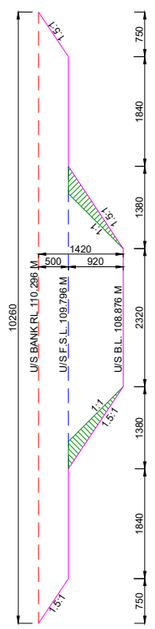
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

FLOOR	M 20
FOUNDATION OF ABUTMENTS & WING WALL	M 20
PCC UNDER FLOOR	M 15
ABUTMENTS / WING WALLS	M 20

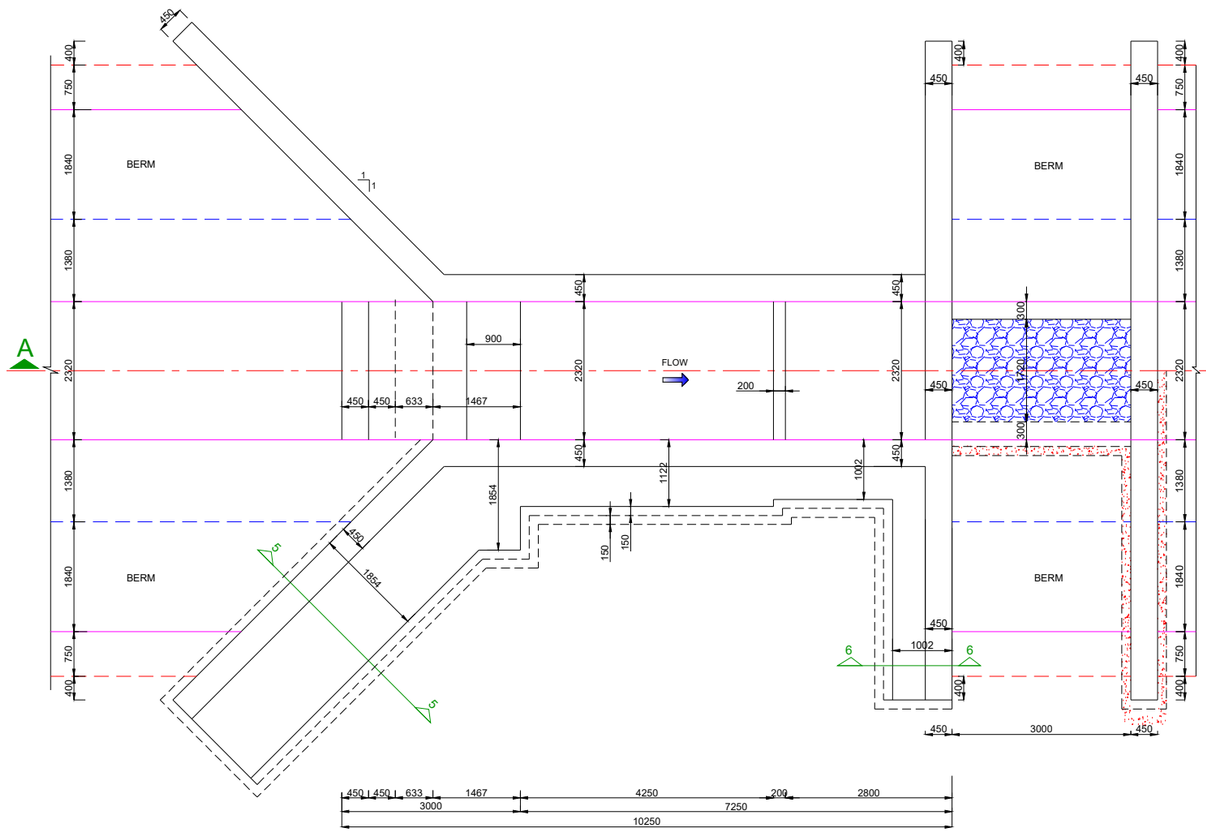
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

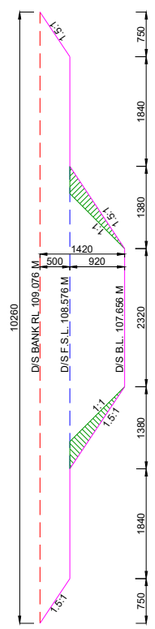
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	1.250	1.250	CUMEC
VERTICAL DROP	1.220	1.220	METRE
FULL SUPPLY DEPTH	0.920	0.920	METRE
BED WIDTH	2.320	2.320	METRE
BED SLOPE	1 : 3500	1 : 3500	



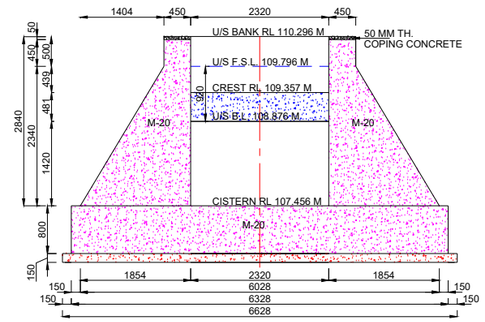
U/S CROSS SECTION
(SCALE A)



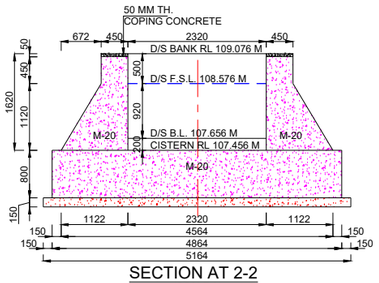
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



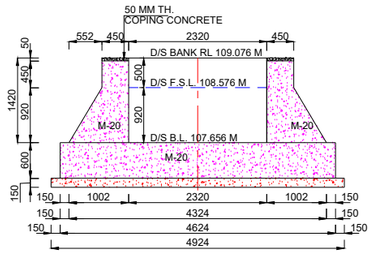
D/S CROSS SECTION
(SCALE A)



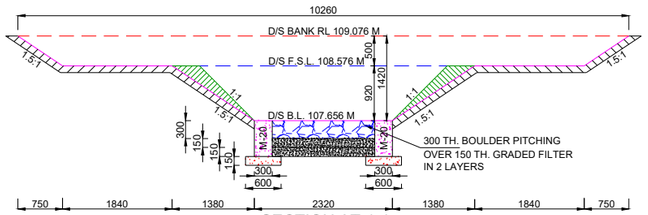
SECTION AT 1-1
(SCALE A)



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

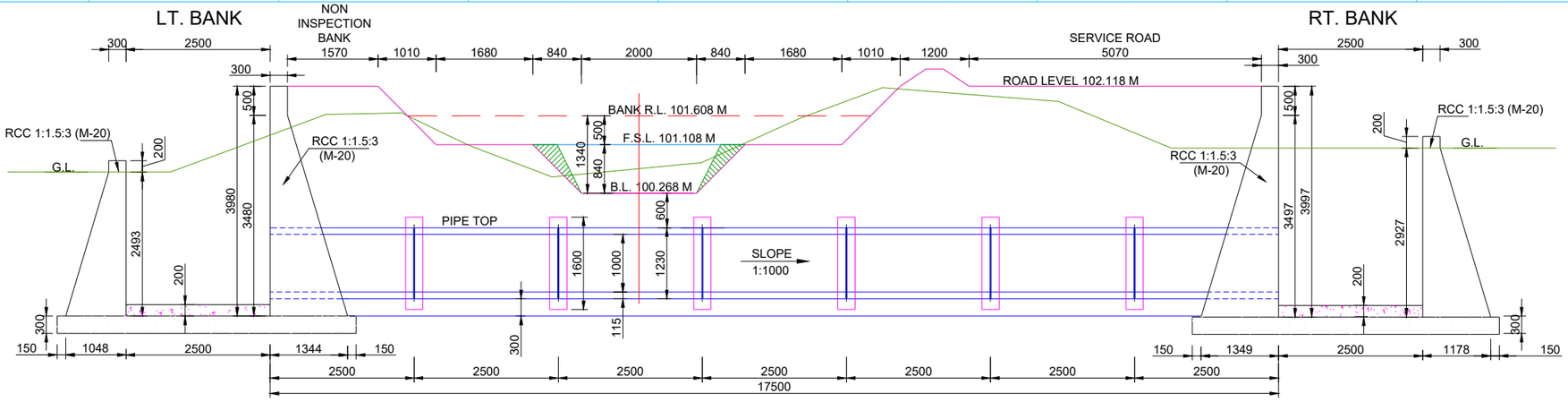
Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 1.220 M HT. FALL AT KM. 12.510 OF HETAMPUR DY. (OFFTAKE FROM RD - 73+100 KM. (L), NORTH KOEL RMC)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ FALL 1 of 1

PROPOSED DESIGN DATA

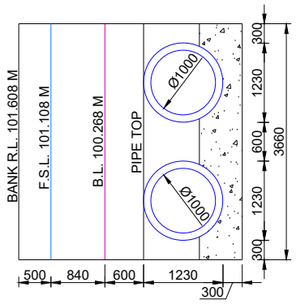
Discharge	0.930	cumec
Bed Width	2.000	m
Water Depth	0.840	m
Internal Dia	1.000	m
No. of Dia	2	Nos.
Free Board	0.500	m

NOTES:-

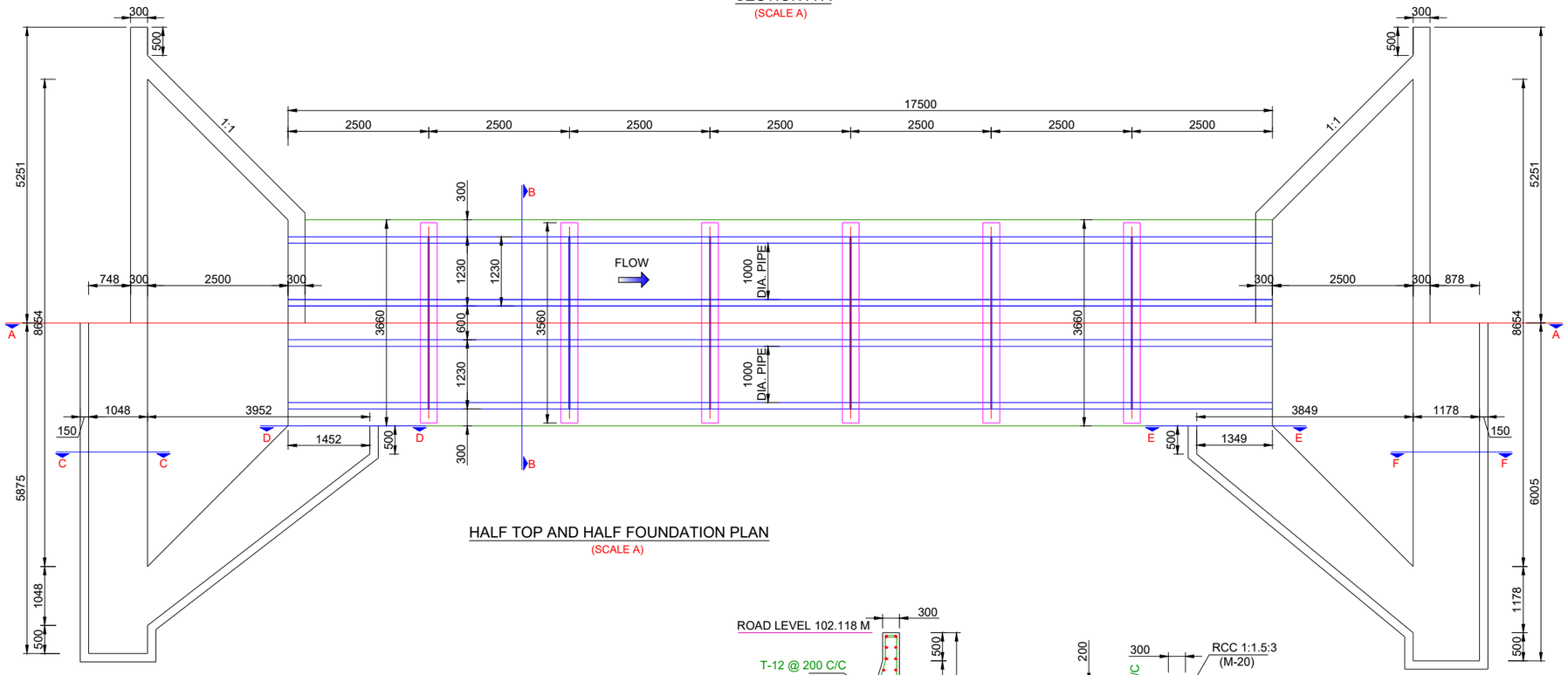
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METERS EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT TO BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE M-10
4. THE PIPES SHALL BE RCC NP3 NON PRESSURE PIPES. THE SPECIFICATION OF PIPES SHALL BE AS PER IS:458.
5. BENDING OF BARS SHALL CONFORM TO IS:2502.
6. ALL CONCRETE WORK SHALL CONFORM TO IS:456-2000. GRADE OF CONCRETE IN DIFF. COMPONENTS SHALL BE ASSHOWN ON DRAWINGS.
7. ALL REINFORCEMENT BARS SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS CONFORMING IS:786.



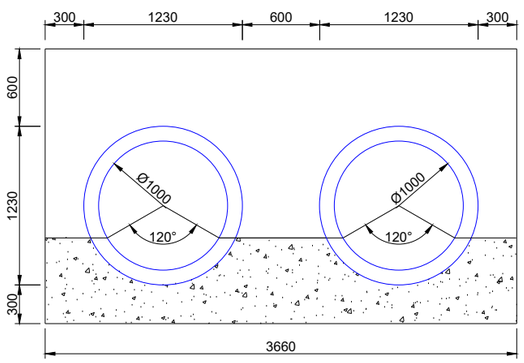
SECTION A-A
(SCALE A)



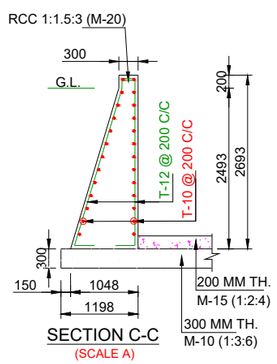
SECTION B-B
(SCALE A)



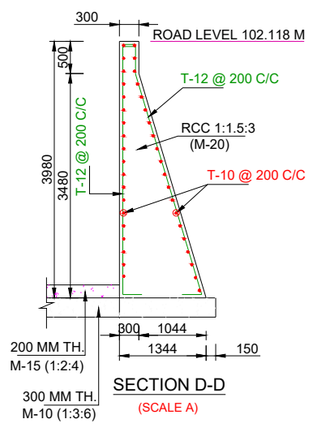
HALF TOP AND HALF FOUNDATION PLAN
(SCALE A)



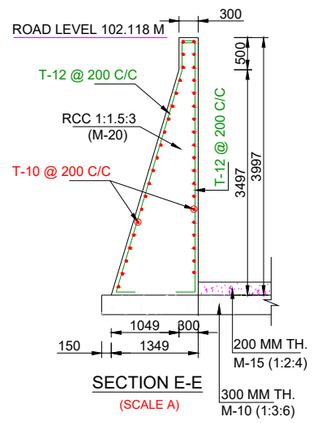
DETAILS OF JOINT OF PIPE
(SCALE B)



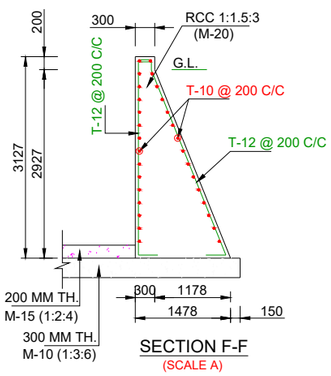
SECTION C-C
(SCALE A)



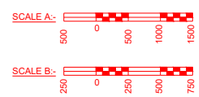
SECTION D-D
(SCALE A)



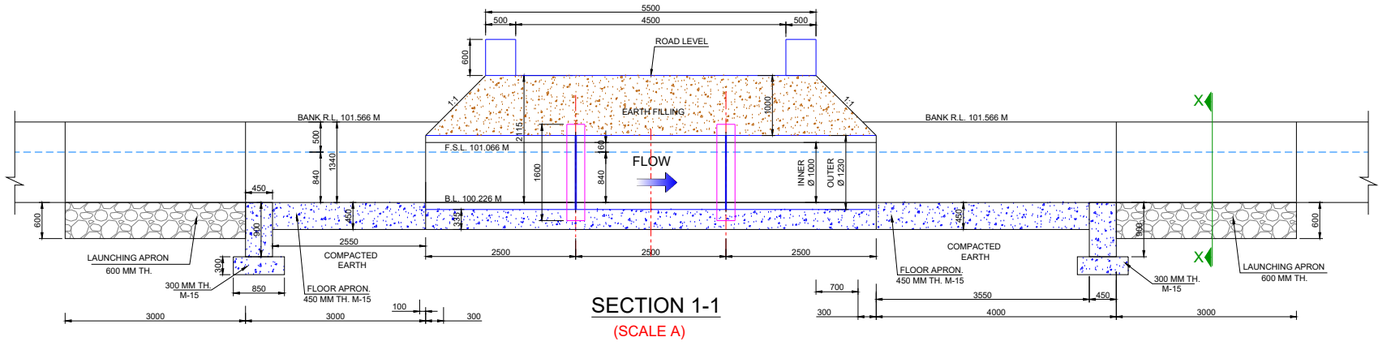
SECTION E-E
(SCALE A)



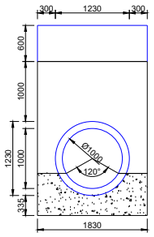
SECTION F-F
(SCALE A)



Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	GENERAL ARRANGEMENT DRAWING OF DRAINAGE SYPHON AT KM 13.875 OF HETAMPUR DY.
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/ CD-01 1 of 1



SECTION 1-1
(SCALE A)



DETAILS OF JOINT OF PIPE
(SCALE A)

DESIGN DATA:-

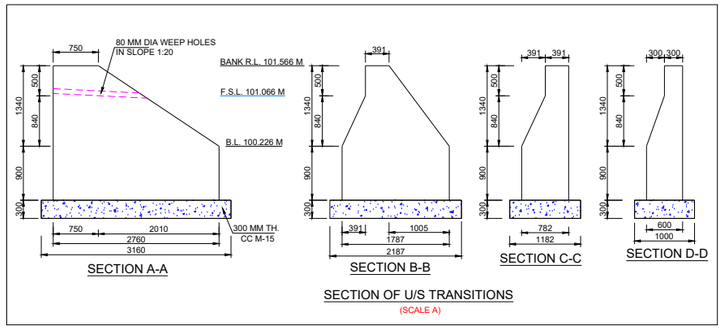
DISCHARGE	0.04 CUMEC
BED LEVEL	100.226 M
BED WIDTH	2.000 M
WATER DEPTH	0.840 M
FREE BOARD	0.500 M
CARRIAGE WAY	5.500 M
NO. OF PIPE	1 NOS.
SIDE SLOPE	1 IN 1
INTERNAL DIA OF PIPE	1.000 M

NOTES :-

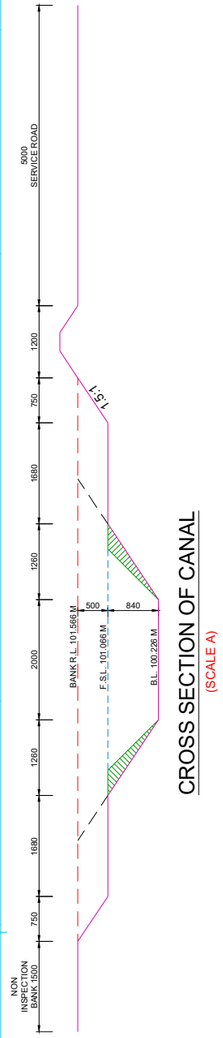
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT TO BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456, GRADE OF CONCRETE IN DIFFERENT COMPONENT SHALL BE
   TRANSITION WALL M-20
   BASE CONCRETE & CURTAIN WALL M-15

TRANSITIONS WALL

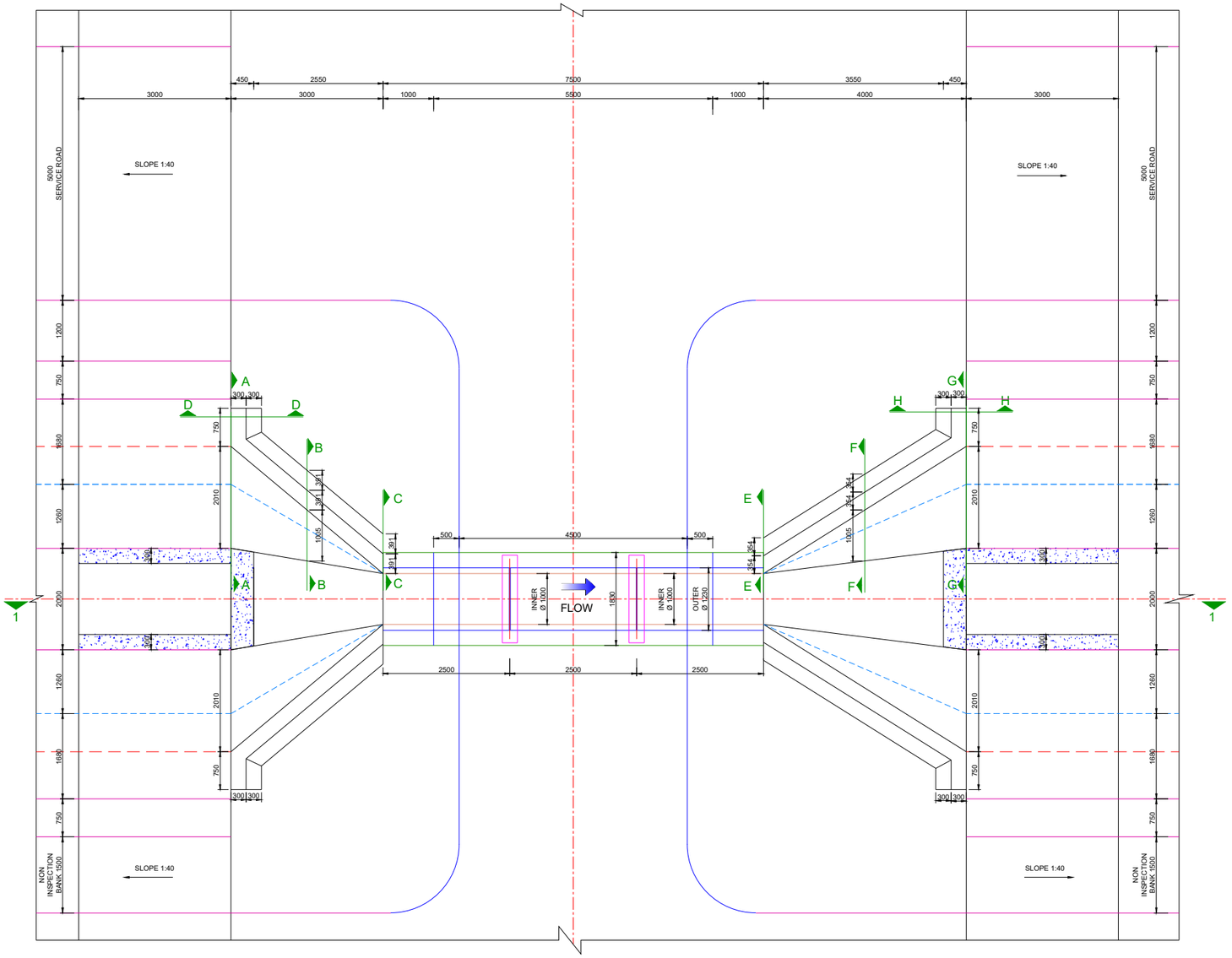
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT TO BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. WEEP HOLES WITH A DIAMETER OF 80MM, SPACED AT 1500MM IN A STAGGERED ARRANGEMENT, SHALL BE PROVIDED IN THE TRANSITION WALL WITH A 1:20 SLOPE 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.



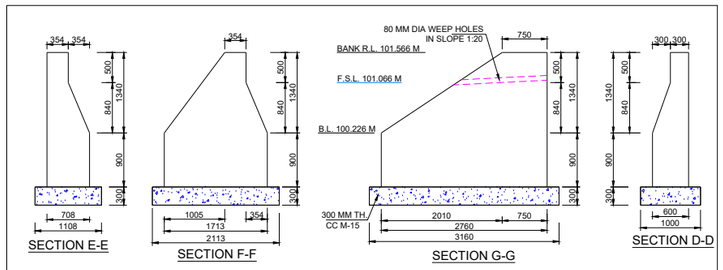
SECTION OF U/S TRANSITIONS
(SCALE A)



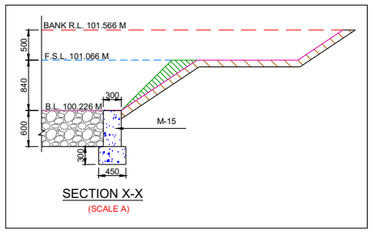
CROSS SECTION OF CANAL
(SCALE A)



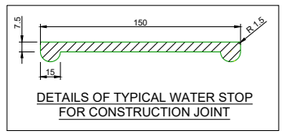
LAYOUT PLAN
(SCALE A)



SECTION OF D/S TRANSITIONS
(SCALE A)



SECTION X-X
(SCALE A)

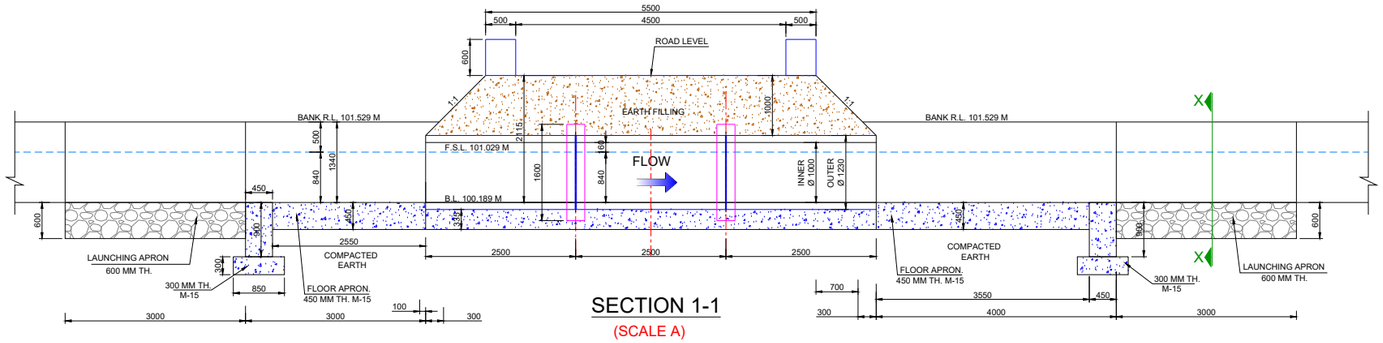


DETAILS OF TYPICAL WATER STOP FOR CONSTRUCTION JOINT

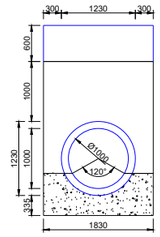
SCALE A:-

SCALE B:-

Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND	
	Drawing Title :-	GENERAL ARRANGEMENT DRAWING OF PIPE BRIDGE AT KM 14.020 OF HETAMPUR DY.	
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/PIPE BRG.	1 of 1



SECTION 1-1
(SCALE A)



DETAILS OF JOINT OF PIPE
(SCALE A)

DESIGN DATA:-

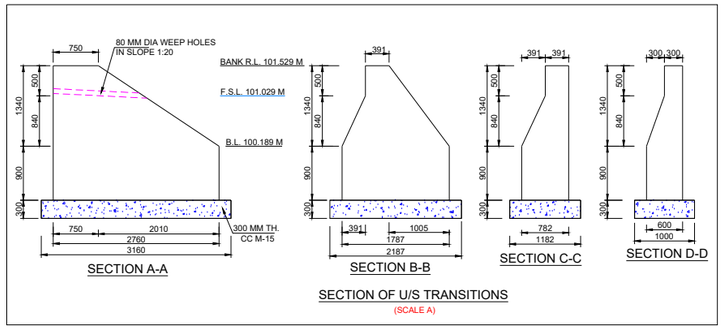
DISCHARGE	0.04 CUMEC
BED LEVEL	100.189 M
BED WIDTH	2.000 M
WATER DEPTH	0.840 M
FREE BOARD	0.500 M
CARRIAGE WAY	5.500 M
NO. OF PIPE	1 NOS.
SIDE SLOPE	1 IN 1
INTERNAL DIA OF PIPE	1.000 M

NOTES :-

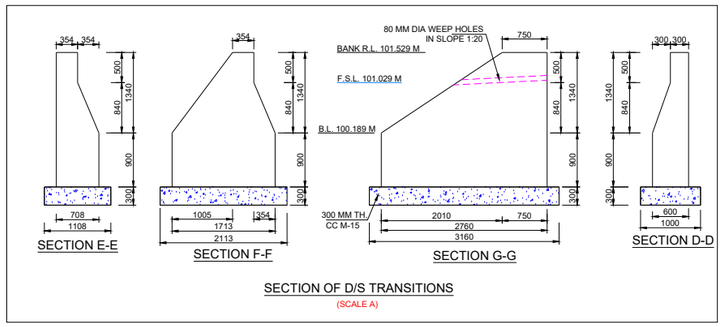
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT TO BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456, GRADE OF CONCRETE IN DIFFERENT COMPONENT SHALL BE
   TRANSITION WALL M-20
   BASE CONCRETE & CURTAIN WALL M-15

TRANSITIONS WALL

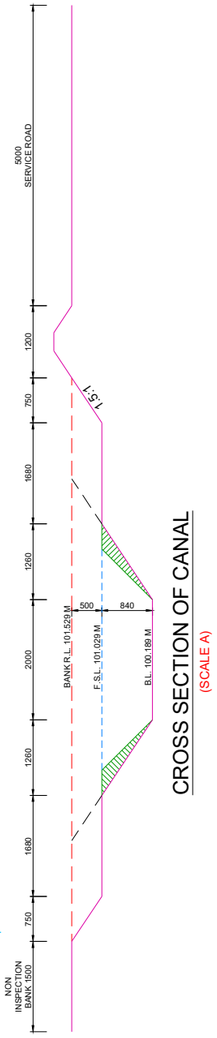
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT TO BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. WEEP HOLES WITH A DIAMETER OF 80MM, SPACED AT 1500MM IN A STAGGERED ARRANGEMENT, SHALL BE PROVIDED IN THE TRANSITION WALL WITH A 1:20 SLOPE 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.



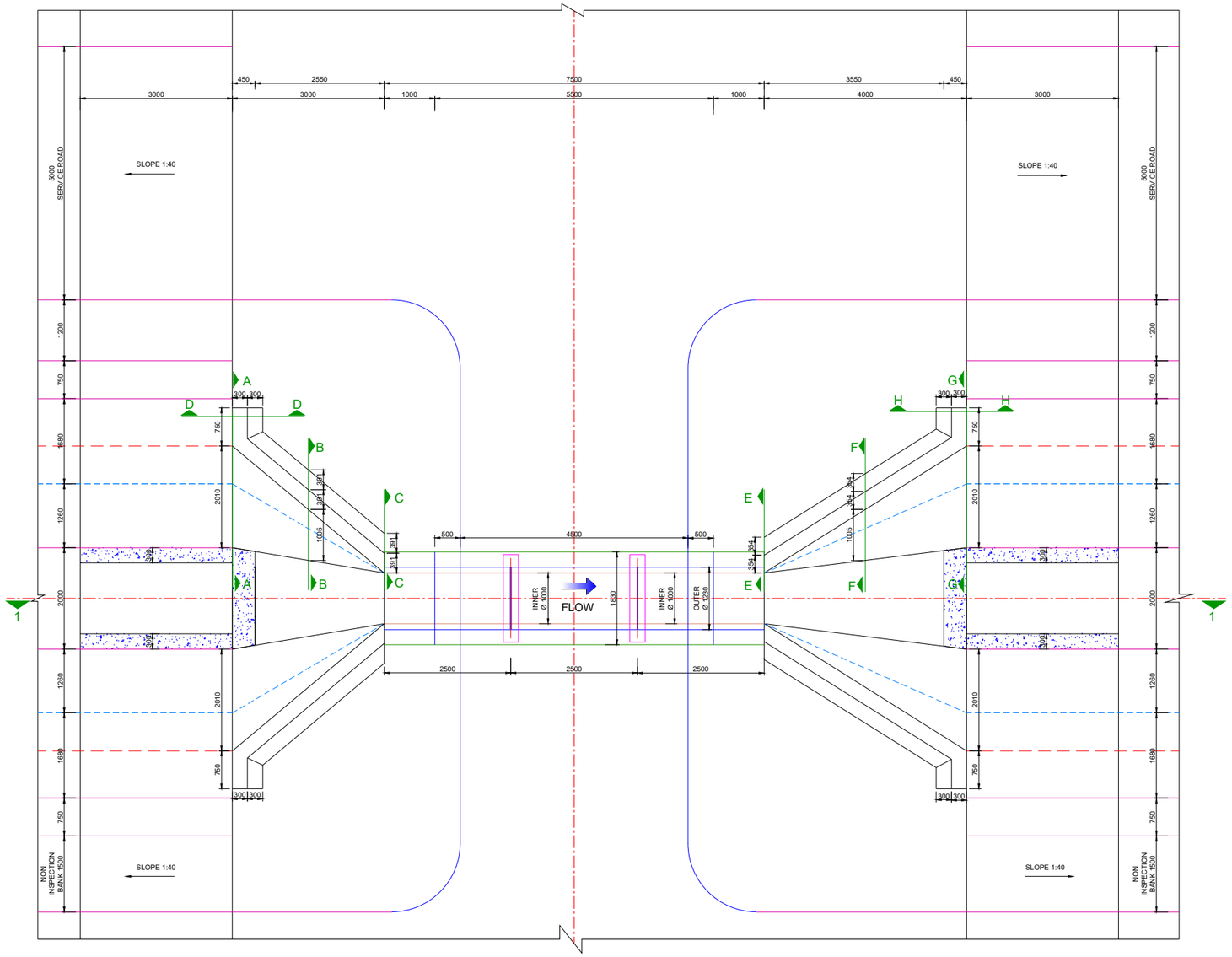
SECTION OF U/S TRANSITIONS
(SCALE A)



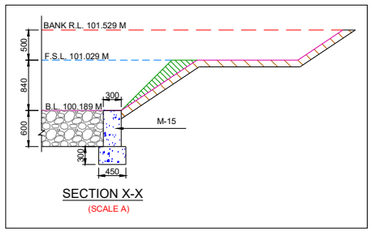
SECTION OF D/S TRANSITIONS
(SCALE A)



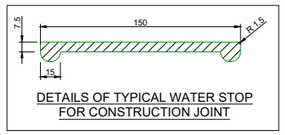
CROSS SECTION OF CANAL
(SCALE A)



LAYOUT PLAN
(SCALE A)



SECTION X-X
(SCALE A)

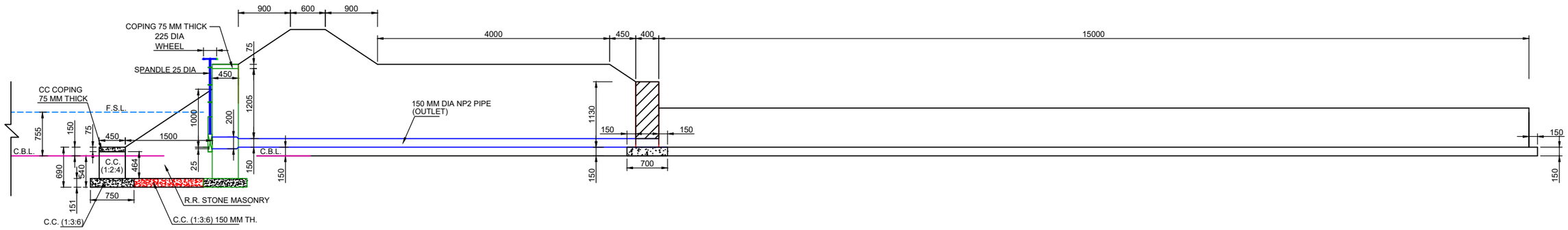


DETAILS OF TYPICAL WATER STOP FOR CONSTRUCTION JOINT

SCALE A:-

SCALE B:-

Prepared by :- WAPCOS LTD.	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	GENERAL ARRANGEMENT DRAWING OF PIPE BRIDGE AT KM 14.150 OF HETAMPUR DY.
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-24/PIPE BRG. 1 of 1

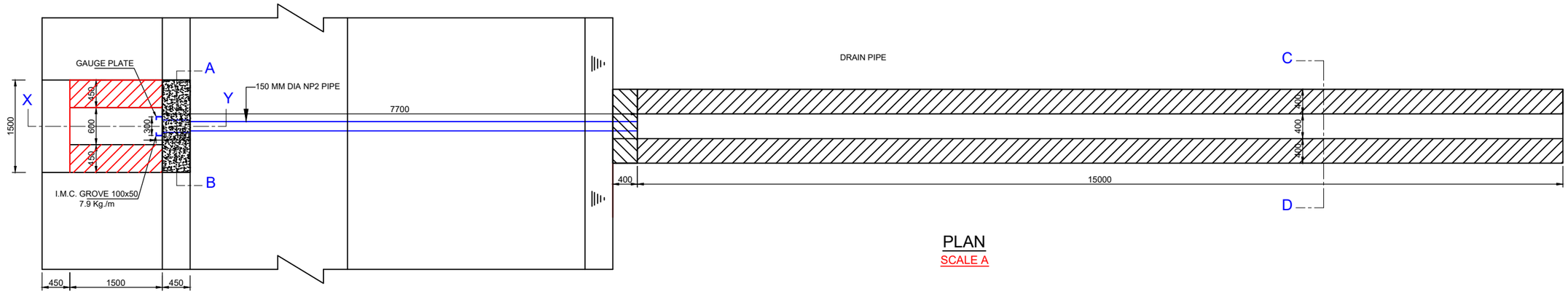


SECTION X-Y

SCALE A

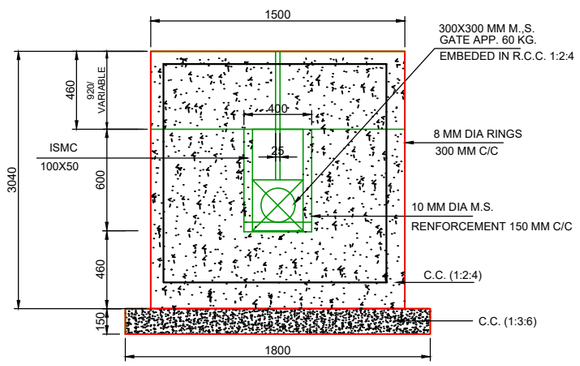
ELEVATION

SCALE A



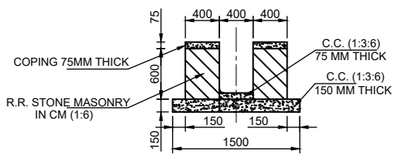
PLAN

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:-