

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



NORTH KOEL RESERVOIR PROJECT

FEBRUARY 2025

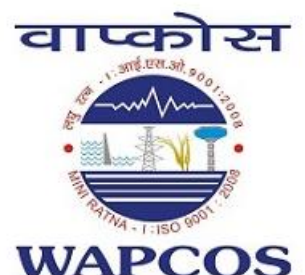
Completion of Balance
Works of North Koel
Reservoir Project

DRAWING REPORT – SONDIH-II SUB
DISTRIBUTARY (OFFTAKING FROM RIGHT
MAIN CANAL AT 80.410 KM)



WAPCOS LIMITED

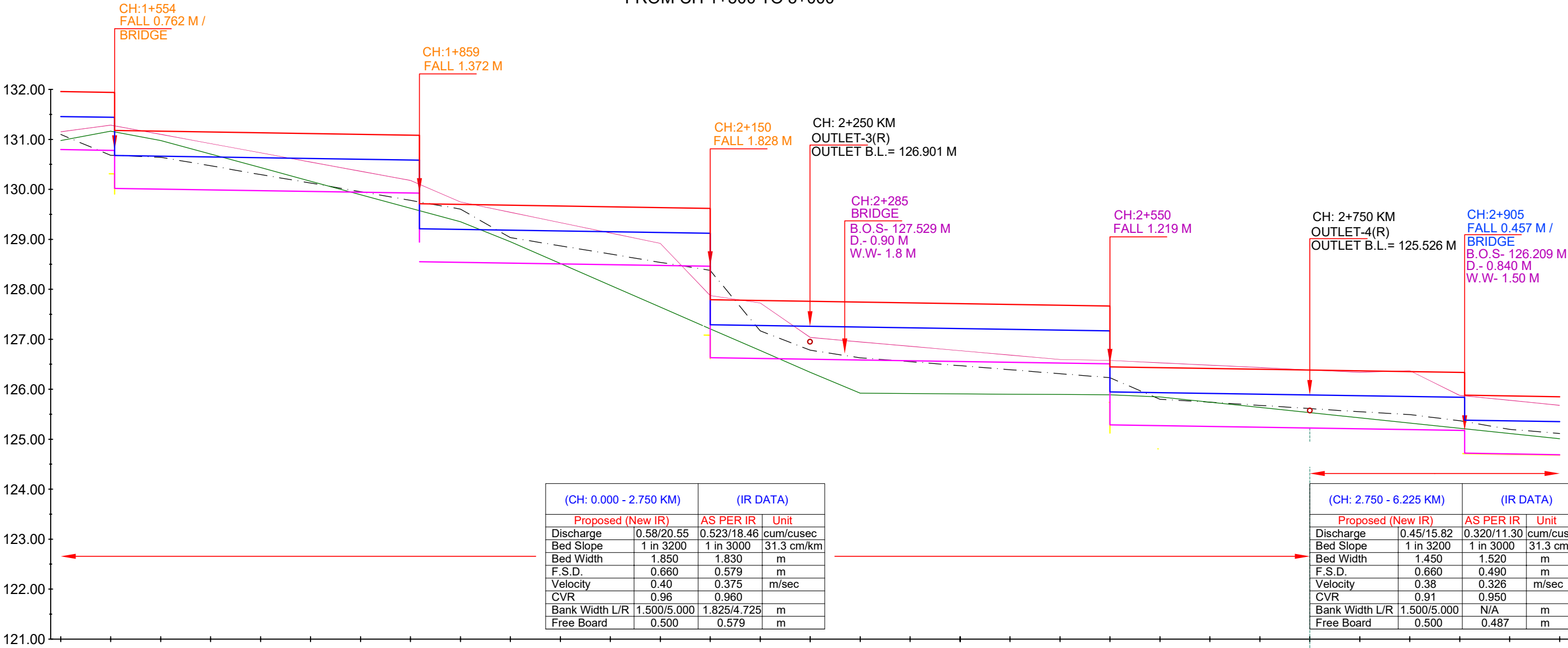
(GOVT. OF INDIA UNDERTAKING)
76- C SECTOR-18 INDUSTRIAL AREA,
GURUGRAM-122015 (HARYANA)



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L-SECTION

L- SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 1+500 TO 3+000



Chainage IN KM	EXISTING DATA			DESIGN DATA		
	NSL	TOP OF BANK LEVEL	Bed Level	Proposed Bed Level	F.S.L.	TOP OF BANK LEVEL
- 1+500	130.977	131.151	131.098	130.797	131.457	131.957
- 1+550	131.166	131.285	130.683			
- 1+600	130.978	131.100	130.641			
- 1+650	130.707	130.916	130.472			
- 1+700	130.436	130.732	130.296			
- 1+750	130.164	130.548	130.127			
- 1+800	129.893	130.363	129.953			
- 1+850	129.622	130.179	129.779			
- 1+900	129.350	129.748	129.605			
- 1+950	128.950	129.541	129.033			
- 2+000	128.514	129.334	128.870			
- 2+050	128.079	129.127	128.706			
- 2+100	127.644	128.919	128.539			
- 2+150	127.207	127.874	128.378			
- 2+200	126.777	127.727	127.167			
- 2+250	126.340	127.036	126.781			
- 2+300	125.920	126.948	126.629			
- 2+350	125.914	126.860	126.553			
- 2+400	125.907	126.772	126.471			
- 2+450	125.901	126.684	126.391			
- 2+500	125.895	126.596	126.311			
- 2+550	125.889	126.578	126.231			
- 2+600	125.847	126.530	125.798			
- 2+650	125.742	126.482	125.741			
- 2+700	125.637	126.434	125.677			
- 2+750	125.533	126.386	125.614			
- 2+800	125.428	126.338	125.549			
- 2+850	125.323	126.372	125.493			
- 2+900	125.219	125.878	125.369			
- 2+950	125.114	125.778	125.198			
- 3+000	125.009	125.678	125.114			

LEGEND

NSL

EXISTING TOP OF BANK

EXISTING STRUCTURE

MODIFIED STRUCTURE

NEW STRUCTURE

EXISTING BED LEVEL

PROPOSED BED LEVEL

PROPOSED FSL

PROPOSED TOP OF BANK LEVEL

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-
DRAWING TITLE :-
DRAWING NO. :-

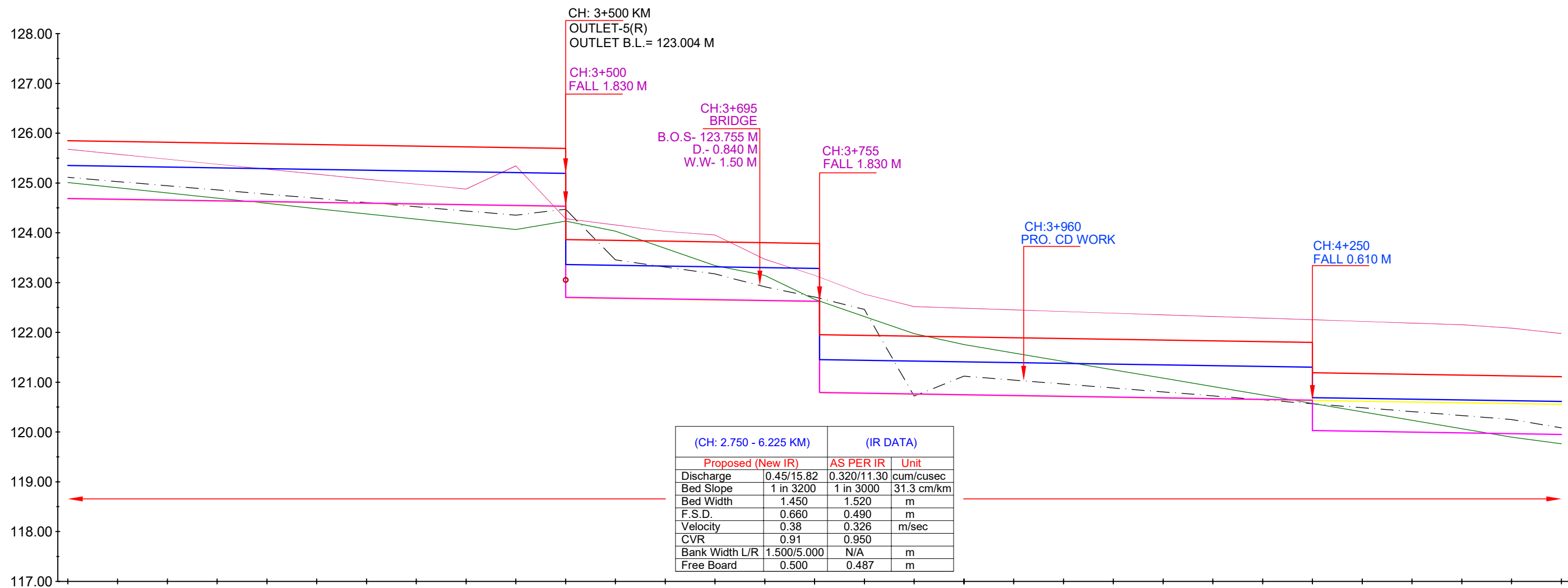
NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

L- SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L),
NORTH KOEL RIGHT MAIN CANAL)

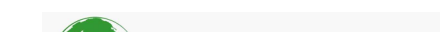
WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ LSEC-

02 of 06

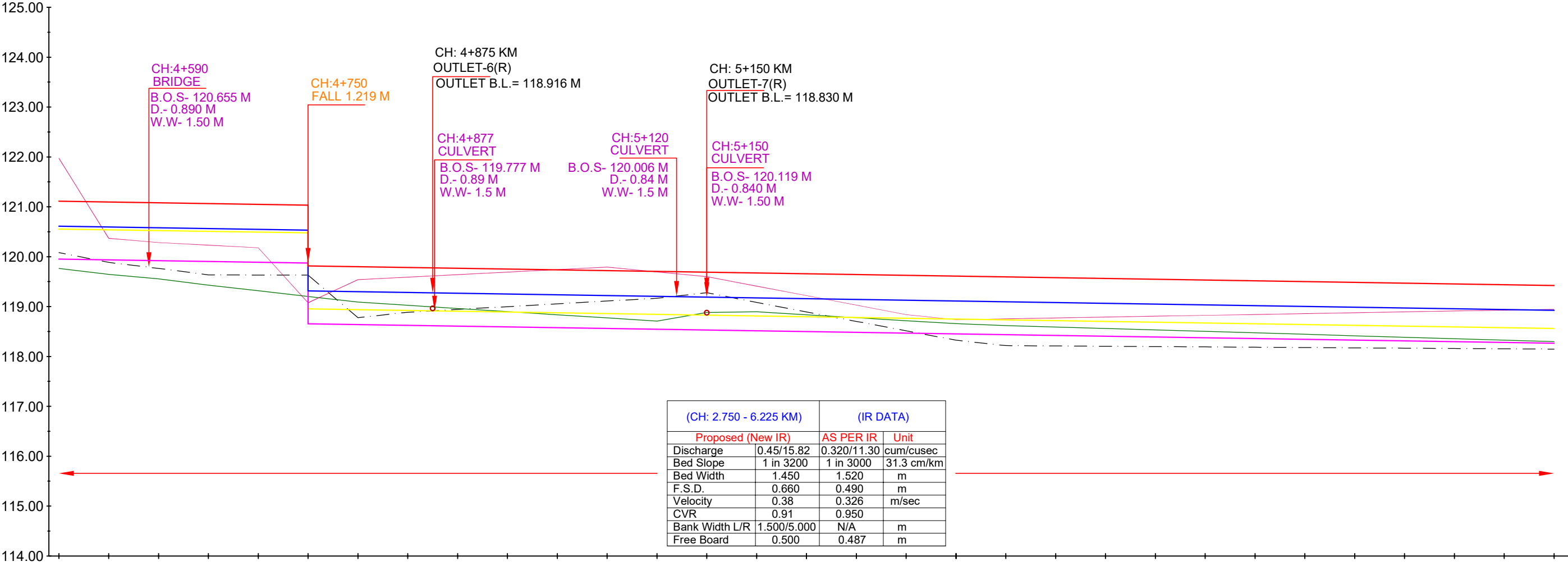
L- SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL,
FROM CH 3+000 TO 4+500



Chainage IN KM	EXISTING DATA			DESIGN DATA		
	NSL	TOP OF BANK LEVEL	Bed Level	Proposed Bed Level	F.S.L.	TOP OF BANK LEVEL
3+000	125.009	125.678	125.114	124.691	125.351	125.851
3+050	124.904	125.578	125.029	124.675	125.335	125.835
3+100	124.799	125.478	124.945	124.659	125.319	125.819
3+150	124.695	125.377	124.860	124.644	125.304	125.804
3+200	124.590	125.278	124.776	124.628	125.288	125.788
3+250	124.485	125.178	124.692	124.612	125.272	125.772
3+300	124.380	125.077	124.607	124.597	125.257	125.757
3+350	124.276	124.977	124.523	124.581	125.241	125.741
3+400	124.171	124.877	124.438	124.566	125.226	125.726
3+450	124.066	125.345	124.354	124.550	125.210	125.710
3+500	124.235	124.283	124.474	124.534	125.194	125.694
3+550	124.033	124.156	123.455	122.689	123.349	123.849
3+600	123.687	124.029	123.313	122.673	123.333	123.833
3+650	123.341	123.956	123.174	122.657	123.317	123.817
3+700	123.143	123.469	122.915	122.642	123.302	123.802
3+750	122.665	123.147	122.710	122.626	123.286	123.786
3+800	122.319	122.769	122.462	122.781	121.441	121.941
3+850	121.976	122.518	120.720	120.765	121.425	121.925
3+900	121.756	122.485	121.121	120.749	121.409	121.909
3+950	121.587	122.452	121.042	120.734	121.394	121.894
4+000	121.418	122.419	120.963	120.718	121.378	121.878
4+050	121.249	122.386	120.884	120.702	121.362	121.862
4+100	121.080	122.353	120.805	120.687	121.347	121.847
4+150	120.911	122.320	120.726	120.671	121.331	121.831
4+200	120.742	122.287	120.646	120.656	121.316	121.816
4+250	120.573	122.254	120.567	120.640	121.300	121.800
4+300	120.404	122.221	120.488	120.624	120.690	121.190
4+350	120.235	122.188	120.409	119.999	120.659	121.159
4+400	120.066	122.155	120.330	119.983	120.643	121.143
4+450	119.897	122.085	120.251	119.967	120.627	121.127
4+500	119.763	121.976	120.083	119.952	120.612	121.112

LEGEND				IMPLEMENTING AGENCY :- WAPCOS LTD. 	PROJECT TITLE :-		NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND	
 NSL		 EXISTING BED LEVEL			DRAWING TITLE :-		L- SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)	
 EXISTING TOP OF BANK		 PROPOSED BED LEVEL			DRAWING NO. :-		WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ LSEC- 03 of 06	
 EXISTING STRUCTURE		 PROPOSED FSL						
 MODIFIED STRUCTURE		 PROPOSED TOP OF BANK LEVEL						
 NEW STRUCTURE								

L- SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 4+500 TO 6+000



DESIGN DATA	TOP OF BANK LEVEL	121.112	121.096	121.081	121.065	121.049	121.034	119.815	119.799	119.783	119.768	119.752	119.737	119.721	119.705	119.690	119.674	119.658	119.643	119.627	119.612	119.596	119.580	119.565	119.549	119.533	119.518	119.502	119.487	119.471	119.455	119.440	119.424
	F.S.L.	120.612	120.596	120.581	120.565	120.549	120.534	119.315	119.299	119.283	119.268	119.252	119.237	119.221	119.205	119.190	119.174	119.158	119.143	119.127	119.112	119.096	119.080	119.065	119.049	119.033	119.018	119.002	118.987	118.971	118.955	118.940	118.924
EXISTING DATA	Proposed Bed Level	119.352	119.336	119.321	119.305	119.289	119.874	118.655	118.639	118.623	118.608	118.592	118.577	118.561	118.545	118.530	118.514	118.498	118.483	118.467	118.452	118.436	118.420	118.405	118.389	118.373	118.358	118.342	118.327	118.311	118.295	118.280	118.264
Chainage IN KM	Bed Level	120.083	119.886	119.765	119.635	119.632	119.631	118.776	118.776	118.887	118.943	118.998	119.056	119.111	119.166	119.279	119.083	118.891	118.703	118.514	118.326	118.217	118.211	118.204	118.198	118.192	118.185	118.179	118.172	118.166	118.160	118.153	118.147
	TOP OF BANK LEVEL	121.976	120.369	120.284	120.231	120.179	119.077	119.540	119.540	119.590	119.641	119.692	119.742	119.792	119.693	119.602	119.411	119.220	119.029	118.839	118.738	118.755	118.772	118.789	118.807	118.824	118.842	118.859	118.876	118.893	118.911	118.928	118.946
	NSL	119.763	119.647	119.554	119.428	119.316	119.204	119.092	119.092	119.026	118.962	118.899	118.835	118.772	118.709	118.880	118.895	118.836	118.776	118.716	118.657	118.619	118.590	118.561	118.532	118.503	118.473	118.444	118.415	118.386	118.357	118.327	118.298

LEGEND

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

IMPLEMENTING AGENCY :-

WAPCOS LTD.



PROJECT TITLE :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

DRAWING TITLE :-

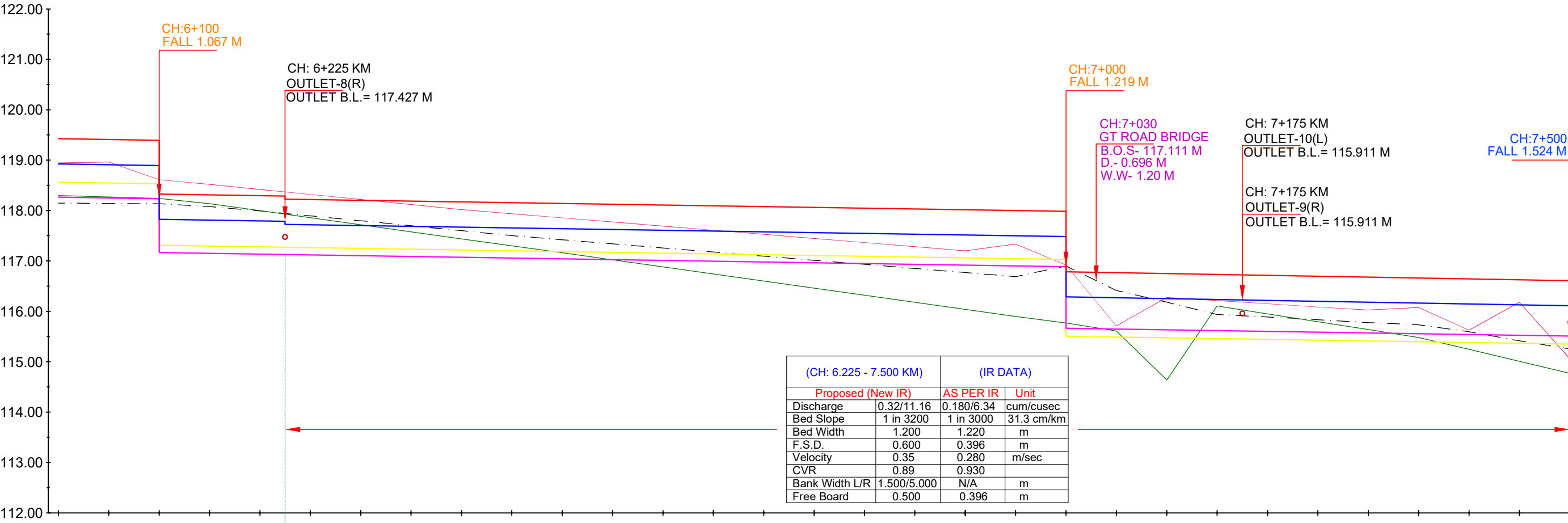
L- SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

DRAWING NO. :-

WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ LSEC-

(CH: 2.750 - 6.225 KM)		(IR DATA)	
Proposed (New IR)		AS PER IR	Unit
Discharge	0.45/15.82	0.320/11.30	cum/cusec
Bed Slope	1 in 3200	1 in 3000	31.3 cm/km
Bed Width	1.450	1.520	m
F.S.D.	0.660	0.490	m
Velocity	0.38	0.326	m/sec
CVR	0.91	0.950	
Bank Width L/R	1.500/5.000	N/A	m
Free Board	0.500	0.487	m

L- SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 6+000 TO 7+500



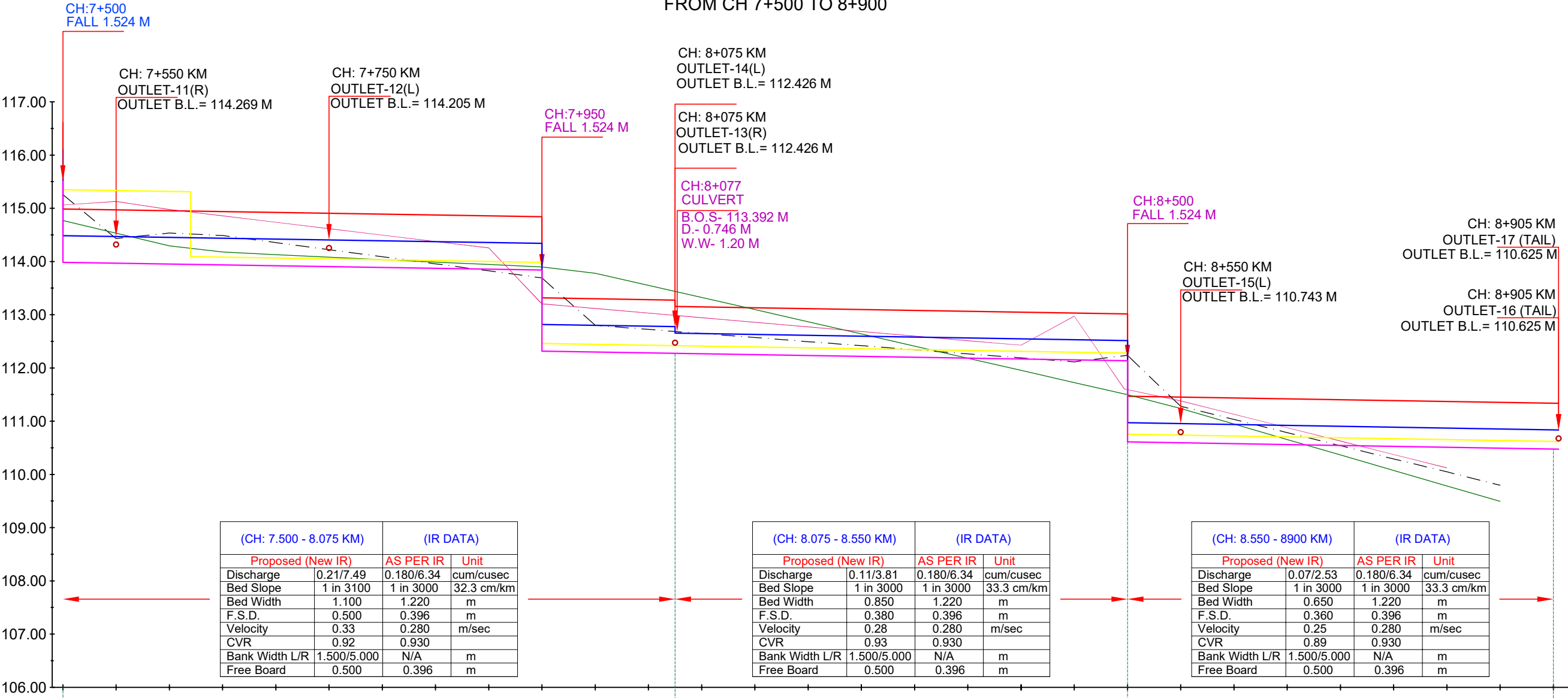
Chainage IN KM	DESIGN DATA		EXISTING DATA	
	TOP OF BANK LEVEL	F.S.L.	Bed Level	TOP OF BANK LEVEL
6+000	119.424	118.924	118.147	118.946
6+050	119.408	118.908	118.141	118.963
6+100	119.393	118.893	118.135	118.612
6+150	118.310	117.810	118.077	118.520
6+200	118.295	117.795	117.992	118.420
6+225	117.287	117.787	117.927	117.859
6+250	118.219	117.719	117.894	118.320
6+300	118.203	117.703	117.797	118.219
6+350	118.188	117.688	117.698	118.119
6+400	118.172	117.672	117.601	118.018
6+450	118.156	117.656	117.502	117.936
6+500	118.141	117.641	117.420	117.855
6+550	118.125	117.625	117.339	117.773
6+600	118.110	117.610	117.257	117.691
6+650	118.094	117.594	117.176	117.610
6+700	118.078	117.578	117.095	117.528
6+750	118.063	117.563	117.013	117.446
6+800	118.047	117.547	116.932	117.365
6+850	118.031	117.531	116.851	117.283
6+900	118.016	117.516	116.769	117.201
6+950	118.000	117.500	116.688	117.333
7+000	117.985	117.485	116.901	116.917
7+050	116.766	116.266	116.415	115.709
7+100	116.734	116.234	116.181	116.276
7+150	116.719	116.219	115.937	116.213
7+200	116.703	116.203	115.888	116.150
7+250	116.687	116.187	115.833	116.086
7+300	116.672	116.172	115.776	116.026
7+350	116.656	116.156	115.734	116.077
7+400	116.641	116.141	115.594	115.628
7+450	116.625	116.125	115.414	116.179
7+500	116.609	116.109	115.255	115.062

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

IMPLEMENTING AGENCY :-
WAPCOS LTD.

PROJECT TITLE :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
DRAWING TITLE :-	L- SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)		
DRAWING NO. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ LSEC-		

L- SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
FROM CH 7+500 TO 8+900



Chainage IN KM	EXISTING DATA			DESIGN DATA		
	NSL	TOP OF BANK LEVEL	Bed Level	Proposed Bed Level	F.S.L.	TOP OF BANK LEVEL
7+500	114.774	115.062	115.255	115.509	116.109	116.609
7+550	114.532	115.127	114.432	113.985	114.485	114.985
7+600	114.293	114.978	114.534	113.953	114.453	114.953
7+650	114.177	114.858	114.488	113.937	114.437	114.937
7+700	114.130	114.737	114.355	113.921	114.421	114.921
7+750	114.083	114.617	114.222	113.905	114.405	114.905
7+800	114.036	114.496	114.090	113.888	114.388	114.888
7+850	113.989	114.376	113.957	113.872	114.372	114.872
7+900	113.943	114.256	113.824	113.856	114.356	114.856
7+950	113.896	113.205	113.691	113.840	114.340	114.840
8+000	113.780	113.118	112.801	112.300	112.800	113.300
8+050	113.552	613.032	112.725	112.284	112.784	113.284
8+075				112.276	112.776	113.276
8+100	113.324	112.946	112.646	112.267	112.647	113.147
8+150	113.096	112.860	112.573	112.251	112.631	113.131
8+200	112.867	112.773	112.494	112.234	112.614	113.114
8+250	112.639	112.687	112.419	112.217	112.597	113.097
8+300	112.411	112.600	112.342	112.201	112.581	113.081
8+350	112.182	112.514	112.264	112.184	112.564	113.064
8+400	111.954	112.428	112.190	112.167	112.547	113.047
8+450	111.726	112.974	112.115	112.151	112.531	113.031
8+500	111.499	111.635	112.238	112.134	112.514	113.014
8+550	111.238	111.382	111.280	110.593	110.953	111.453
8+600	110.947	111.130	111.033	110.577	110.937	111.437
8+650	110.656	110.879	110.786	110.560	110.920	111.420
8+700	110.366	110.627	110.540	110.543	110.903	111.403
8+750	110.075	110.374	110.291	110.527	110.887	111.387
8+800	109.784	110.123	110.048	110.510	110.870	111.370
8+850	109.493		109.796	110.493	110.853	111.353
8+900				110.477	110.837	111.337

LEGEND

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

IMPLEMENTING AGENCY :-

WAPCOS LTD.



PROJECT TITLE :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

DRAWING TITLE :-

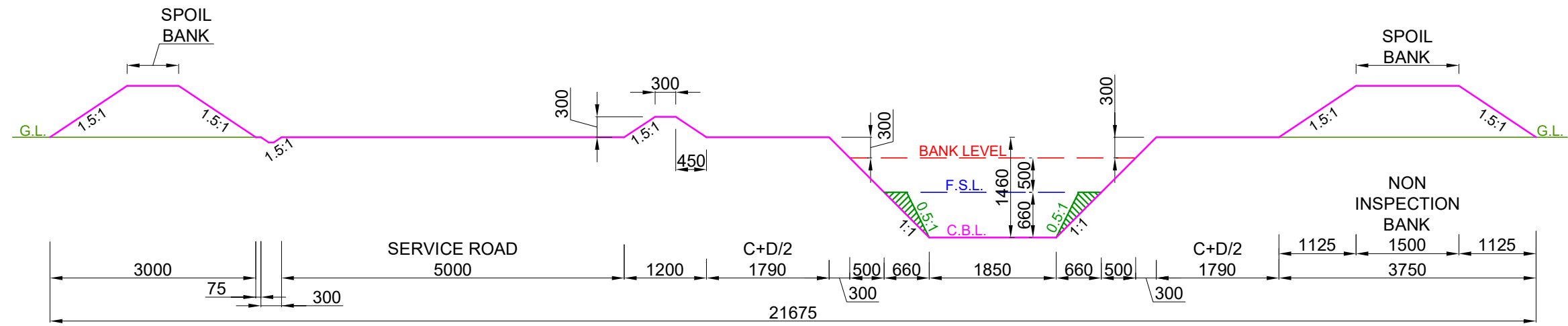
L- SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

DRAWING NO. :-

WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ LSEC-

TYPICAL X-SECTION

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING

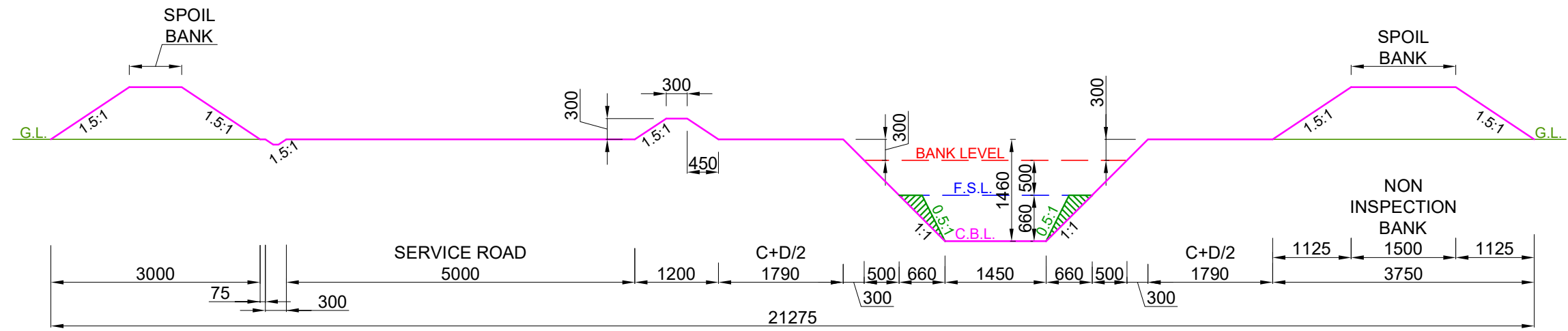


DESIGN SECTION FROM CH: 0.000 KM TO CH: 2.750 KM

- 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 CUT AREA FILL AREA		Prepared by :- WAPCOS LTD. 	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND	
			Drawing Title :-	X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)	
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FC)	
				1 of 6	

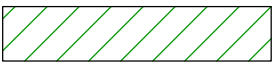
TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 2.750 KM TO CH: 6.225 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.

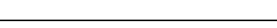
LEGEND		Prepared by :- WAPCOS LTD. 	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND			
	CUT AREA		Drawing Title :-	X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)			
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FC) 2 of 6			

The diagram illustrates the cross-section of a road project with the following components and dimensions:

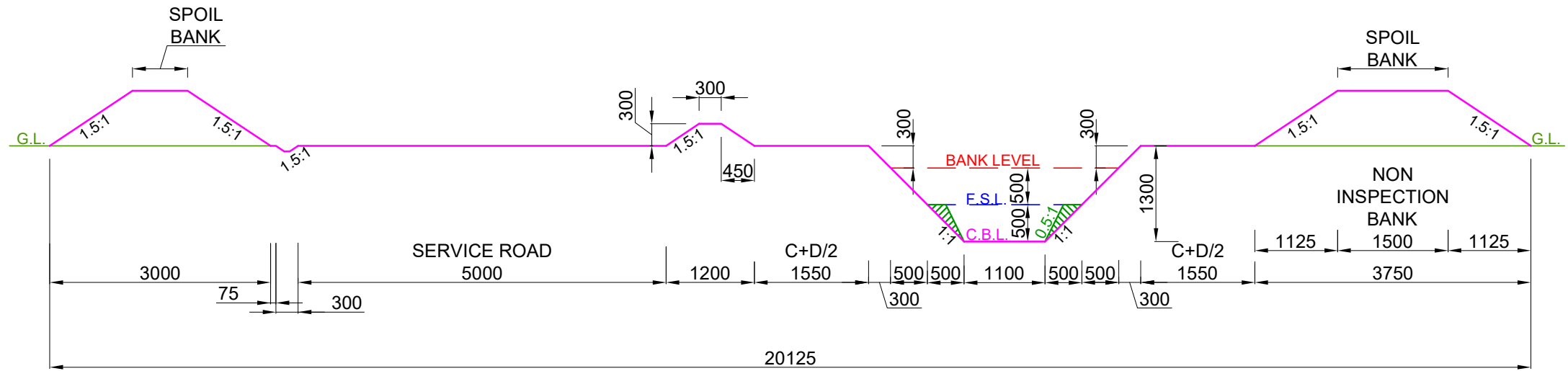
- SPOIL BANK:** Located at the far left and right, with a slope of 1.5:1.
- SERVICE ROAD:** A 5000-unit wide section with a 3000-unit shoulder on the left and a 300-unit shoulder on the right. A 75-unit wide feature is also indicated on the left shoulder.
- C+D/2:** A 1700-unit wide section with a 1200-unit shoulder on the left and a 1200-unit shoulder on the right. A 300-unit wide feature is indicated on the right shoulder.
- NON INSPECTION BANK:** A 3750-unit wide section with a 1500-unit central area and 1125-unit shoulders on both sides.
- Vertical Dimensions:**
 - 300 units for the height of the spoil bank.
 - 300 units for the height of the service road shoulder.
 - 450 units for the height of the C+D/2 shoulder.
 - 300 units for the height of the non inspection bank shoulder.
 - 1400 units for the total height of the C+D/2 section.
 - 500 units for the height of the C+D/2 section.
 - 600 units for the height of the C+D/2 section.
 - 600 units for the height of the C+D/2 section.
 - 300 units for the height of the C+D/2 section.
- Labels:**
 - G.L. (Ground Level):** Indicated at the far left and right.
 - BANK LEVEL:** Indicated in red text.
 - F.S.L. (Finished Surface Level):** Indicated in blue text.
 - C.B.L. (Centerline Bank Level):** Indicated in pink text.
- Total Width:** 20725 units.

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.

A	LEGEND		Prepared by :- WAPCOS LTD. 	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
		CUT AREA		Drawing Title :-	X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
		FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FC) 3 of 6

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING



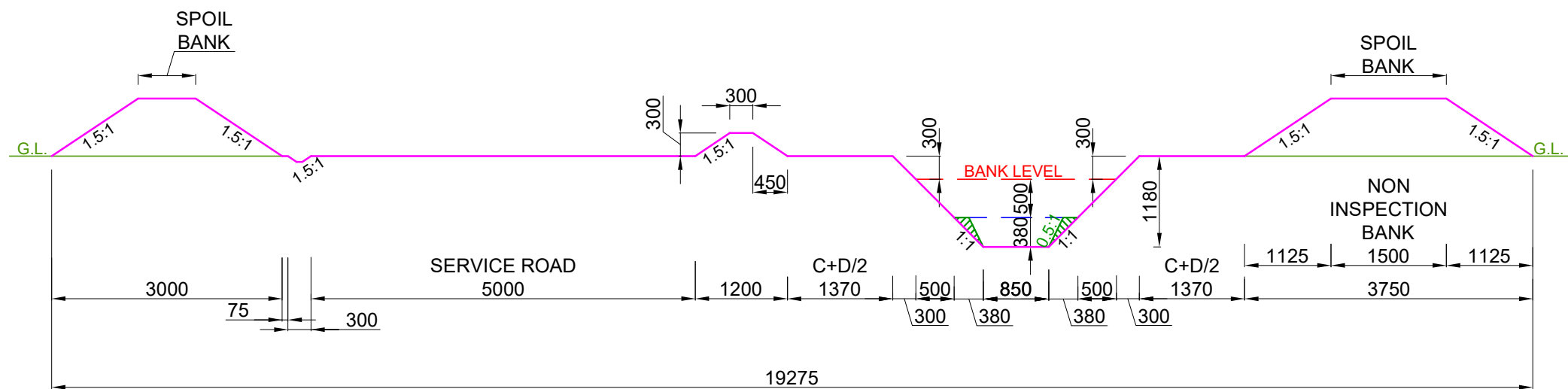
DESIGN SECTION FROM CH: 7.500 KM TO CH: 8.075 KM

- 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 CUT AREA FILL AREA		Prepared by :- WAPCOS LTD. 	Project Title :- NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
			Drawing Title :- X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :- WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FC)

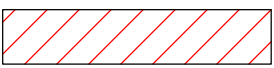
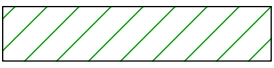
4 of 6

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING

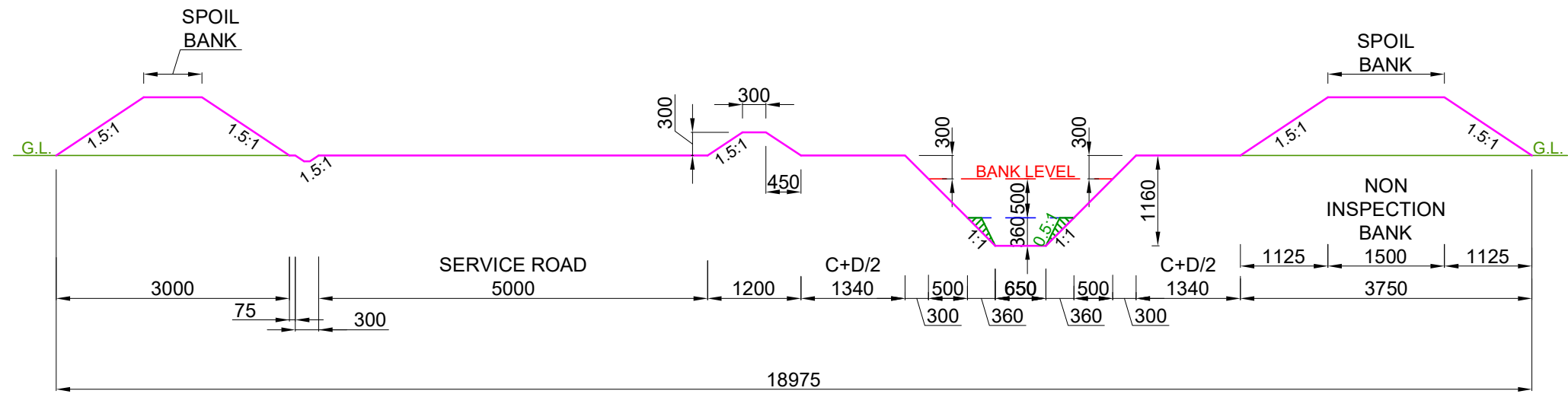


DESIGN SECTION FROM CH: 8.075 KM TO CH: 8.500 KM

- 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.

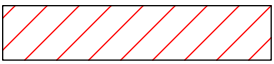
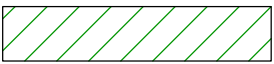
LEGEND		Prepared by :- WAPCOS LTD. 	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND			
	CUT AREA		Drawing Title :-	X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)			
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FC) 5 of 6			

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING

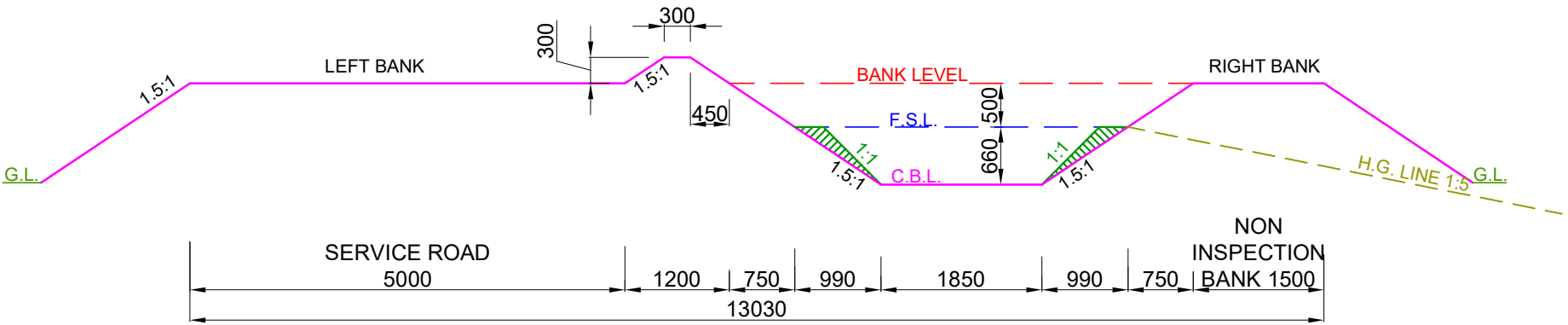


DESIGN SECTION FROM CH: 8.500 KM TO CH: 8.900 KM

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

LEGEND		Prepared by :- WAPCOS LTD. 	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND			
	CUT AREA		Drawing Title :-	X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)			
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FC) 6 of 6			

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING



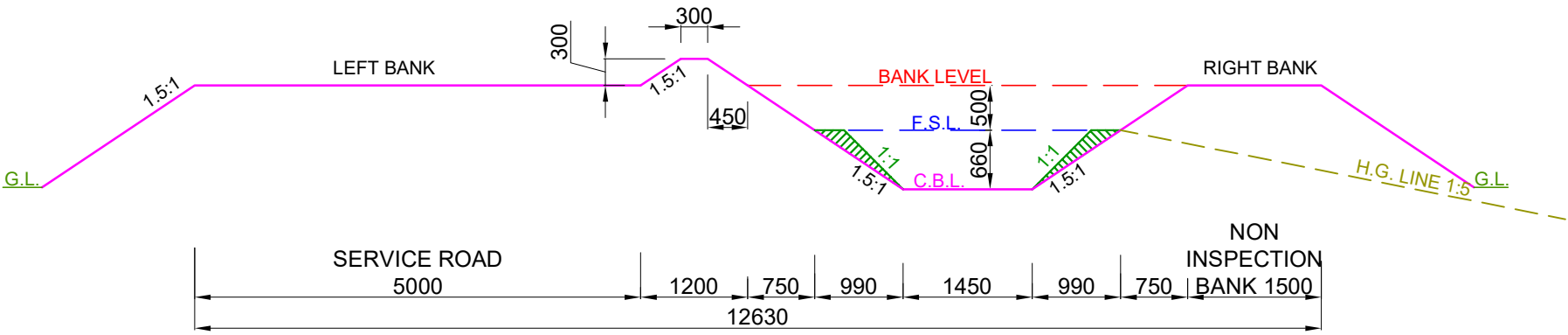
DESIGN SECTION FROM CH: 0.000 KM TO CH: 2.750 KM

- 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 CUT AREA FILL AREA		Prepared by :- WAPCOS LTD. 	Project Title :- NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
			Drawing Title :- X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :- WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FF)

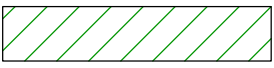
1 of 6

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING

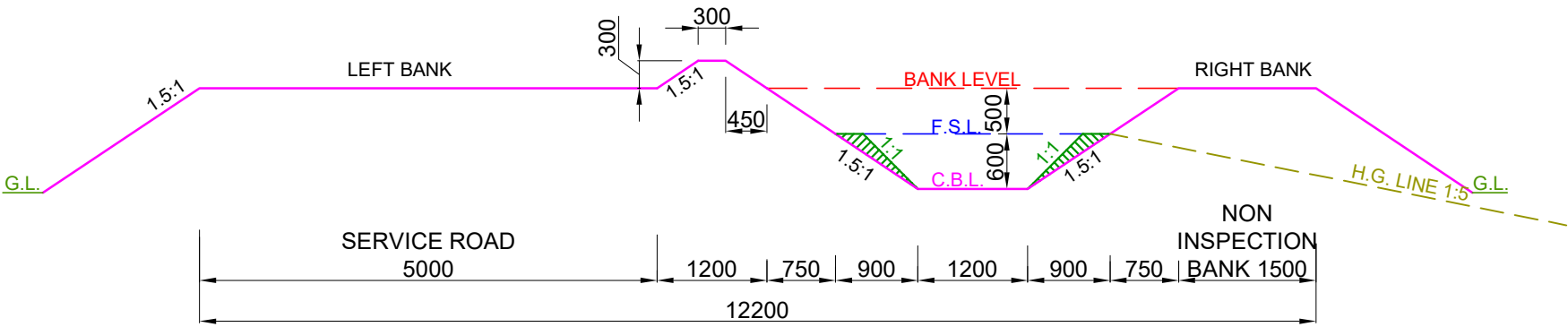


DESIGN SECTION FROM CH: 2.750 KM TO CH: 6.225 KM

- 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 SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)		
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FF) 2 of 6		

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING



DESIGN SECTION FROM CH: 6.225 KM TO CH: 7.500 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.

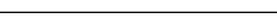
LEGEND CUT AREA FILL AREA		Prepared by :- WAPCOS LTD. 	Project Title :- NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
			Drawing Title :- X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :- WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FF)
		3 of 6	

The diagram illustrates a cross-section of a road with a central ditch and side slopes. The road is 5000m wide, and the ditch is 1200m wide. The side slopes are 1:1.5. The ditch has a 1:1.5 slope and a 300m wide top. The diagram also shows the ground level (G.L.), bank level, and the high ground line (H.G. LINE). The total width of the road is 11800m.

Component	Width (m)
Service Road	5000
Ditch	1200
Inspection Bank	1500
Total Road Width	11800

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 SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)	
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FF)4 of 6	

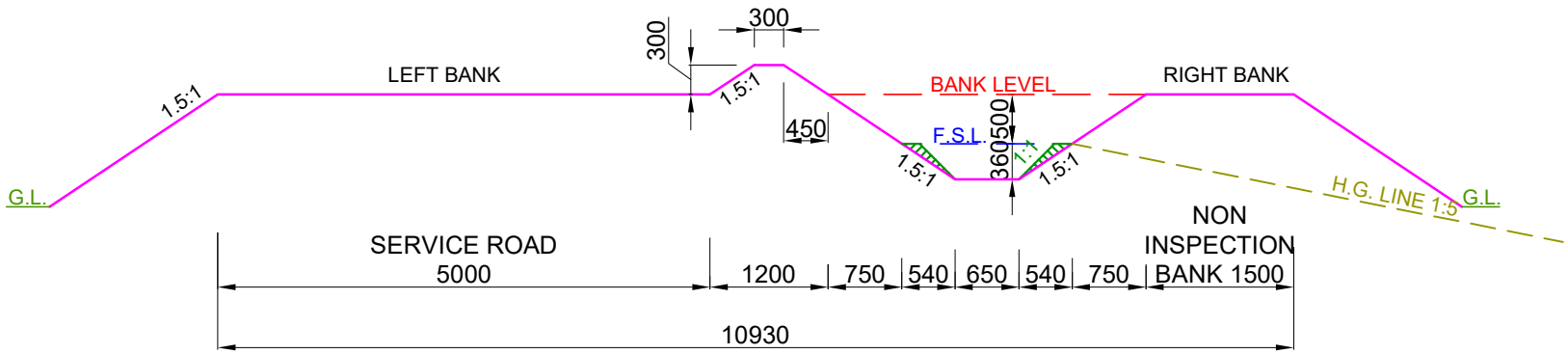
The diagram illustrates the cross-section of a road. The central section is a 5000mm wide SERVICE ROAD. On either side of the service road are 1500mm wide NON INSPECTION BANKS. The left bank has a 1.5:1 slope. The right bank also has a 1.5:1 slope. The total width of the road is 11190mm. The diagram includes labels for G.L. (Ground Level), F.S.L. (Finished Surface Level), C.B.L. (Center Bank Level), and H.G. LINE (Highway Grade Line). The diagram also shows a 300mm wide top section, a 450mm high section, and a 380mm high section.

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.

A	LEGEND		Prepared by :- WAPCOS LTD. 	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND	
		CUT AREA		Drawing Title :-	X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)	
		FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FF) 5 of 6	

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING

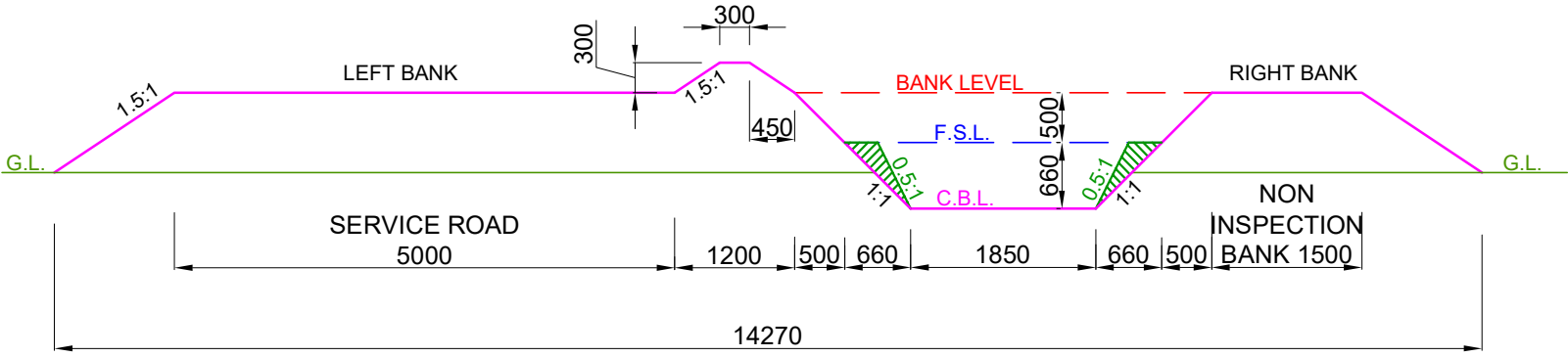


DESIGN SECTION FROM CH: 8.500 KM TO CH: 8.900 KM

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

LEGEND CUT AREA FILL AREA		Prepared by :- WAPCOS LTD. 	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND	
			Drawing Title :-	X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)	
			Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(FF) 6 of 6	

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING



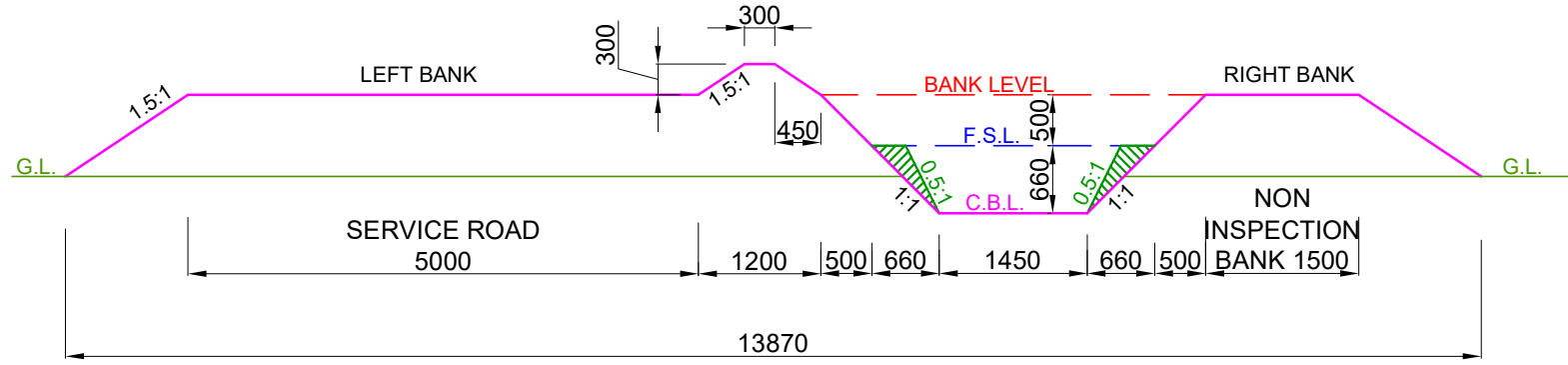
DESIGN SECTION FROM CH: 0.000 KM TO CH: 2.750 KM

- 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 CUT AREA FILL AREA	Prepared by :- WAPCOS LTD. 	Project Title :- NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
		Drawing Title :- X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
		Drawing No. :- WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(PCF)

1 of 6

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING

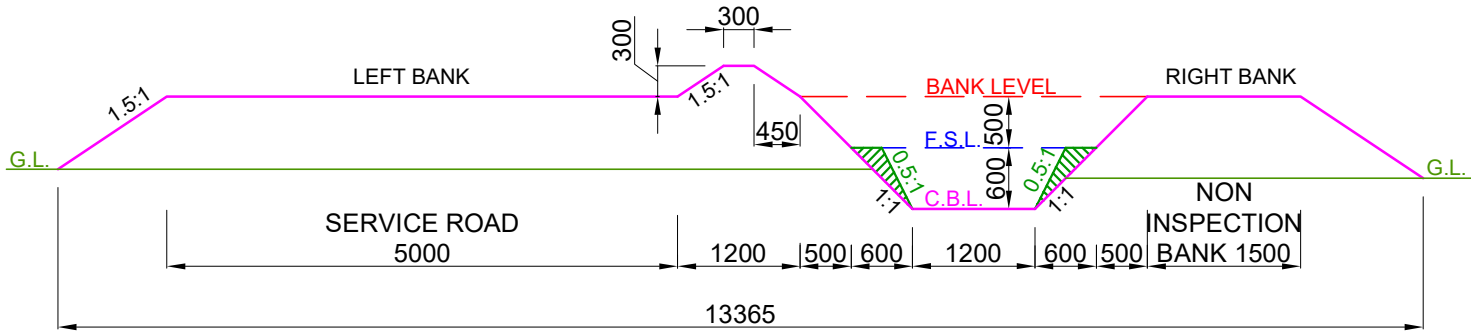


DESIGN SECTION FROM CH: 2.750 KM TO CH: 6.225 KM

- 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 CUT AREA FILL AREA		Prepared by :- WAPCOS LTD. 	Project Title :- NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
			Drawing Title :- X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
			Drawing No. :- WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(PCF)

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING

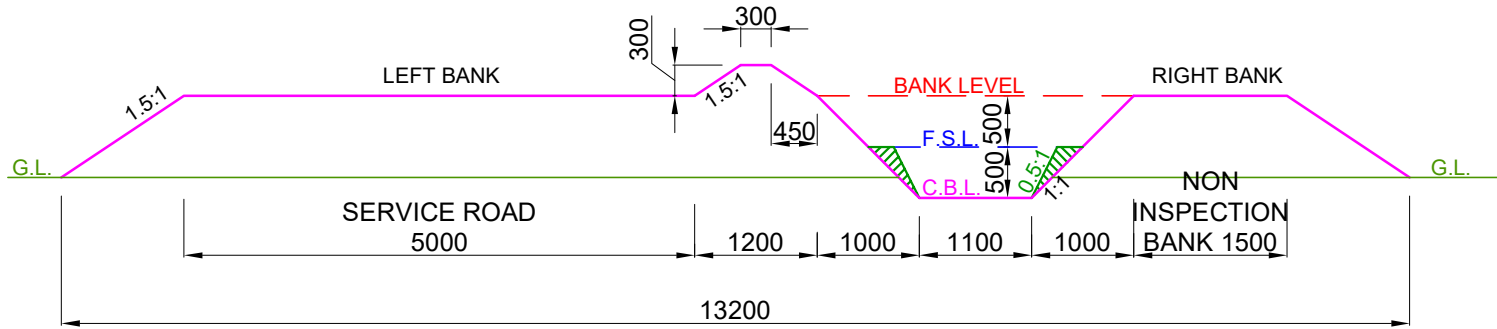


DESIGN SECTION FROM CH: 6.225 KM TO CH: 7.500 KM

- 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.

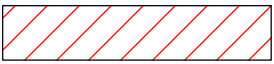
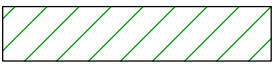
LEGEND		Prepared by :- WAPCOS LTD. 	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND			
	CUT AREA		Drawing Title :-	X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)			
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(PCF) 3 of 6			

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING

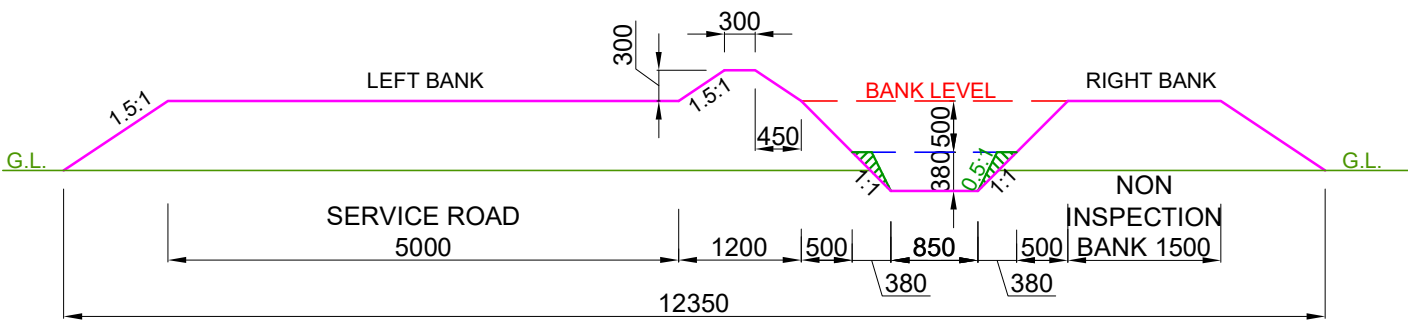


DESIGN SECTION FROM CH: 7.500 KM TO CH: 8.075 KM

- 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 SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)			
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(PCF) 4 of 6			

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING

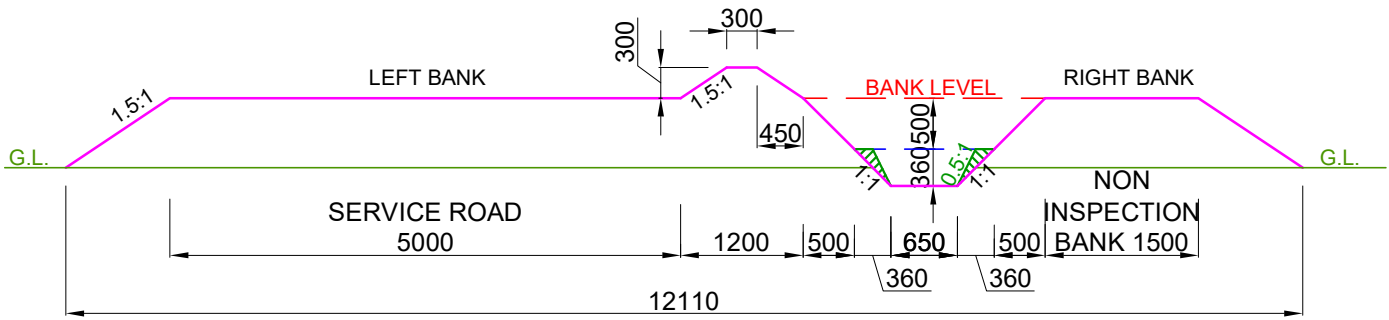


DESIGN SECTION FROM CH: 8.075 KM TO CH: 8.500 KM

- 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 SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)				
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(PCF) 5 of 6				

TYPICAL X - SECTION OF SONDIH-II SUB-DISTRIBUTARY
(OFFTAKE FROM RD - 80+719 KM. (LT), NORTH KOEL RIGHT MAIN CANAL)
DESIGN SECTION FOR FULL CUTTING



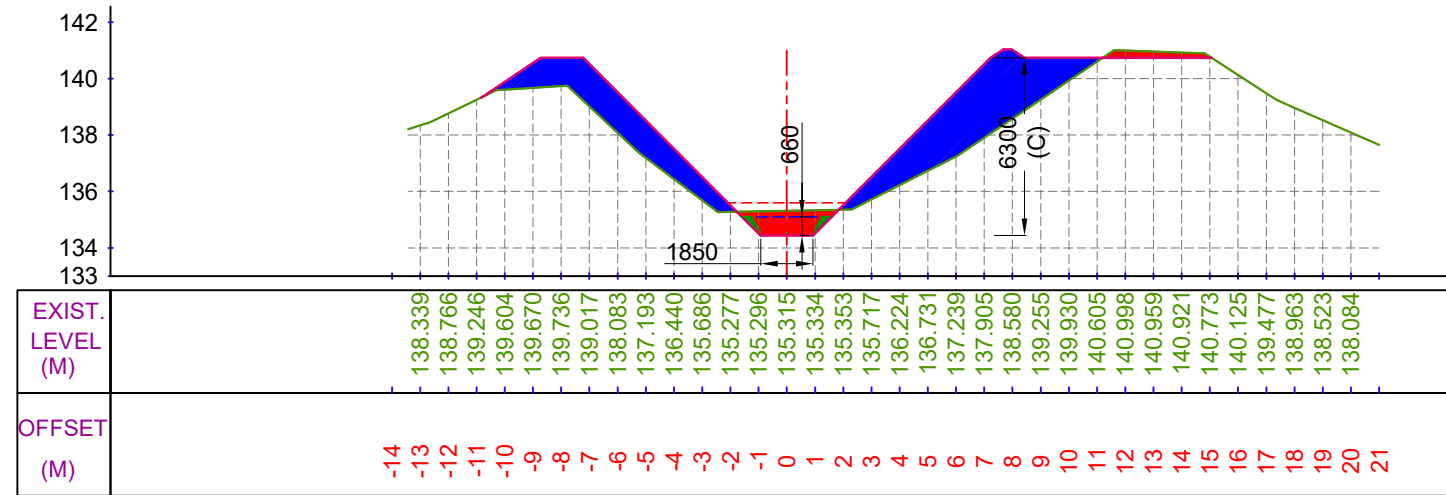
DESIGN SECTION FROM CH: 8.500 KM TO CH: 8.900 KM

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

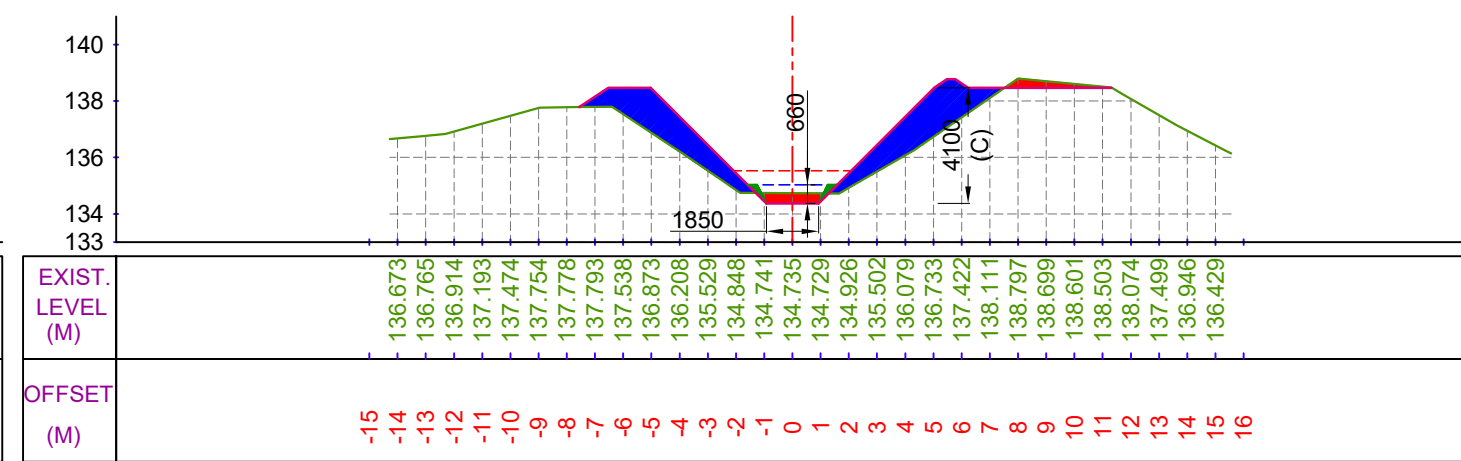
LEGEND		Prepared by :- WAPCOS LTD. 	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
	CUT AREA		Drawing Title :-	X SECTION OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)		
	FILL AREA		Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC /TYP-(PCF) 6 of 6		

CROSS-SECTION

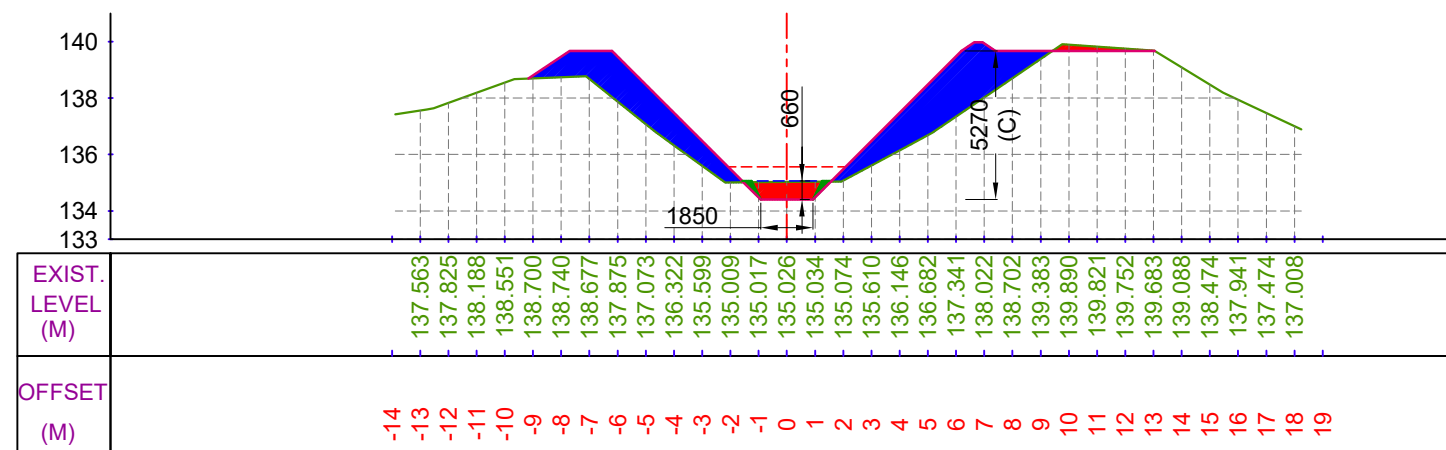
X SECTION OF SONDIH-II SUB-DY.



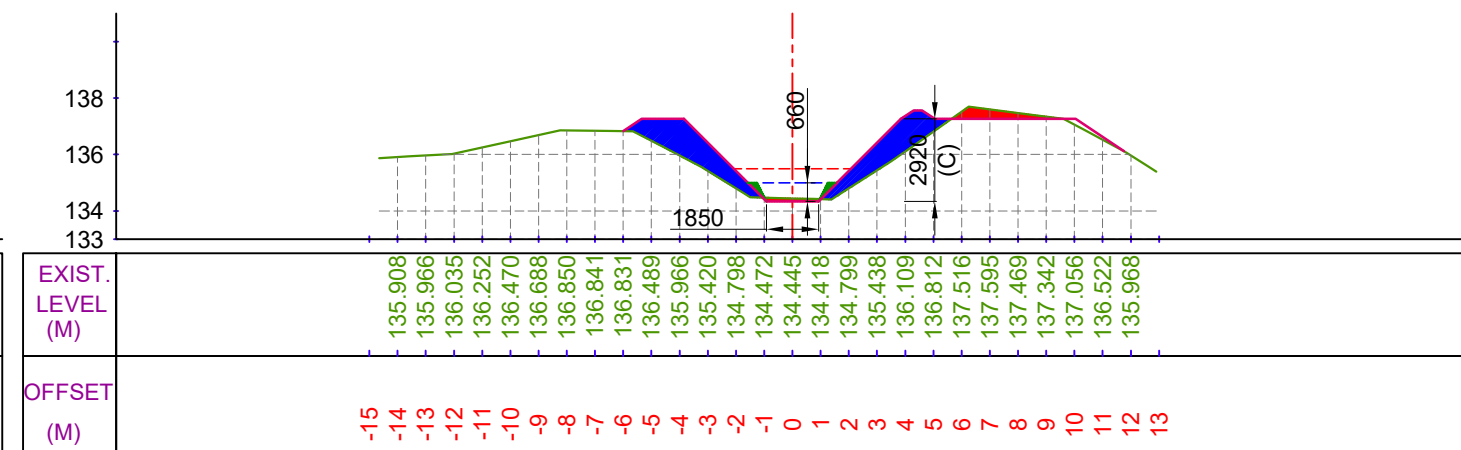
CUTTING AREA (SQ.M) = 2.965 CH. (KM):- 0+100
FILLING AREA (SQ.M) = 22.254 DESIGNED BED LEVEL = 134.434 M



CUTTING AREA (SQ.M) = 1.361 CH. (KM):- 0+300
FILLING AREA (SQ.M) = 11.573 DESIGNED BED LEVEL = 134.371 M



CUTTING AREA (SQ.M) = 1.779 CH. (KM):- 0+200
FILLING AREA (SQ.M) = 16.910 DESIGNED BED LEVEL = 134.403 M



CUTTING AREA (SQ.M) = 1.063 CH. (KM):- 0+400
FILLING AREA (SQ.M) = 7.281 DESIGNED BED LEVEL = 134.340 M

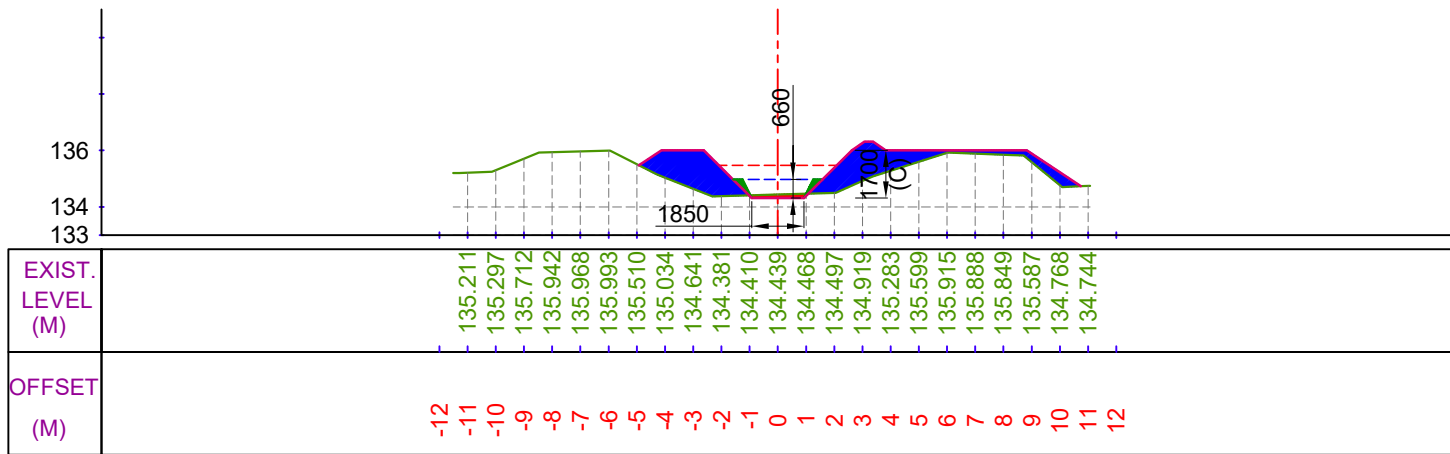
LEGEND

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

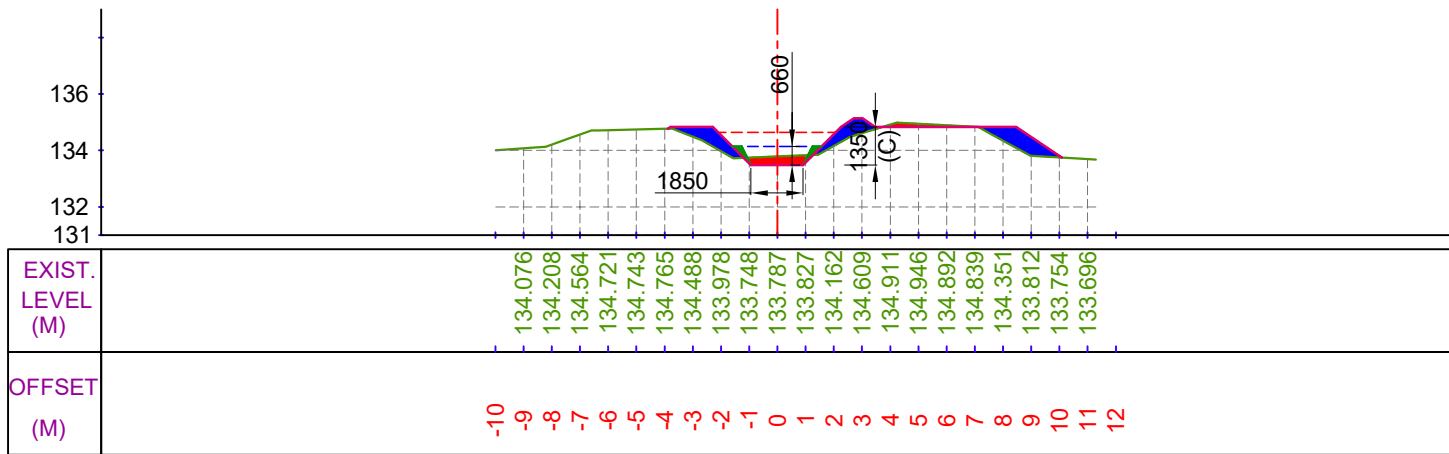
Prepared by :-
WAPCOS LTD.

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC- 1 of 23

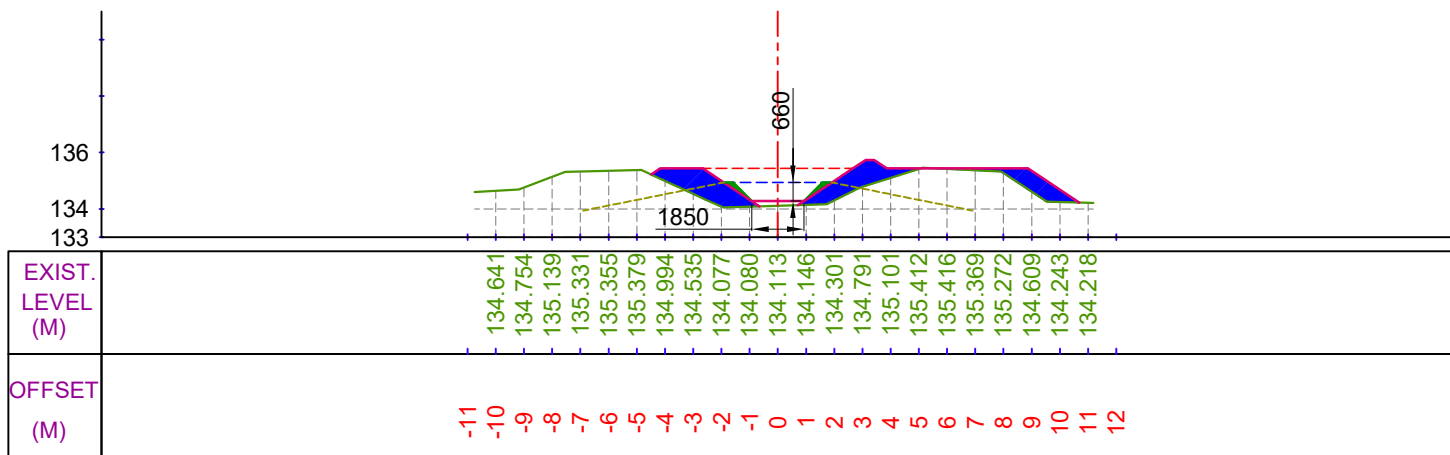
X SECTION OF SONDIH-II SUB-DY.



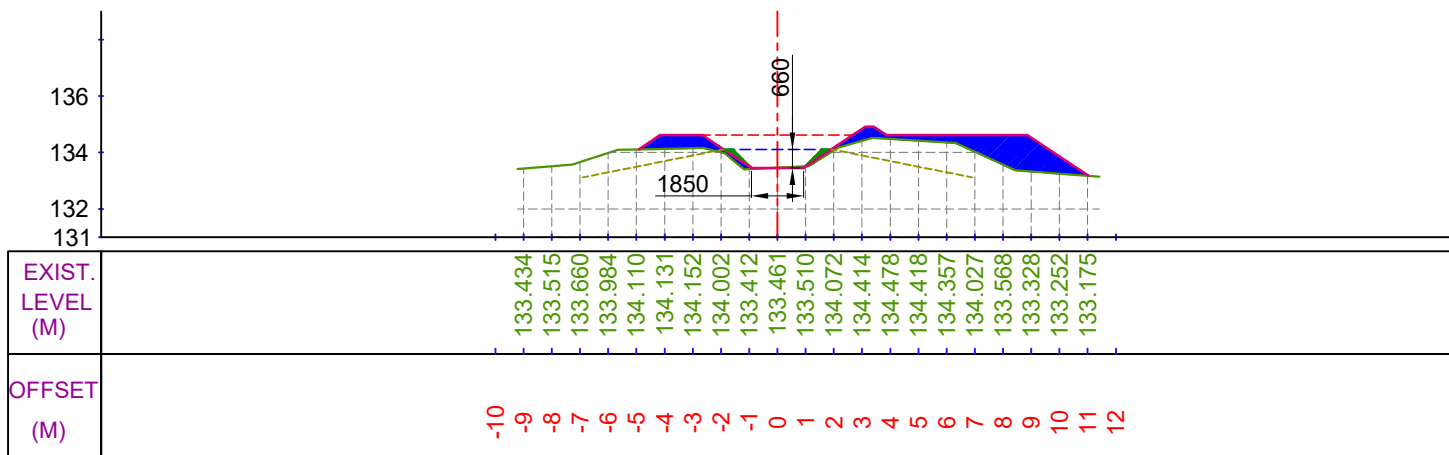
CUTTING AREA (SQ.M) = 0.249 CH. (KM):- 0+500
FILLING AREA (SQ.M) = 7.984 DESIGNED BED LEVEL = 134.309 M



CUTTING AREA (SQ.M) = 0.862 CH. (KM):- 0+700
FILLING AREA (SQ.M) = 3.076 DESIGNED BED LEVEL = 133.484 M

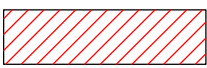


CUTTING AREA (SQ.M) = 0.004 CH. (KM):- 0+600
FILLING AREA (SQ.M) = 6.031 DESIGNED BED LEVEL = 134.278 M

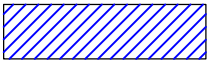


CUTTING AREA (SQ.M) = 0.031 CH. (KM):- 0+800
FILLING AREA (SQ.M) = 5.893 DESIGNED BED LEVEL = 133.453 M

LEGEND



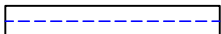
CUT AREA



FILL AREA



EXISTING BED LINE



F.S.L.



DESIGNED BED LINE



H.G. LINE

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

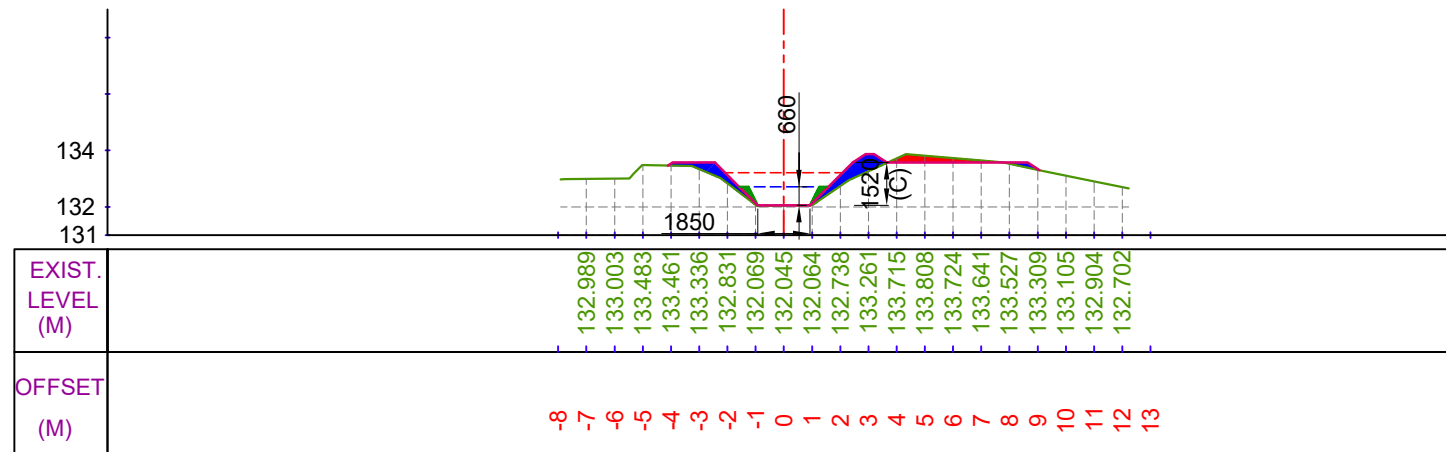
X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-

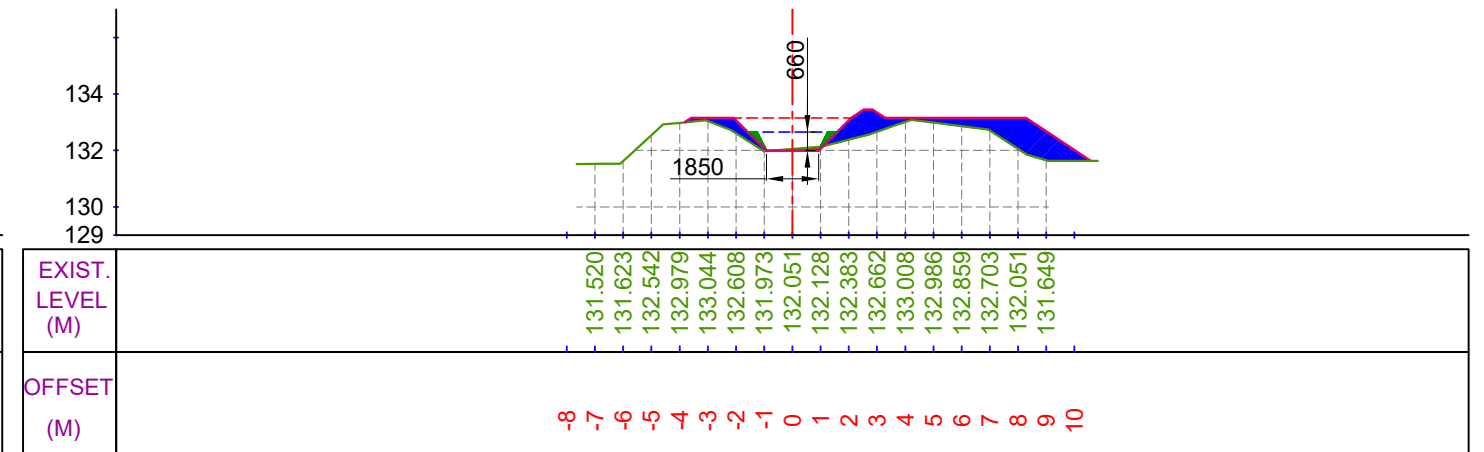
2 of 23

X SECTION OF SONDIH-II SUB-DY.



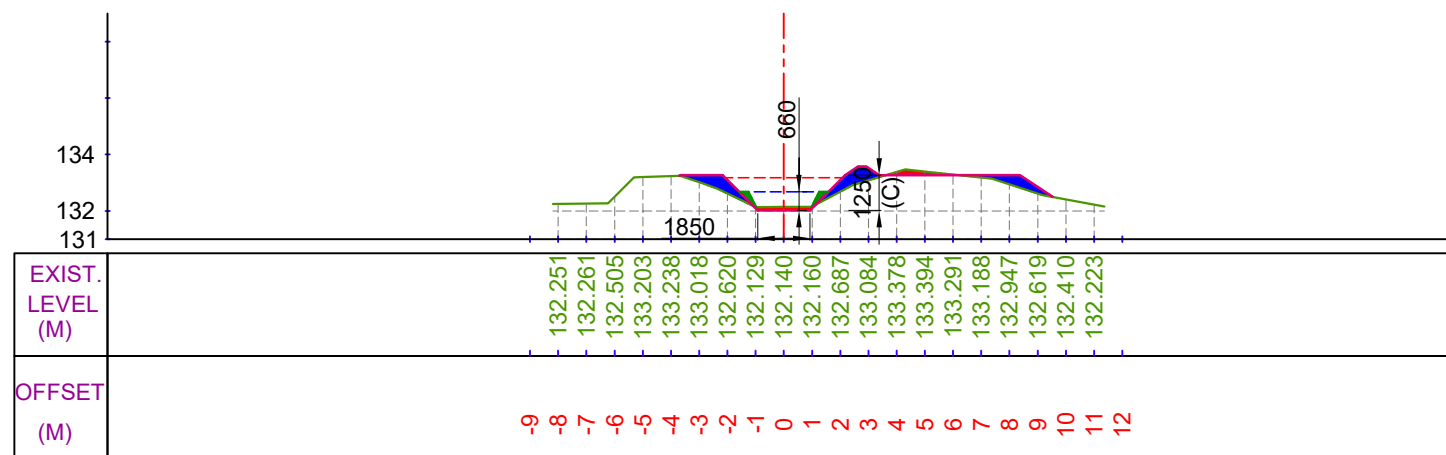
CUTTING AREA (SQ.M) = 0.608
FILLING AREA (SQ.M) = 1.823

CH. (KM):- 0+900
DESIGNED BED LEVEL = 132.052 M



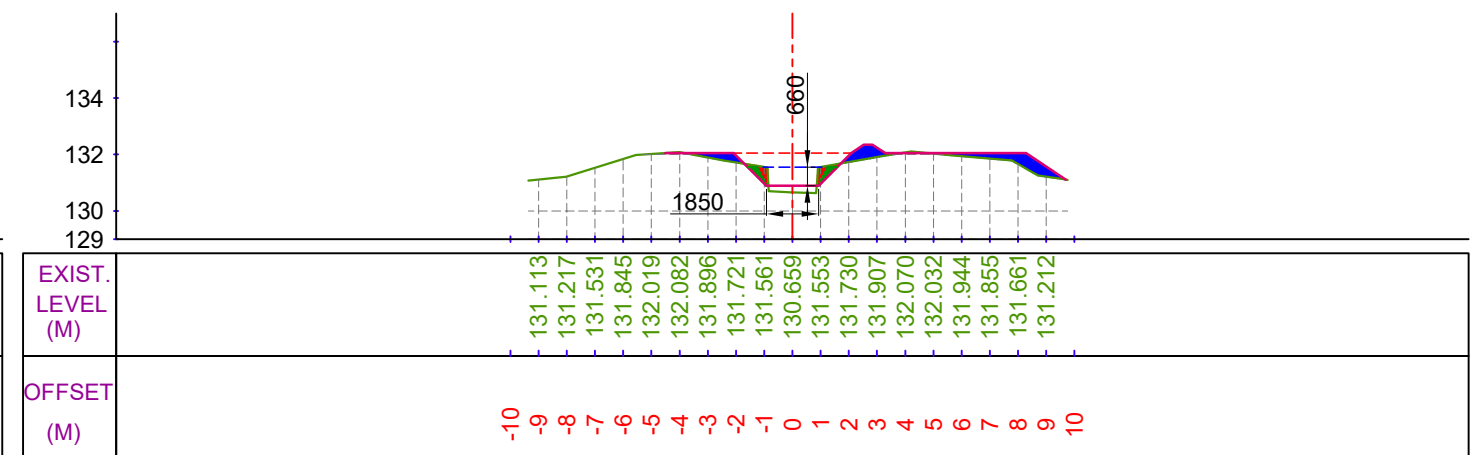
CUTTING AREA (SQ.M) = 0.120
FILLING AREA (SQ.M) = 5.584

CH. (KM):- 1+100
DESIGNED BED LEVEL = 131.989 M



CUTTING AREA (SQ.M) = 0.477
FILLING AREA (SQ.M) = 2.174

CH. (KM):- 1+000
DESIGNED BED LEVEL = 132.021 M



CUTTING AREA (SQ.M) = 0.394
FILLING AREA (SQ.M) = 1.973

CH. (KM):- 1+200
DESIGNED BED LEVEL = 130.891 M

LEGEND

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

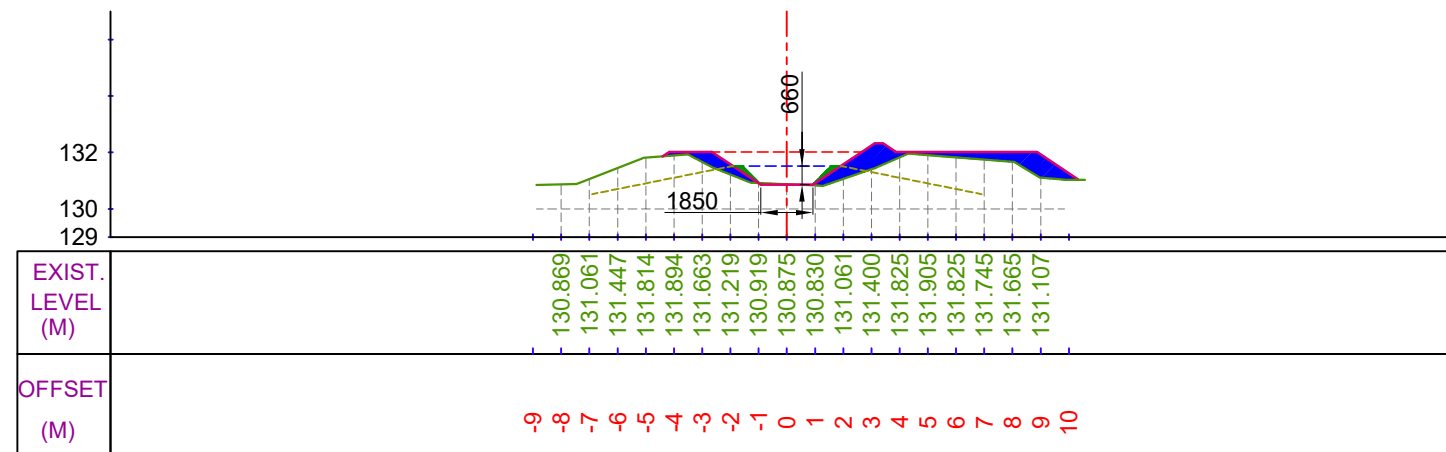
Prepared by :-

WAPCOS LTD.

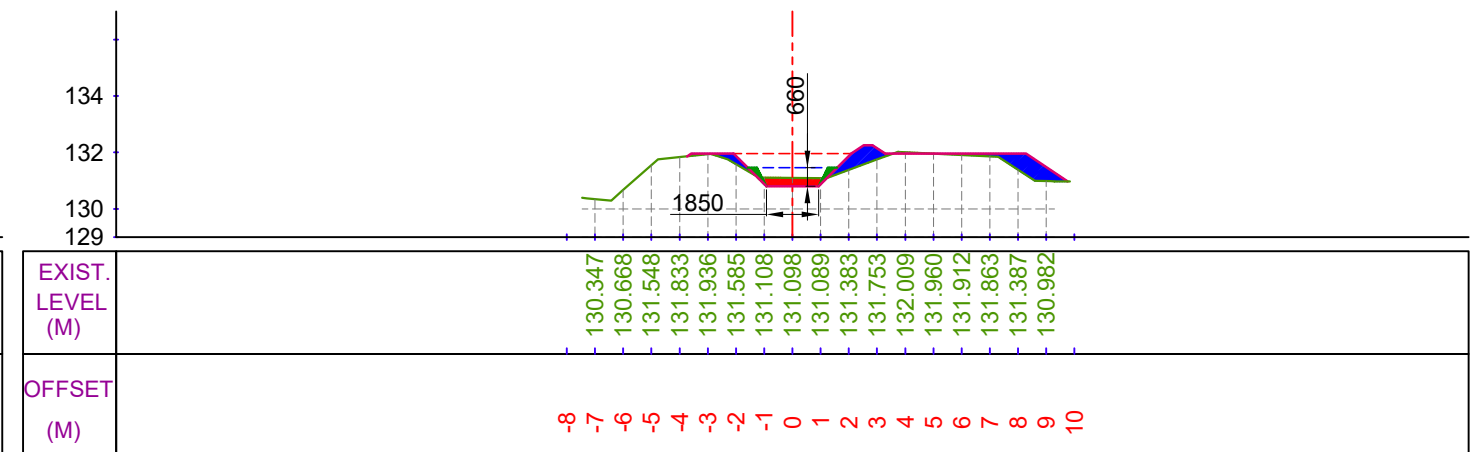


Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC- 3 of 23

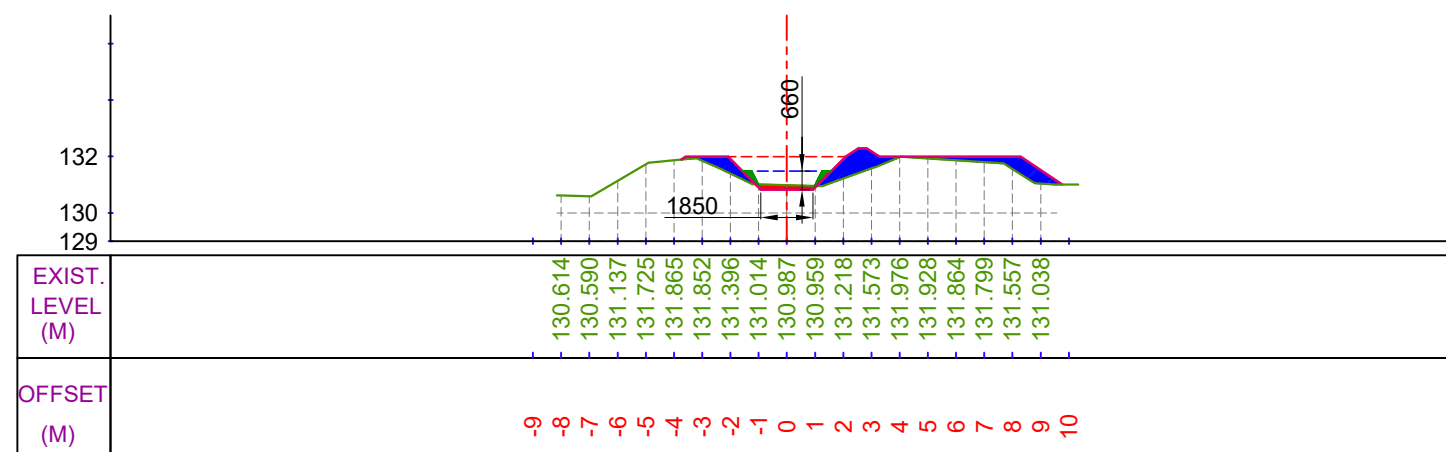
X SECTION OF SONDIH-II SUB-DY.



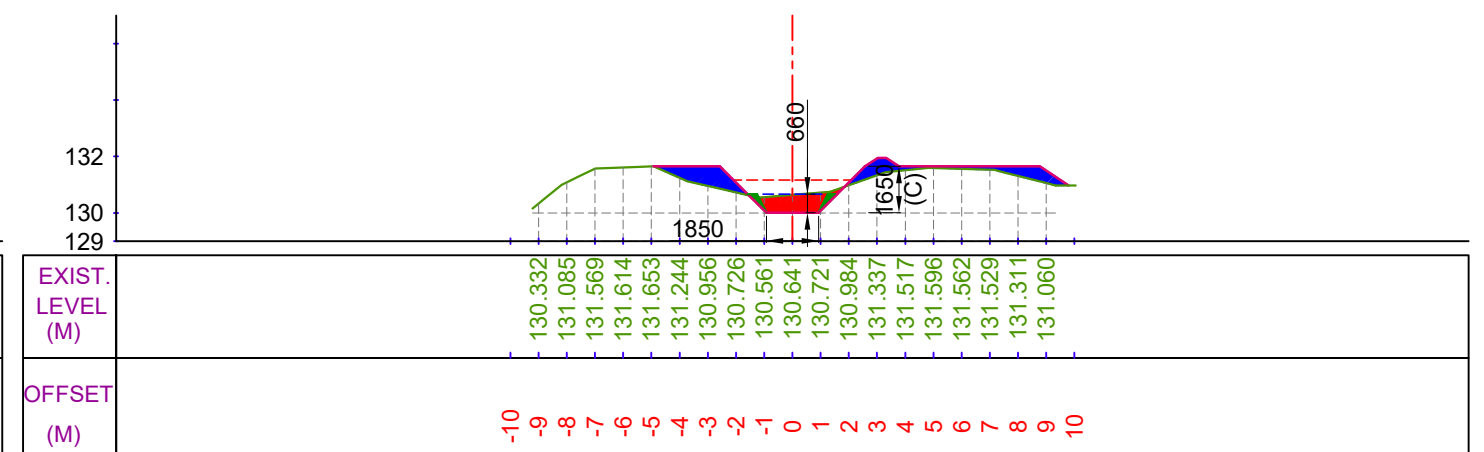
CUTTING AREA (SQ.M) = 0.037
FILLING AREA (SQ.M) = 4.486
CH. (KM):- 1+300
DESIGNED BED LEVEL = 130.860 M



CUTTING AREA (SQ.M) = 0.650
FILLING AREA (SQ.M) = 2.365
CH. (KM):- 1+500
DESIGNED BED LEVEL = 130.797 M



CUTTING AREA (SQ.M) = 0.304
FILLING AREA (SQ.M) = 3.317
CH. (KM):- 1+400
DESIGNED BED LEVEL = 130.829 M



CUTTING AREA (SQ.M) = 1.448
FILLING AREA (SQ.M) = 3.390
CH. (KM):- 1+600
DESIGNED BED LEVEL = 130.004 M

LEGEND

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

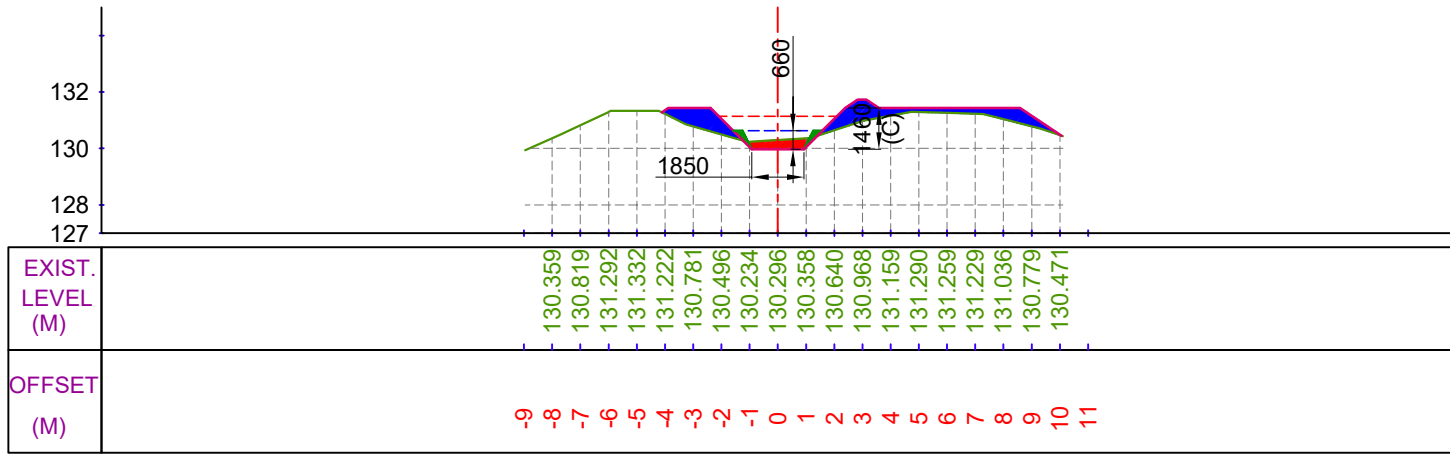
Prepared by :-

WAPCOS LTD.



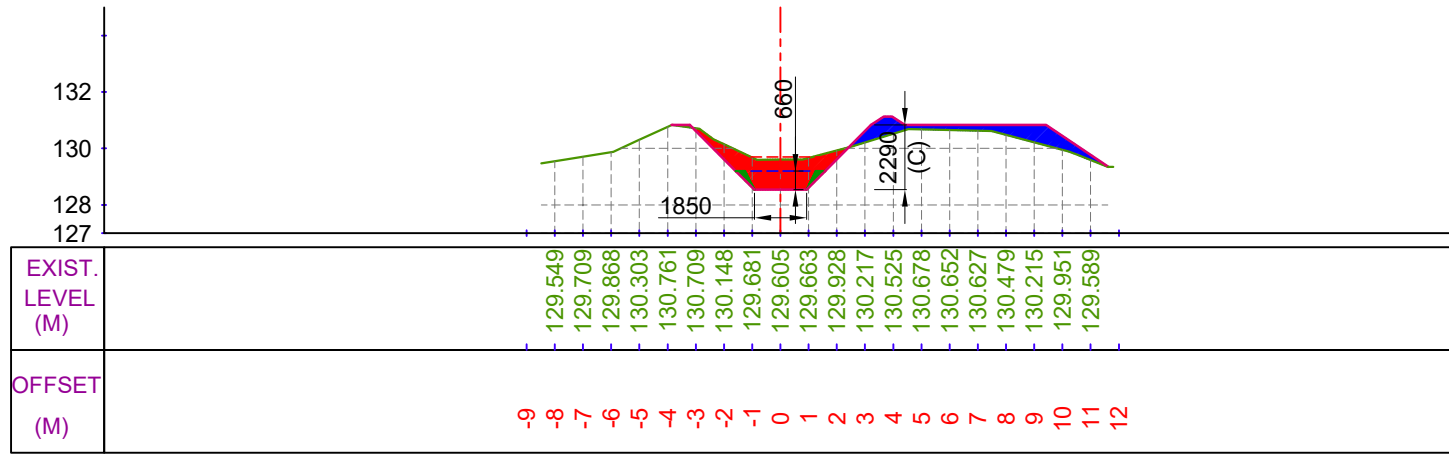
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC- 4 of 23

X SECTION OF SONDIH-II SUB-DY.



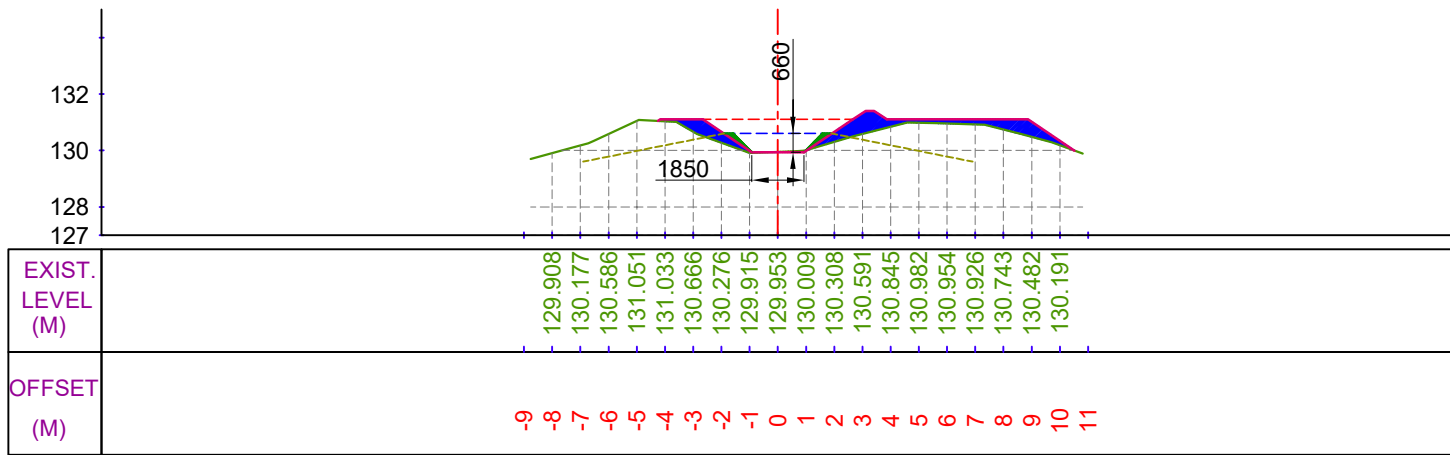
CUTTING AREA (SQ.M) = 0.651
FILLING AREA (SQ.M) = 4.129

CH. (KM):- 1+700
DESIGNED BED LEVEL = 129.973 M



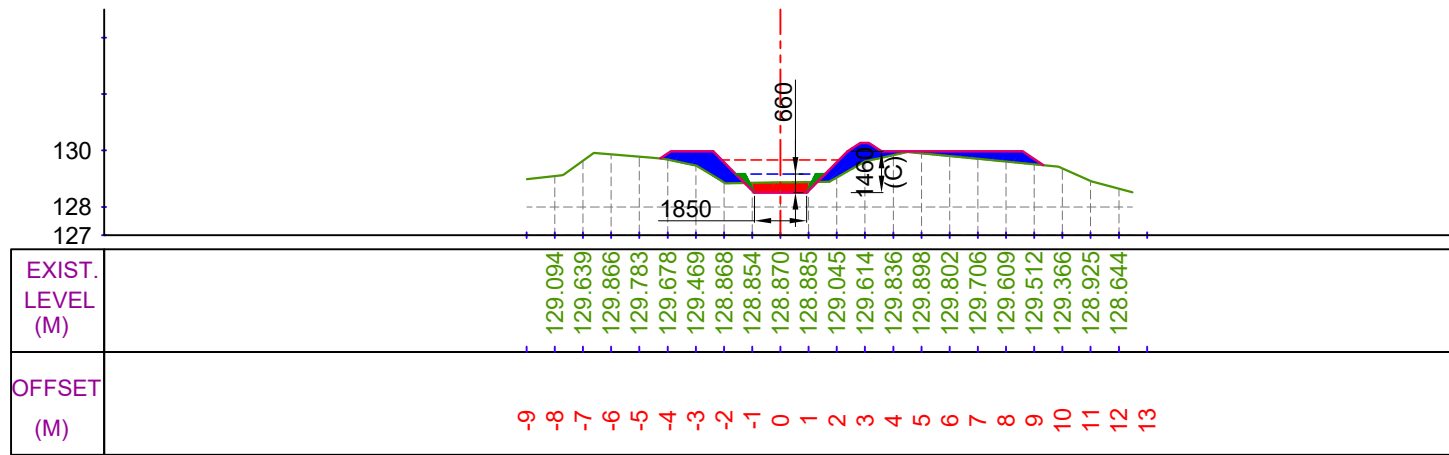
CUTTING AREA (SQ.M) = 3.796
FILLING AREA (SQ.M) = 3.079

CH. (KM):- 1+900
DESIGNED BED LEVEL = 128.538 M



CUTTING AREA (SQ.M) = 0.030
FILLING AREA (SQ.M) = 3.763

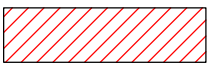
CH. (KM):- 1+800
DESIGNED BED LEVEL = 129.942 M



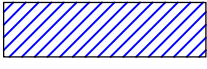
CUTTING AREA (SQ.M) = 0.737
FILLING AREA (SQ.M) = 3.730

CH. (KM):- 2+000
DESIGNED BED LEVEL = 128.507 M

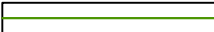
LEGEND



CUT AREA



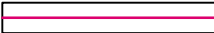
FILL AREA



EXISTING BED LINE



F.S.L.



DESIGNED BED LINE



H.G. LINE

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

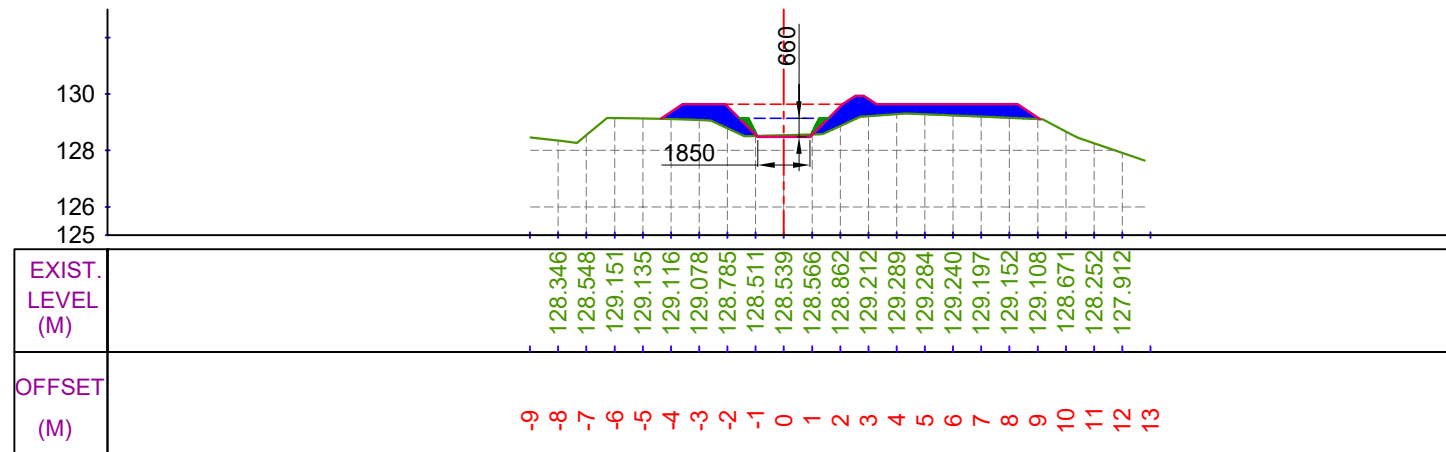
X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-

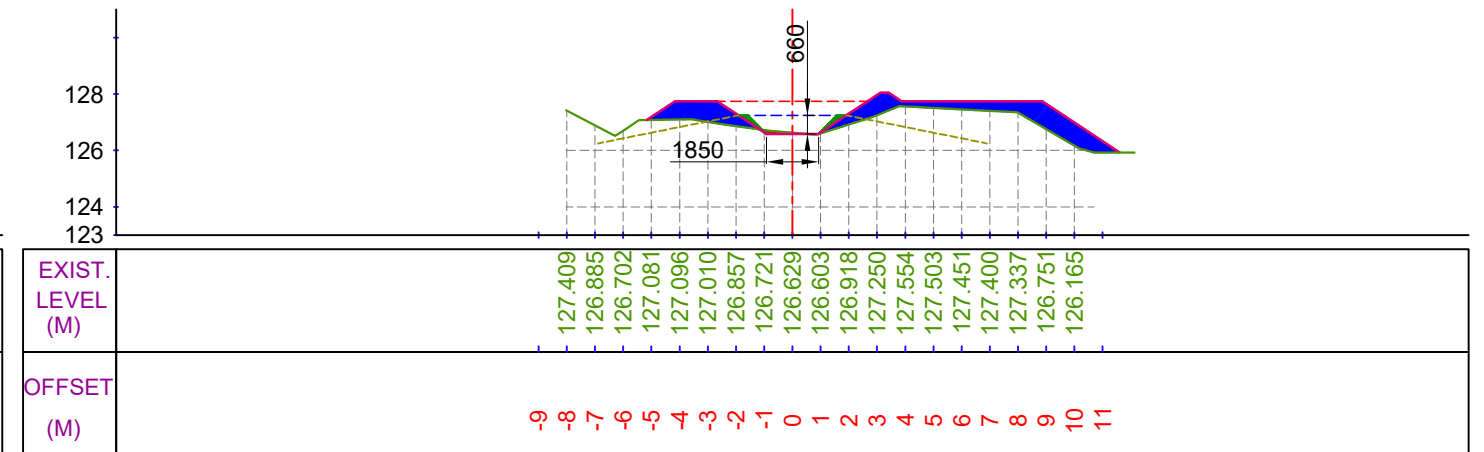
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X SECTION OF SONDIH-II SUB-DY.



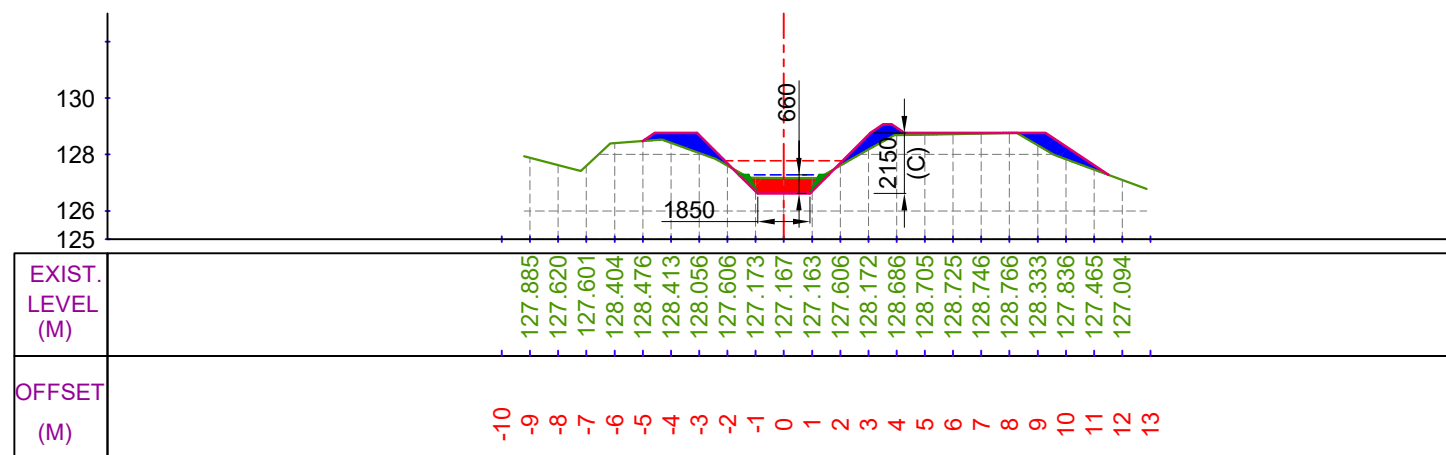
CUTTING AREA (SQ.M) = 0.118
FILLING AREA (SQ.M) = 5.118

CH. (KM):- 2+100
DESIGNED BED LEVEL = 128.476 M



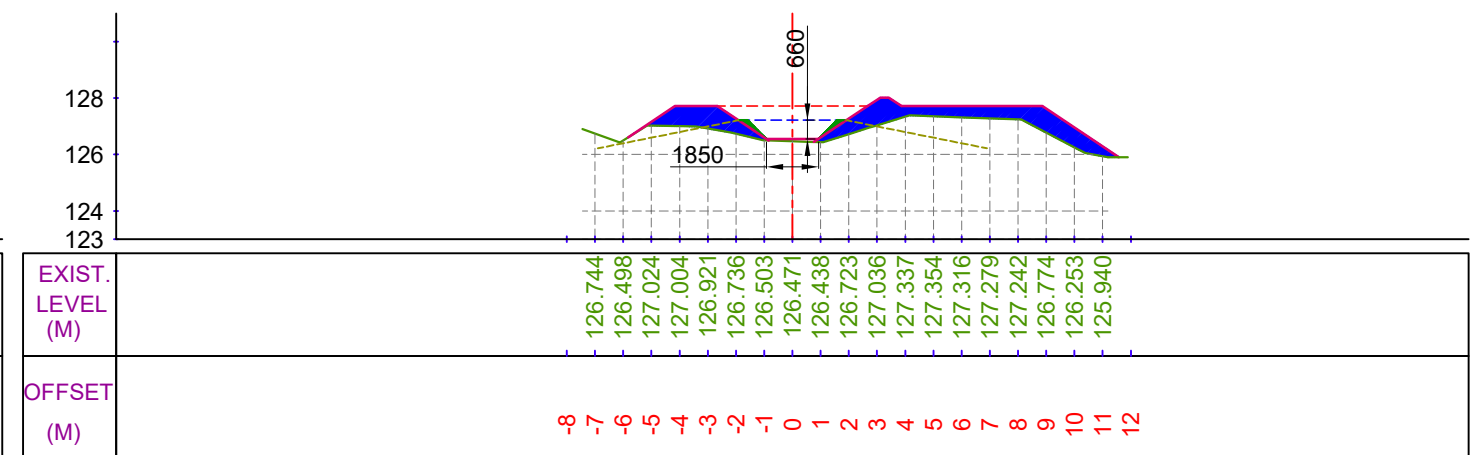
CUTTING AREA (SQ.M) = 0.098
FILLING AREA (SQ.M) = 6.733

CH. (KM):- 2+300
DESIGNED BED LEVEL = 126.585 M



CUTTING AREA (SQ.M) = 1.204
FILLING AREA (SQ.M) = 3.137

CH. (KM):- 2+200
DESIGNED BED LEVEL = 126.617 M



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 7.338

CH. (KM):- 2+400
DESIGNED BED LEVEL = 126.554 M

LEGEND



CUT AREA



FILL AREA



EXISTING BED LINE



F.S.L.



DESIGNED BED LINE



H.G. LINE

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

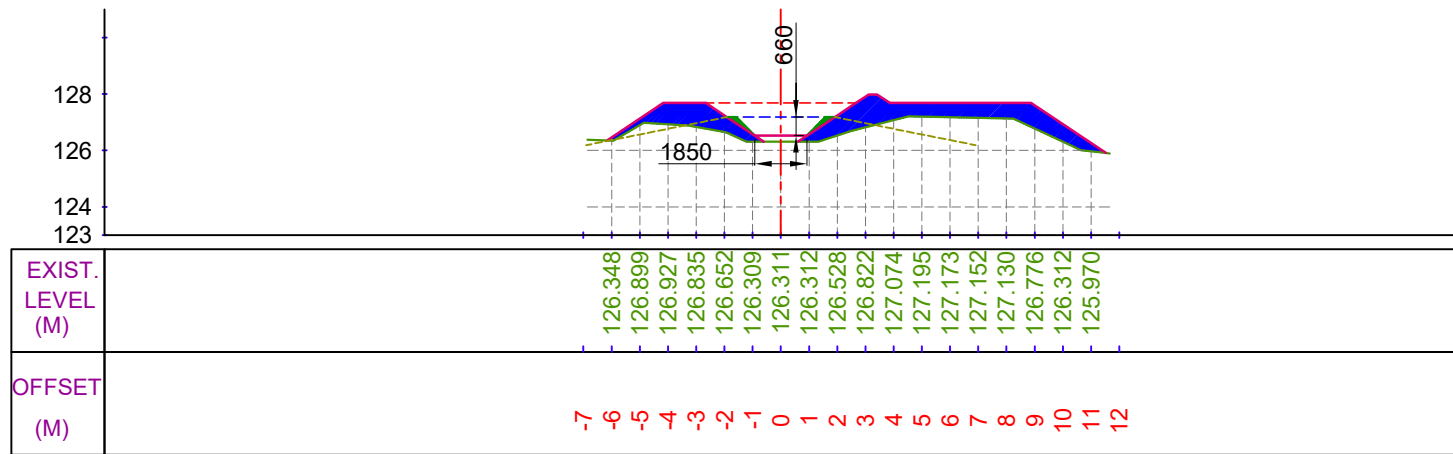
X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-

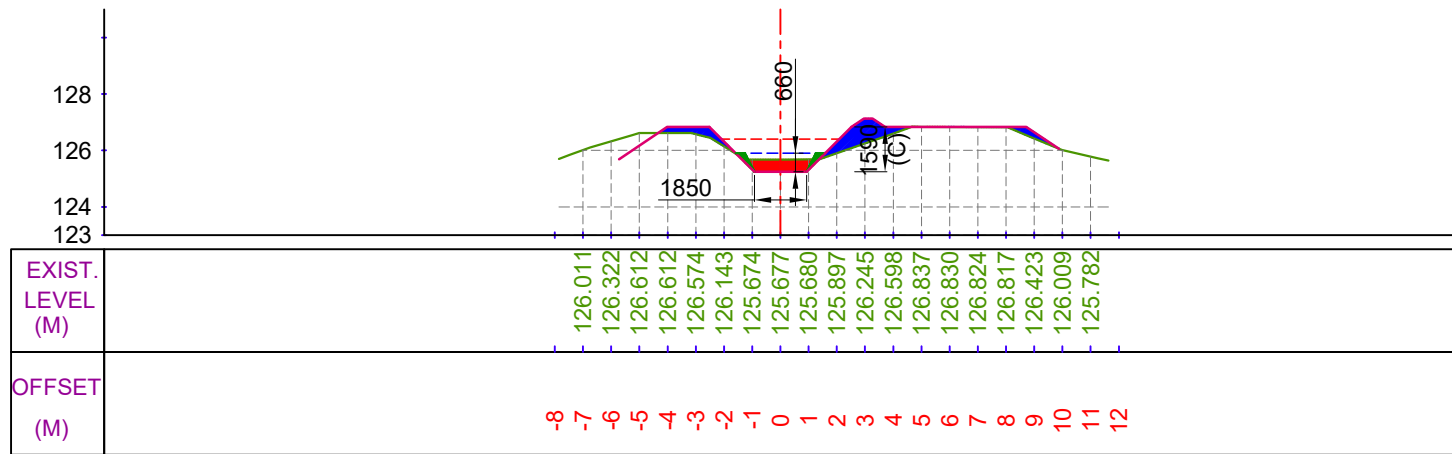
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X SECTION OF SONDIH-II SUB-DY.



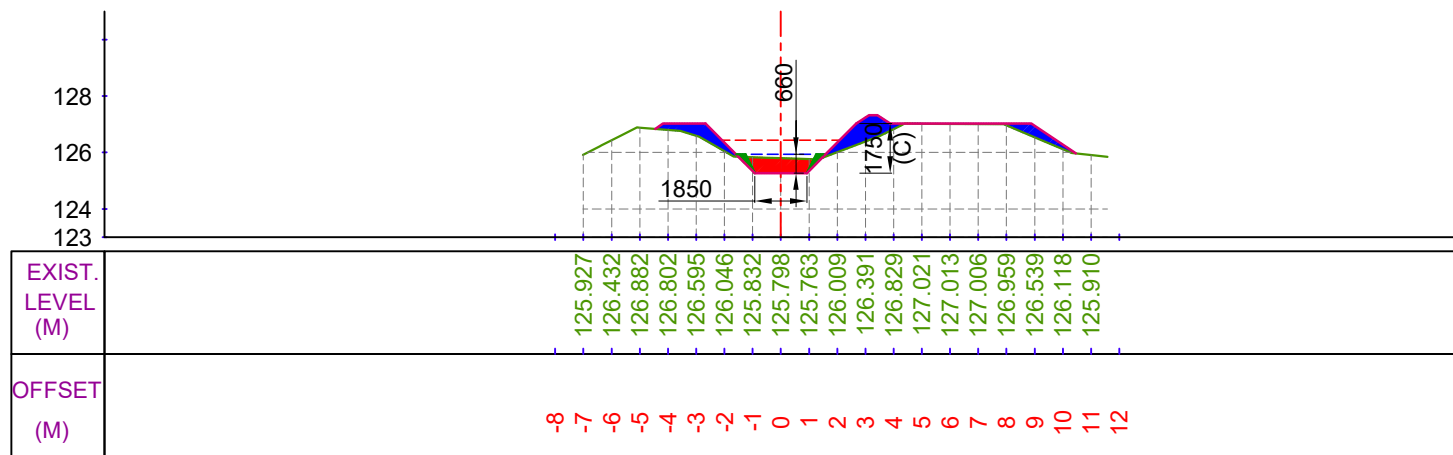
CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 9.217

CH. (KM):- 2+500
DESIGNED BED LEVEL = 126.523 M



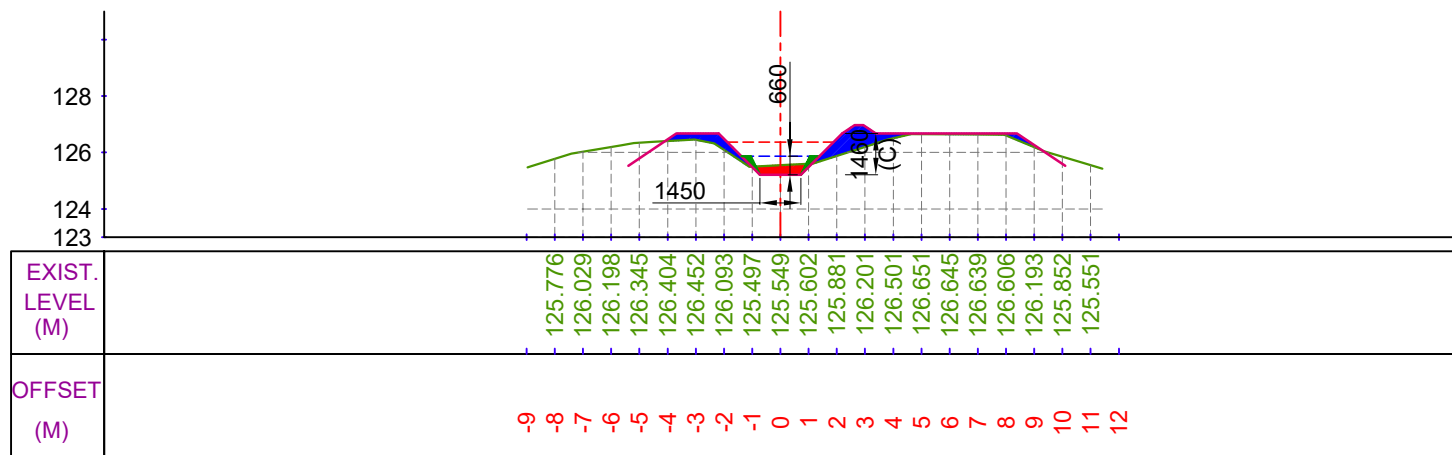
CUTTING AREA (SQ.M) = 0.907
FILLING AREA (SQ.M) = 2.349

CH. (KM):- 2+700
DESIGNED BED LEVEL = 125.241 M



CUTTING AREA (SQ.M) = 1.109
FILLING AREA (SQ.M) = 2.927

CH. (KM):- 2+600
DESIGNED BED LEVEL = 125.273 M



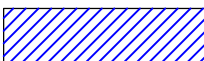
CUTTING AREA (SQ.M) = 0.551
FILLING AREA (SQ.M) = 2.477

CH. (KM):- 2+800
DESIGNED BED LEVEL = 125.210 M

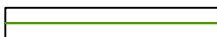
LEGEND



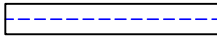
CUT AREA



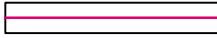
FILL AREA



EXISTING BED LINE



F.S.L.



DESIGNED BED LINE



H.G. LINE

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

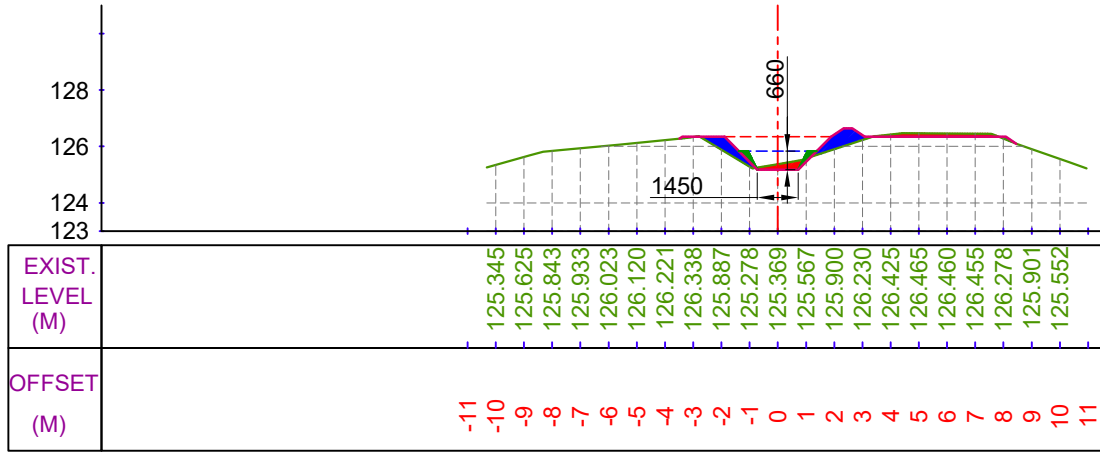
X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

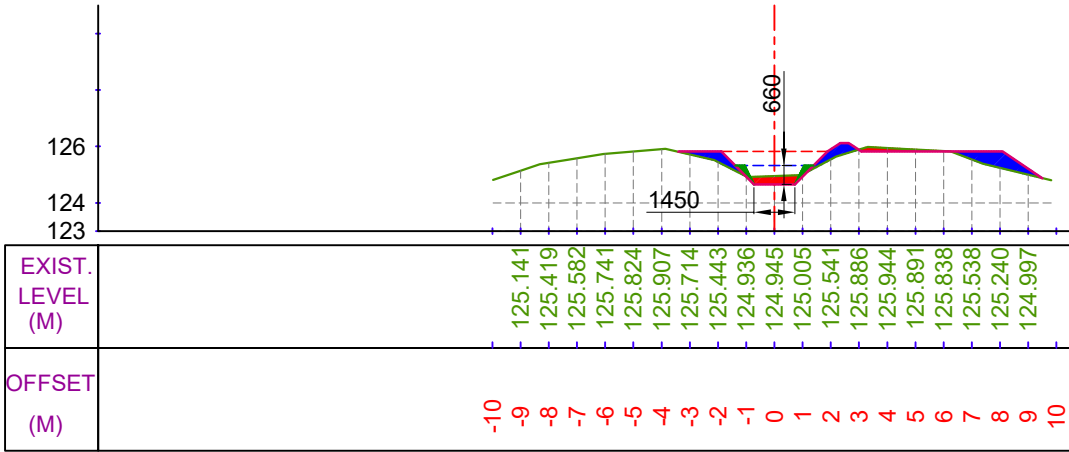
WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-

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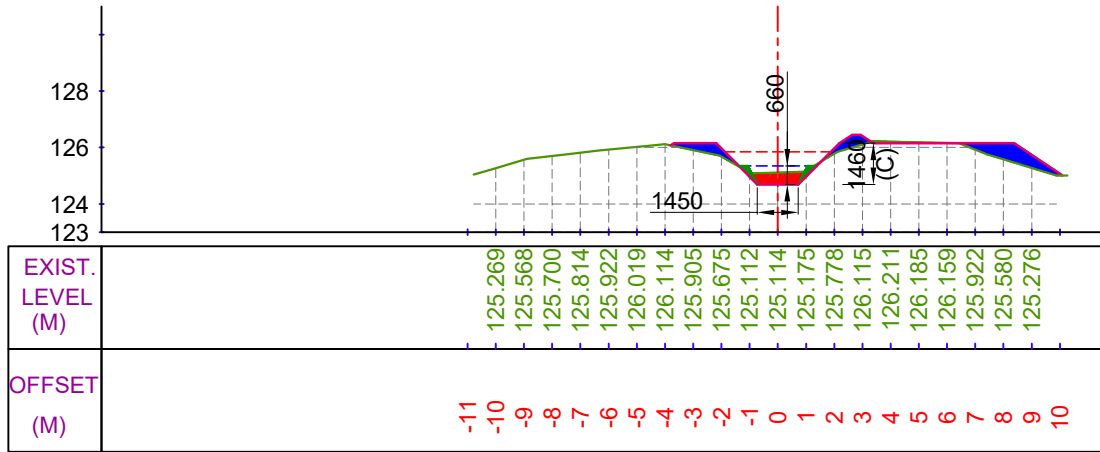
X SECTION OF SONDIH-II SUB-DY.



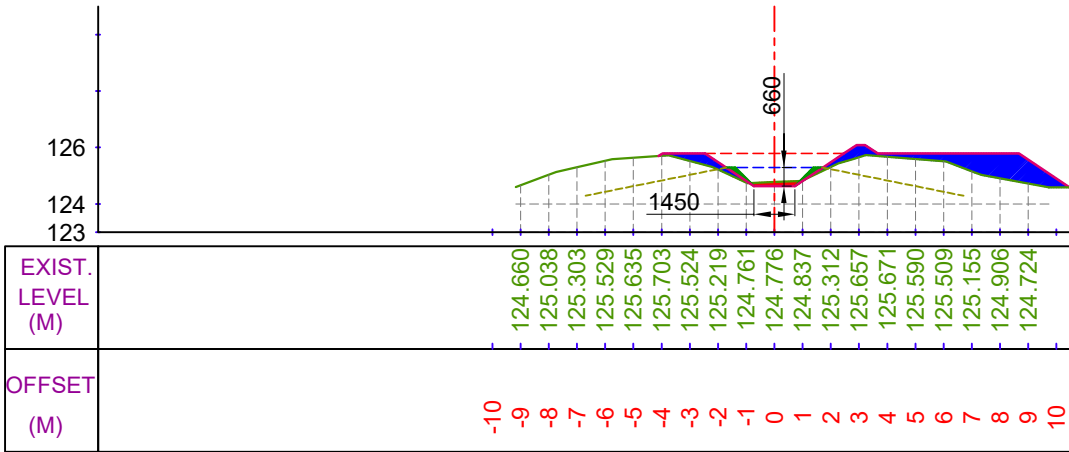
CUTTING AREA (SQ.M) = 0.782
FILLING AREA (SQ.M) = 1.341
CH. (KM):- 2+900
DESIGNED BED LEVEL = 125.179 M



CUTTING AREA (SQ.M) = 0.734
FILLING AREA (SQ.M) = 1.979
CH. (KM):- 3+100
DESIGNED BED LEVEL = 124.659 M

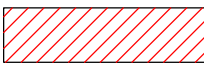


CUTTING AREA (SQ.M) = 0.824
FILLING AREA (SQ.M) = 2.352
CH. (KM):- 3+000
DESIGNED BED LEVEL = 124.691 M

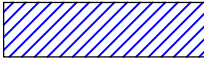


CUTTING AREA (SQ.M) = 0.238
FILLING AREA (SQ.M) = 4.451
CH. (KM):- 3+200
DESIGNED BED LEVEL = 124.628 M

LEGEND



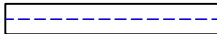
CUT AREA



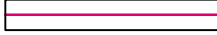
FILL AREA



EXISTING BED LINE



F.S.L.



DESIGNED BED LINE



H.G. LINE

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

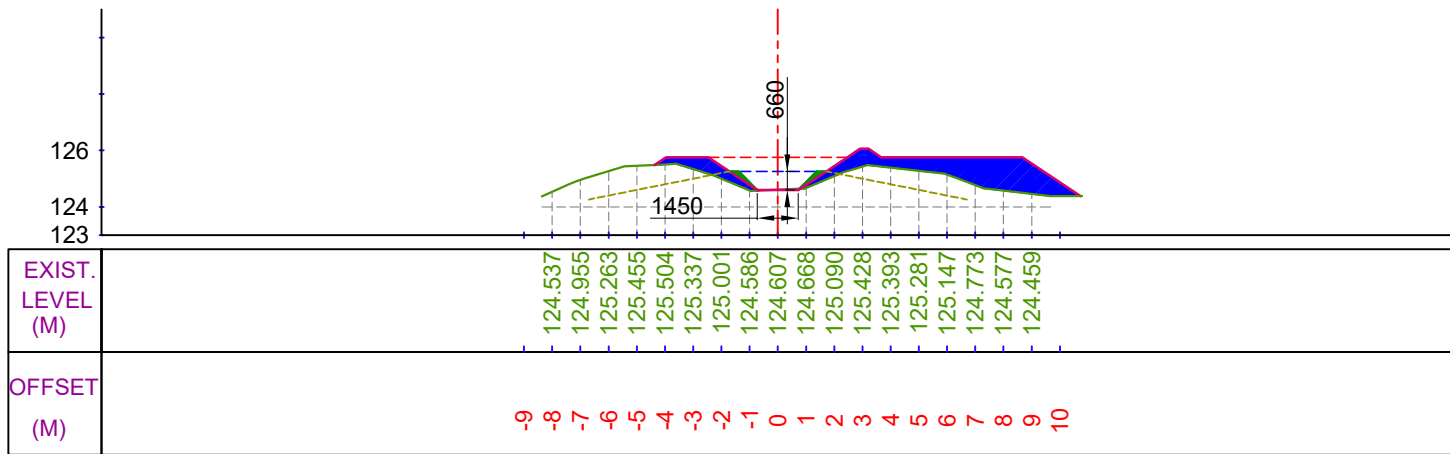
X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

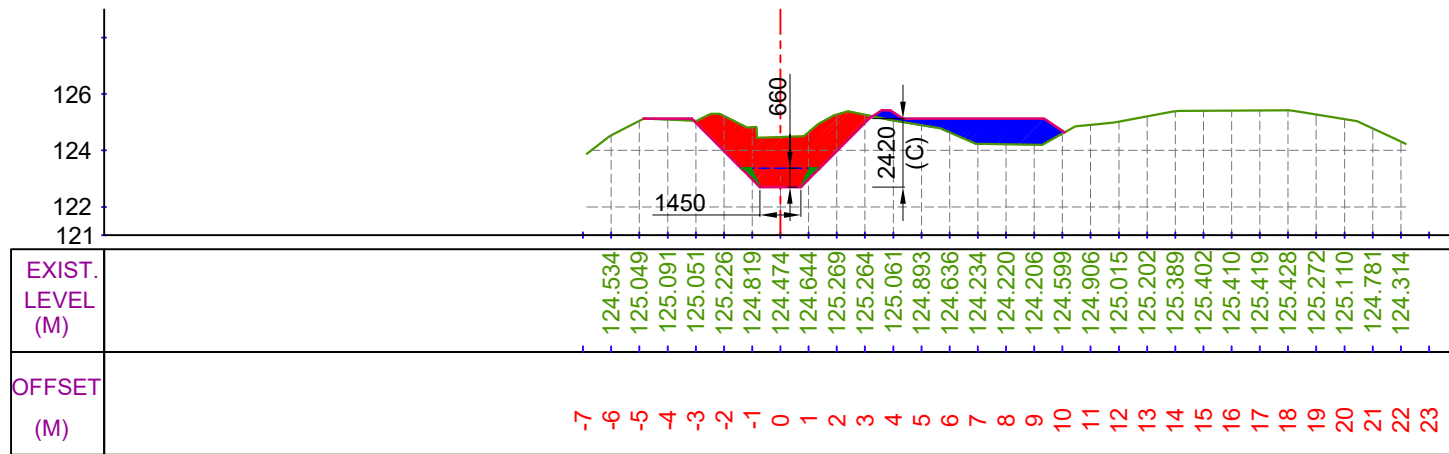
WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-

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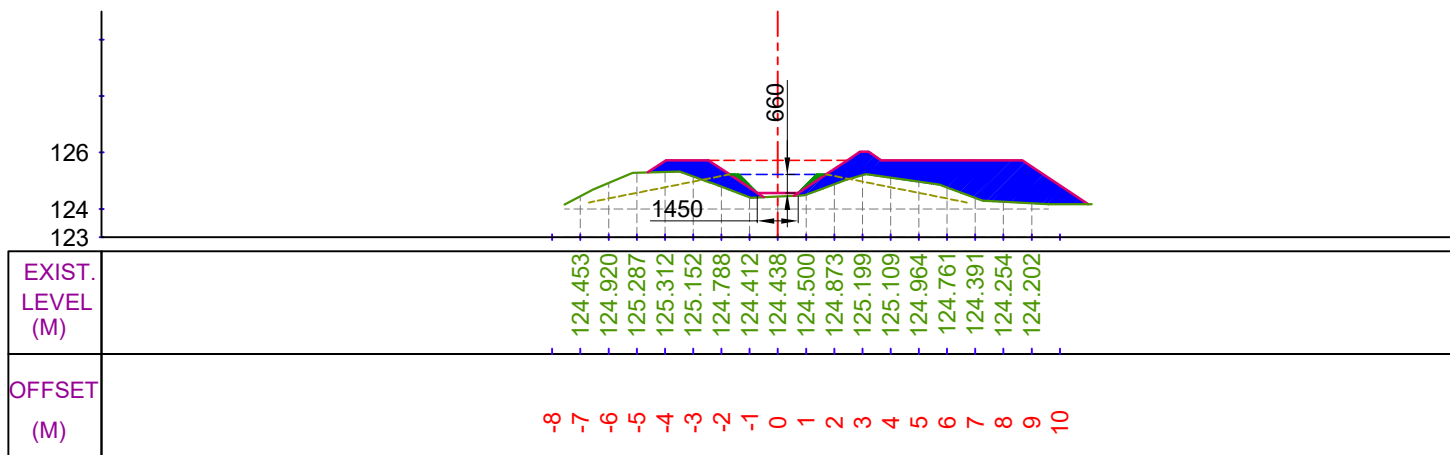
X SECTION OF SONDIH-II SUB-DY.



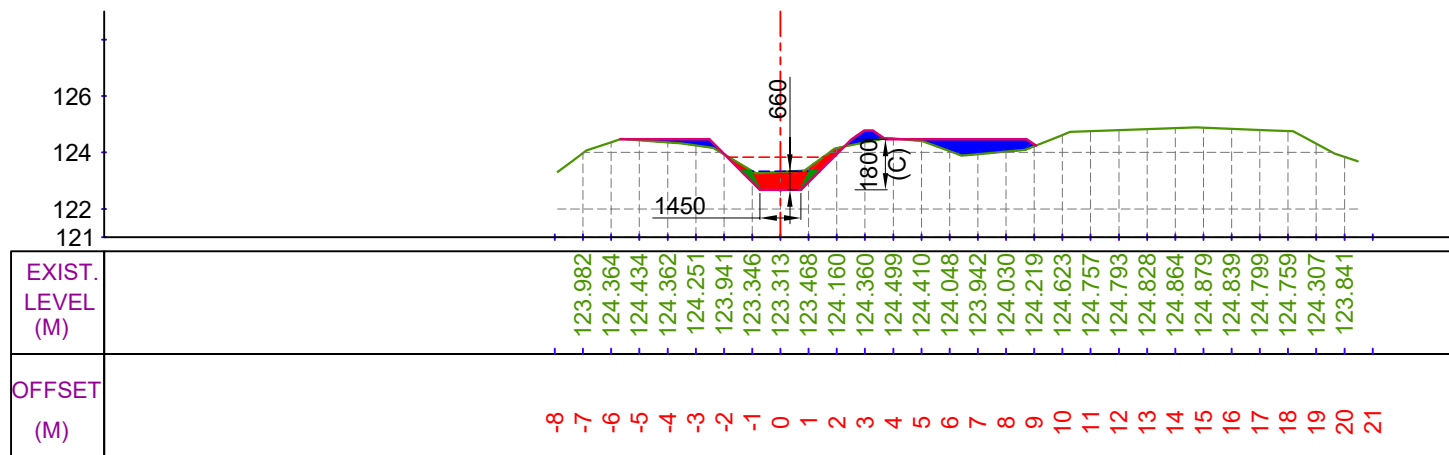
CUTTING AREA (SQ.M) = 0.021
FILLING AREA (SQ.M) = 7.427
CH. (KM):- 3+300
DESIGNED BED LEVEL = 124.597 M



CUTTING AREA (SQ.M) = 7.974
FILLING AREA (SQ.M) = 3.896
CH. (KM):- 3+500
DESIGNED BED LEVEL = 122.704 M



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 10.549
CH. (KM):- 3+400
DESIGNED BED LEVEL = 124.566 M



CUTTING AREA (SQ.M) = 1.623
FILLING AREA (SQ.M) = 2.431
CH. (KM):- 3+600
DESIGNED BED LEVEL = 122.673 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 :-

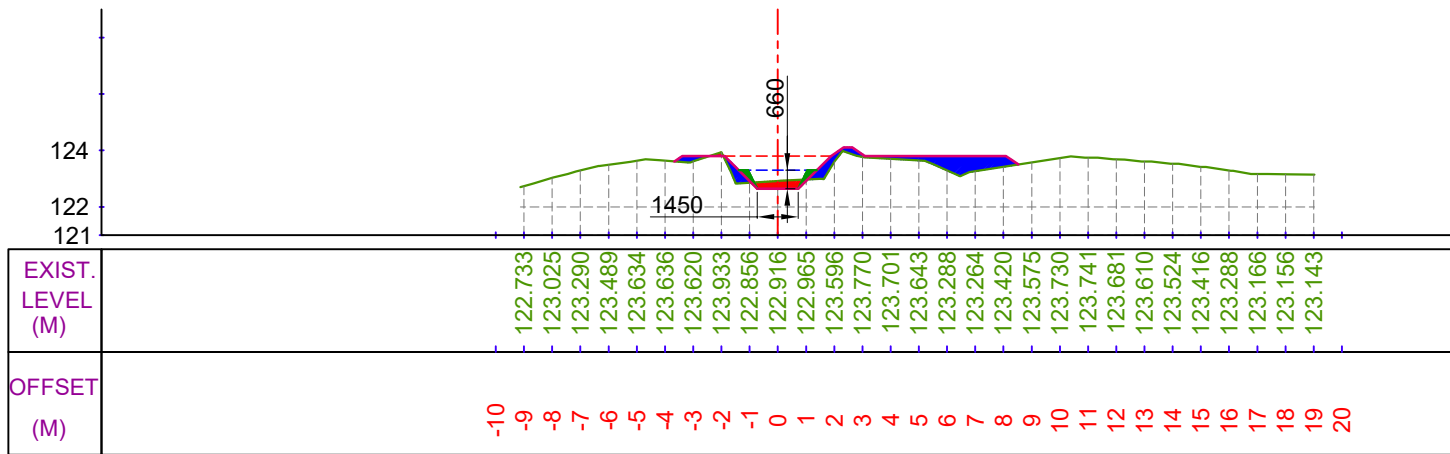
X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

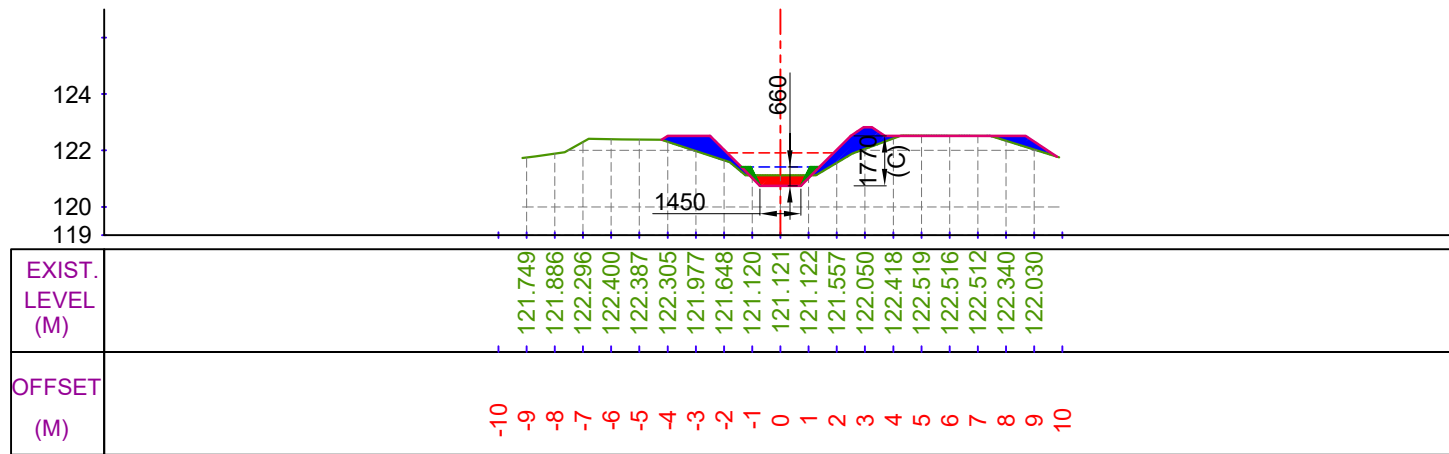
WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-

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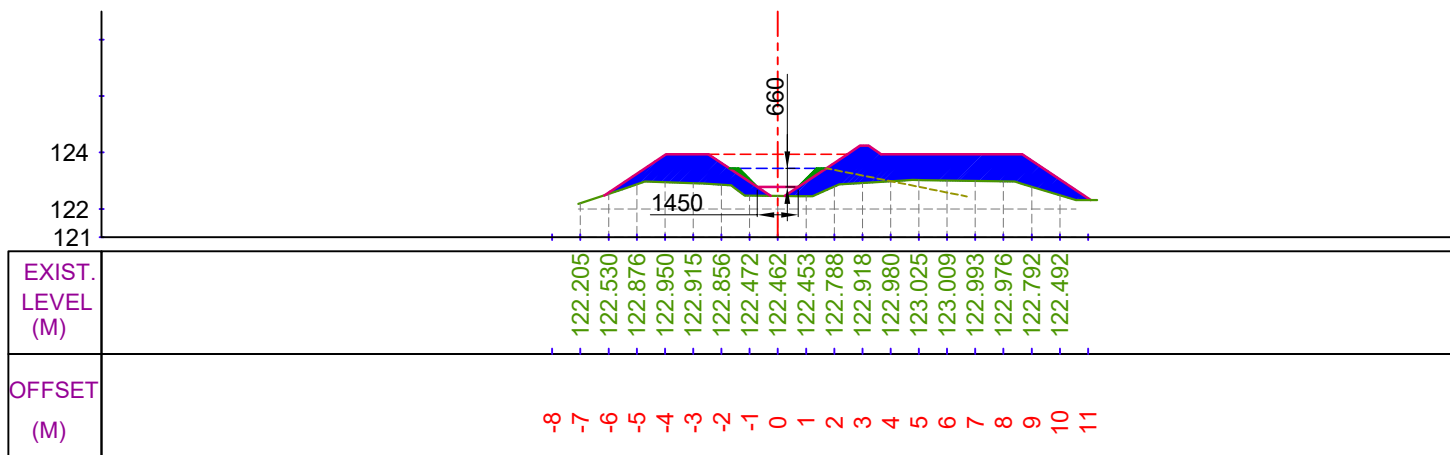
X SECTION OF SONDIH-II SUB-DY.



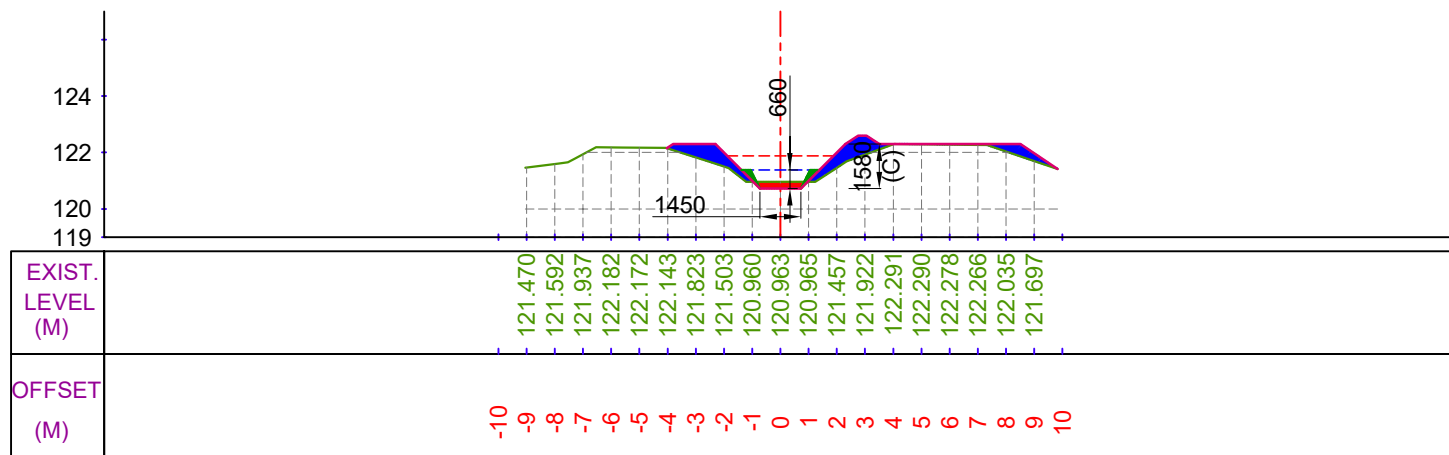
CUTTING AREA (SQ.M) = 0.464
FILLING AREA (SQ.M) = 2.651
CH. (KM):- 3+700
DESIGNED BED LEVEL = 122.642 M



CUTTING AREA (SQ.M) = 0.610
FILLING AREA (SQ.M) = 2.979
CH. (KM):- 3+900
DESIGNED BED LEVEL = 120.749 M



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 12.584
CH. (KM):- 3+800
DESIGNED BED LEVEL = 120.781 M

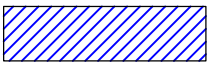


CUTTING AREA (SQ.M) = 0.386
FILLING AREA (SQ.M) = 3.091
CH. (KM):- 4+000
DESIGNED BED LEVEL = 120.718 M

LEGEND



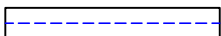
CUT AREA



FILL AREA



EXISTING BED LINE



F.S.L.



DESIGNED BED LINE



H.G. LINE

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

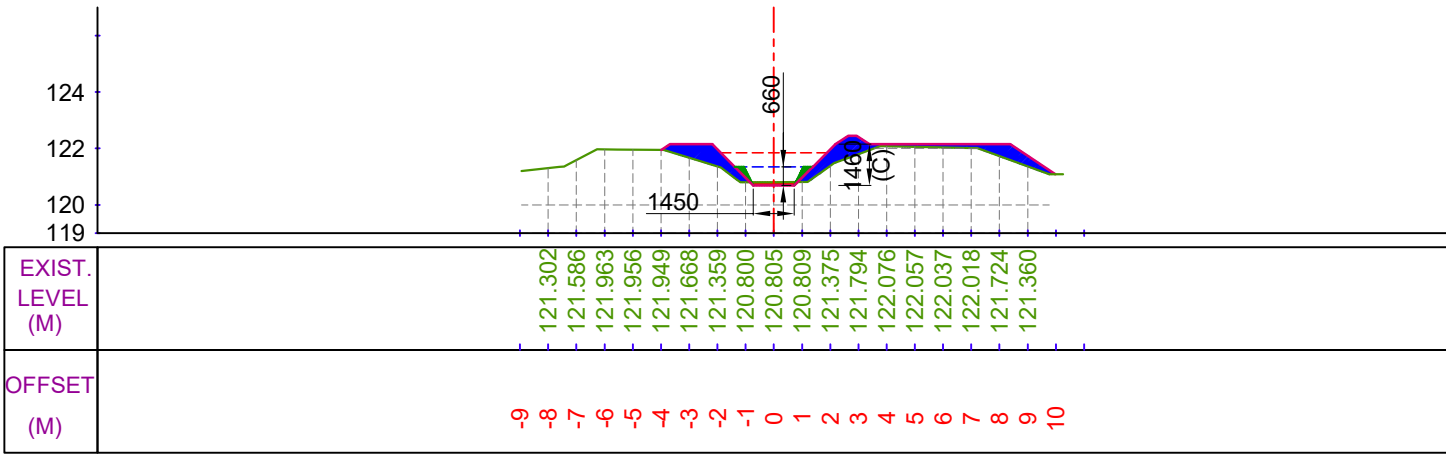
X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

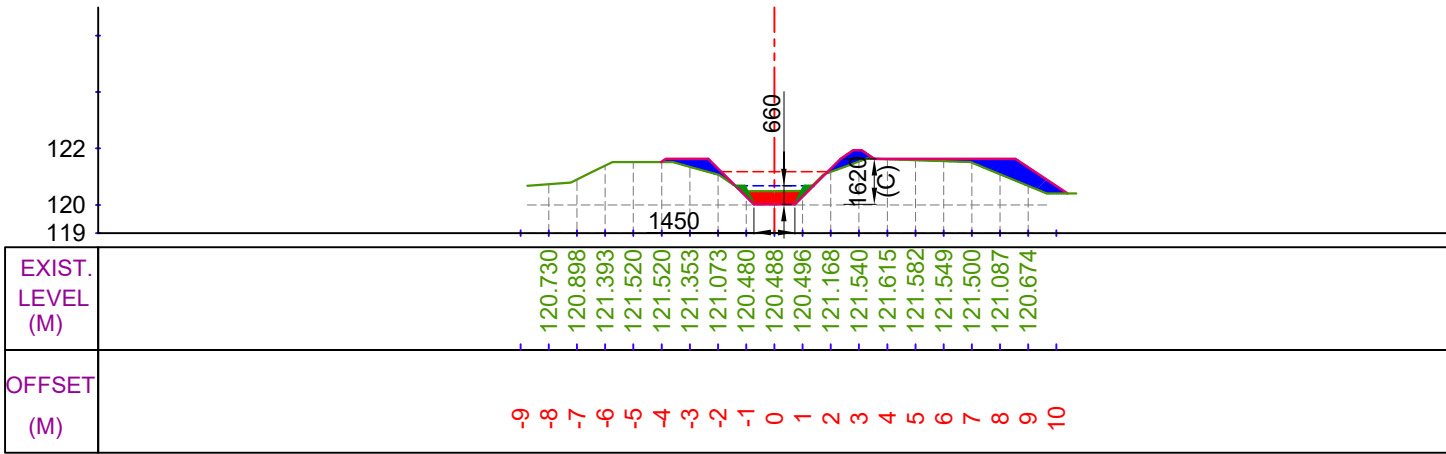
WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-

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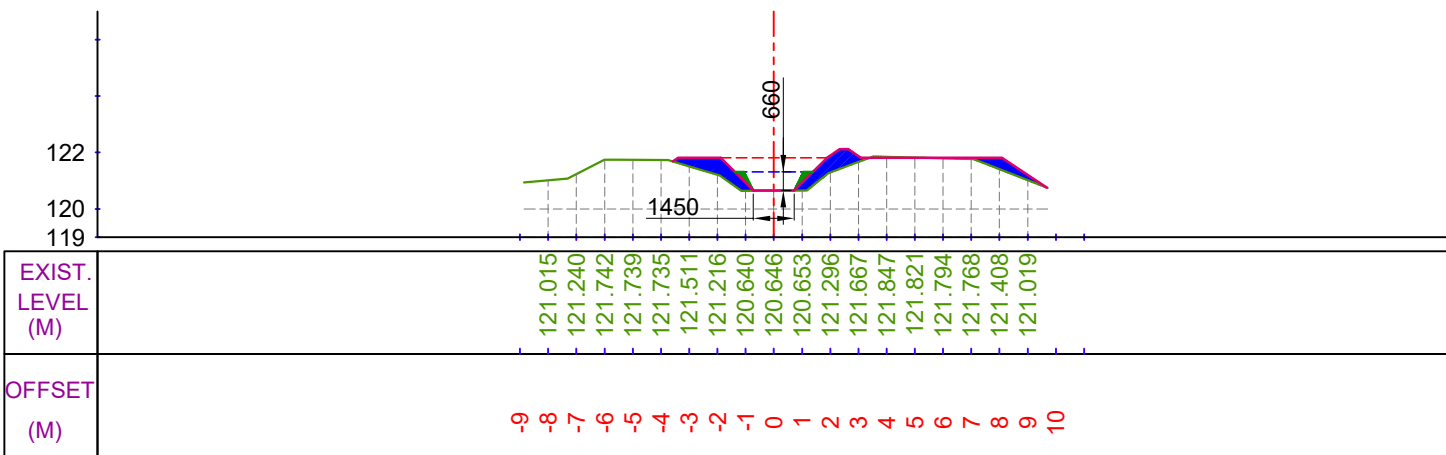
X SECTION OF SONDIH-II SUB-DY.



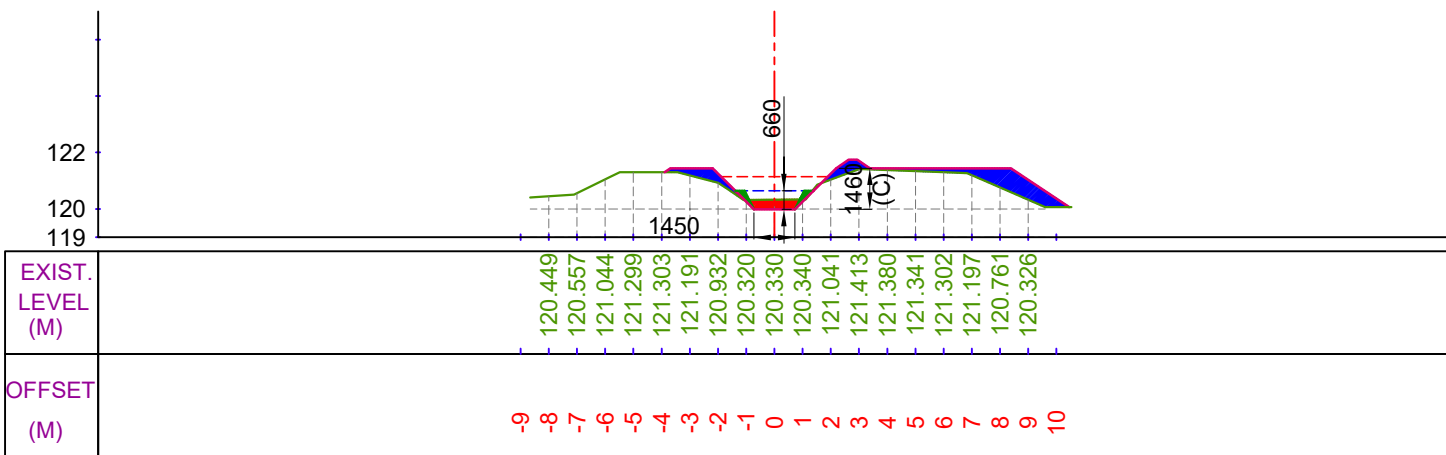
CUTTING AREA (SQ.M) = 0.178
FILLING AREA (SQ.M) = 3.946
CH. (KM):- 4+100
DESIGNED BED LEVEL = 120.687 M



CUTTING AREA (SQ.M) = 0.822
FILLING AREA (SQ.M) = 2.844
CH. (KM):- 4+300
DESIGNED BED LEVEL = 120.014 M



CUTTING AREA (SQ.M) = 0.039
FILLING AREA (SQ.M) = 2.904
CH. (KM):- 4+200
DESIGNED BED LEVEL = 120.656 M



CUTTING AREA (SQ.M) = 0.578
FILLING AREA (SQ.M) = 3.396
CH. (KM):- 4+400
DESIGNED BED LEVEL = 119.983 M

LEGEND

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

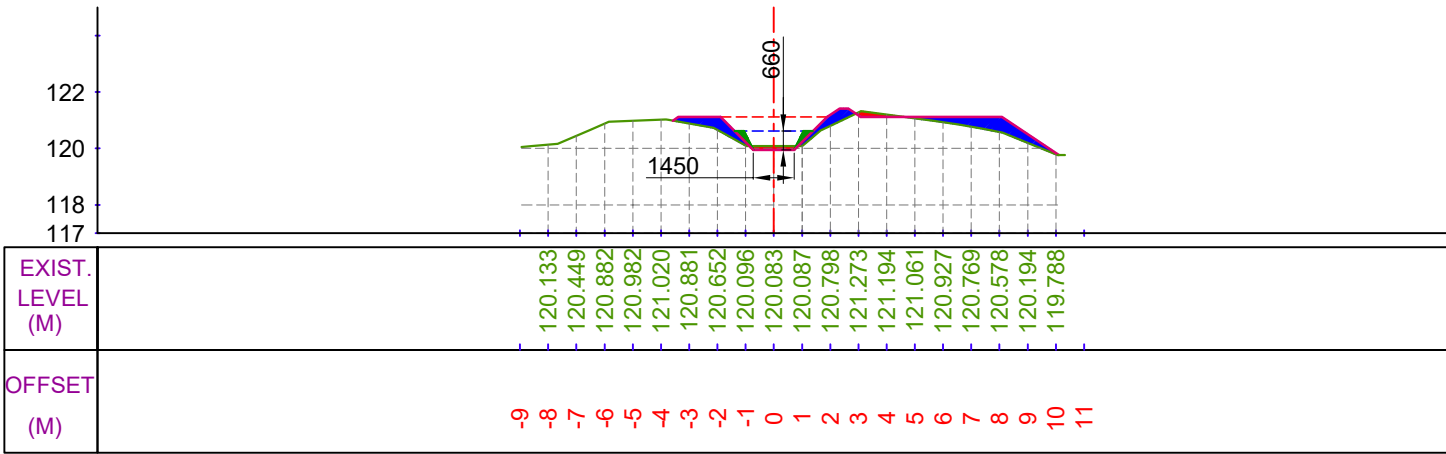
Prepared by :-

WAPCOS LTD.

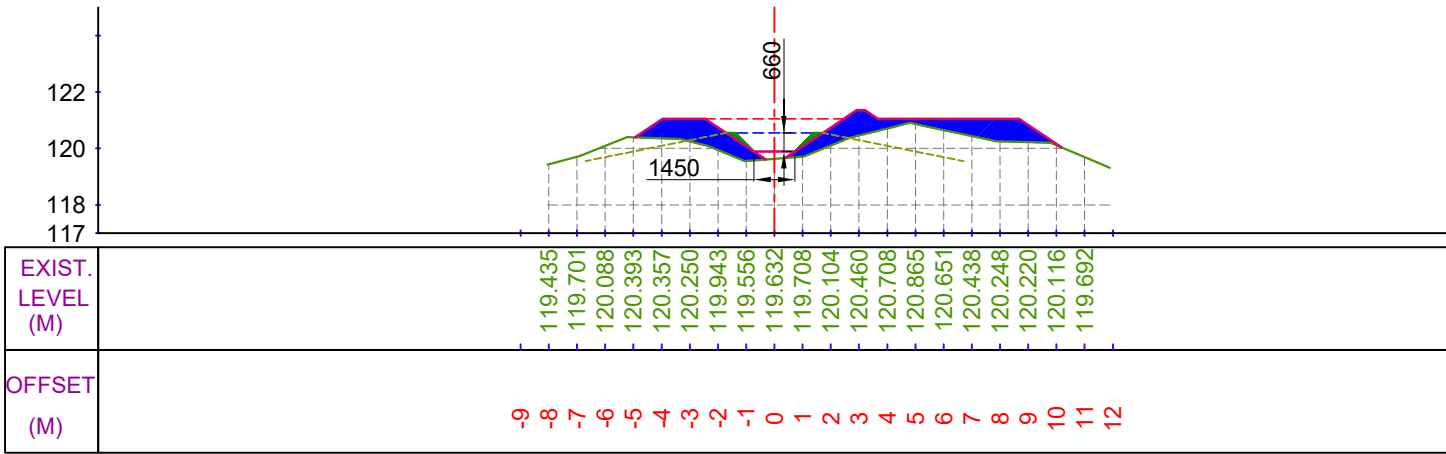


Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC- 11 of 23

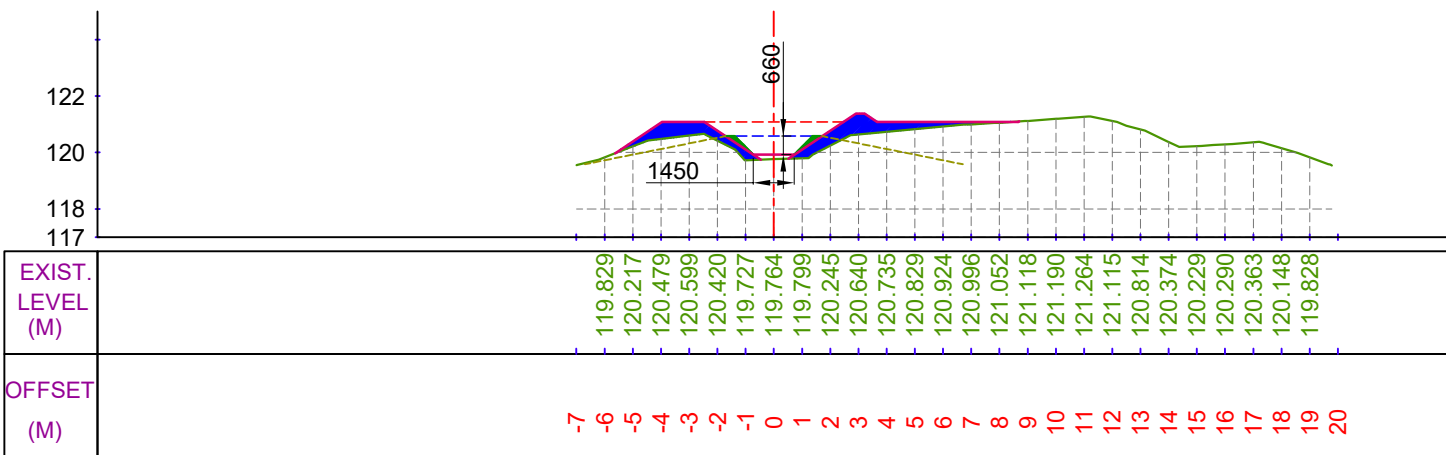
X SECTION OF SONDIH-II SUB-DY.



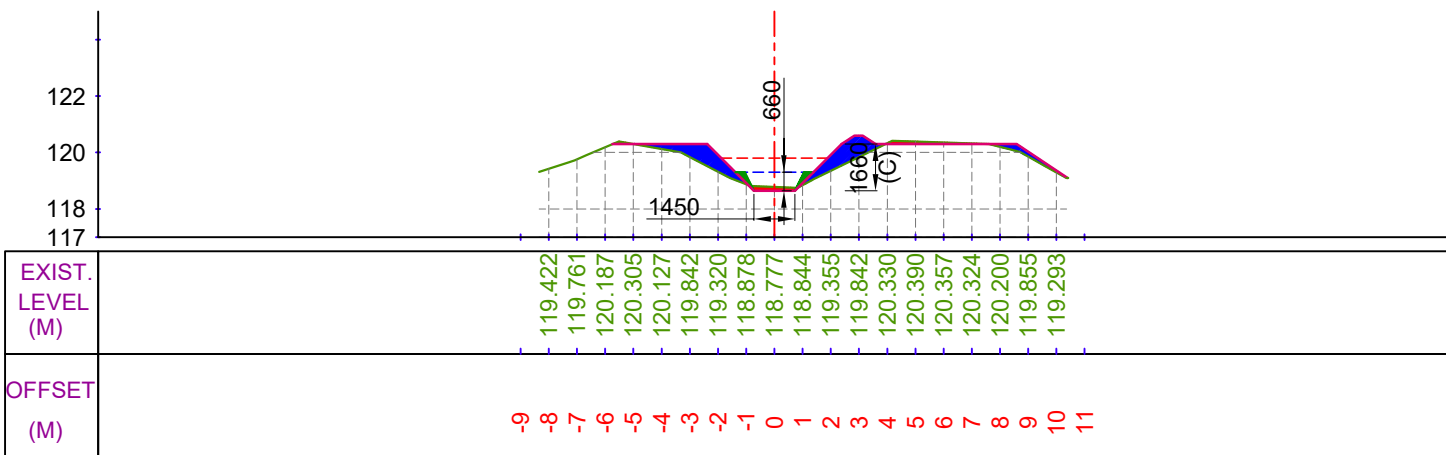
CUTTING AREA (SQ.M) = 0.372
FILLING AREA (SQ.M) = 2.767
CH. (KM):- 4+500
DESIGNED BED LEVEL = 119.952 M



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 7.549
CH. (KM):- 4+700
DESIGNED BED LEVEL = 119.889 M



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 4.107
CH. (KM):- 4+600
DESIGNED BED LEVEL = 119.921 M



CUTTING AREA (SQ.M) = 0.471
FILLING AREA (SQ.M) = 3.047
CH. (KM):- 4+800
DESIGNED BED LEVEL = 118.639 M

LEGEND

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

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

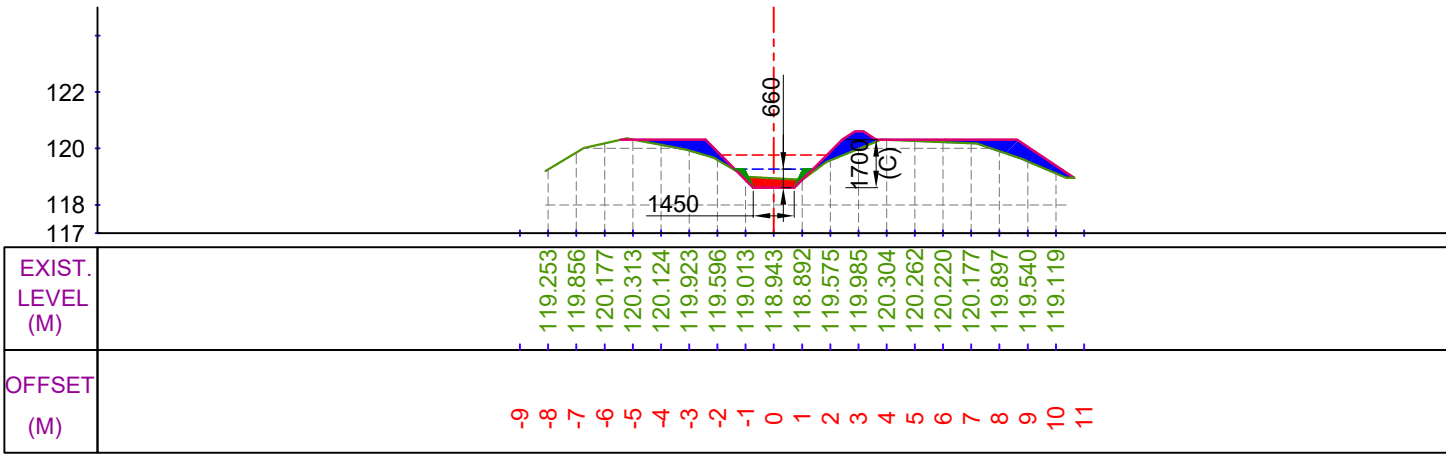
X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

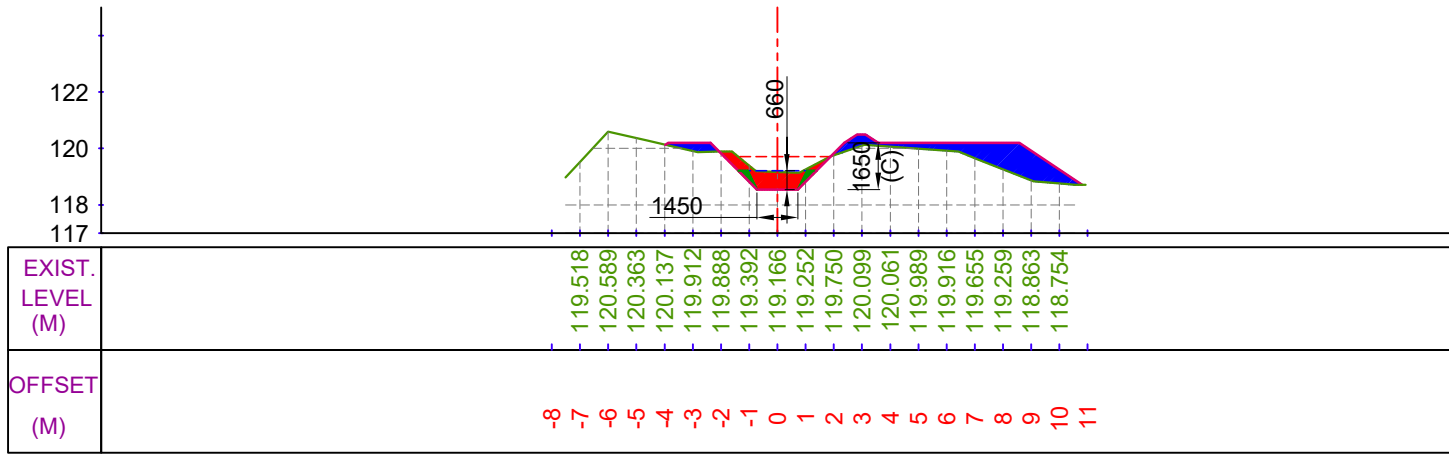
WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-

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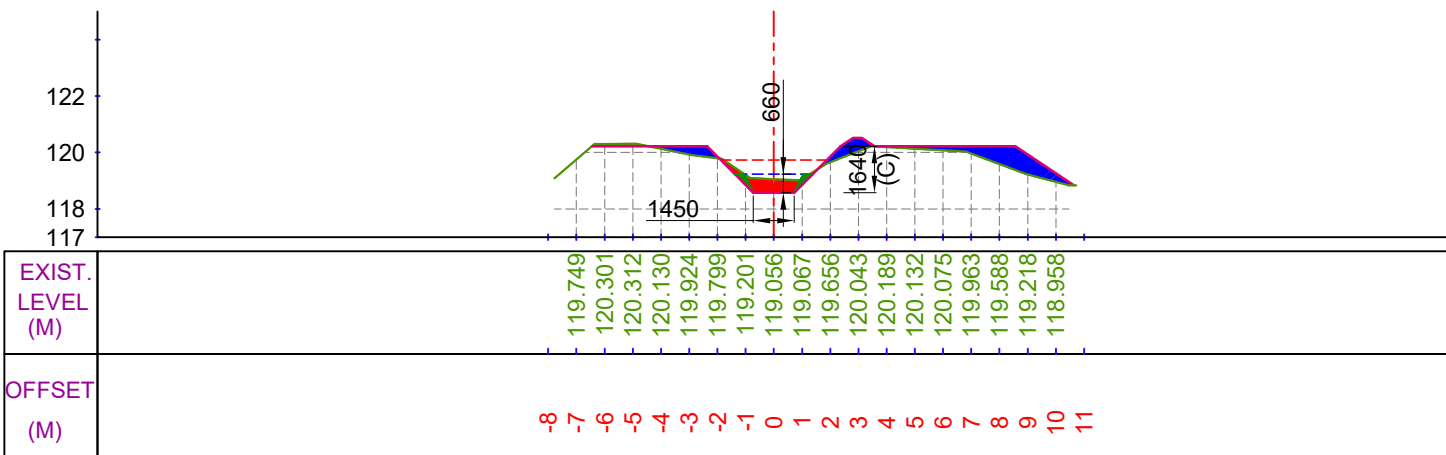
X SECTION OF SONDIH-II SUB-DY.



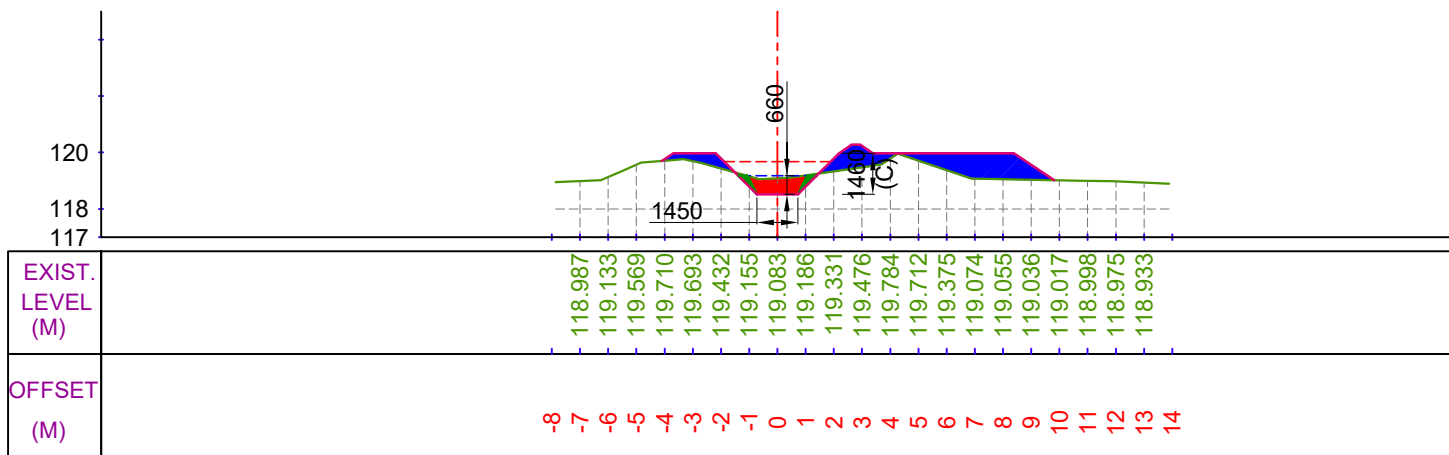
CUTTING AREA (SQ.M) = 0.554
FILLING AREA (SQ.M) = 3.381
CH. (KM):- 4+900
DESIGNED BED LEVEL = 118.608 M



CUTTING AREA (SQ.M) = 1.605
FILLING AREA (SQ.M) = 4.517
CH. (KM):- 5+100
DESIGNED BED LEVEL = 118.545 M



CUTTING AREA (SQ.M) = 1.099
FILLING AREA (SQ.M) = 3.262
CH. (KM):- 5+000
DESIGNED BED LEVEL = 118.577 M



CUTTING AREA (SQ.M) = 1.066
FILLING AREA (SQ.M) = 5.239
CH. (KM):- 5+200
DESIGNED BED LEVEL = 118.514 M

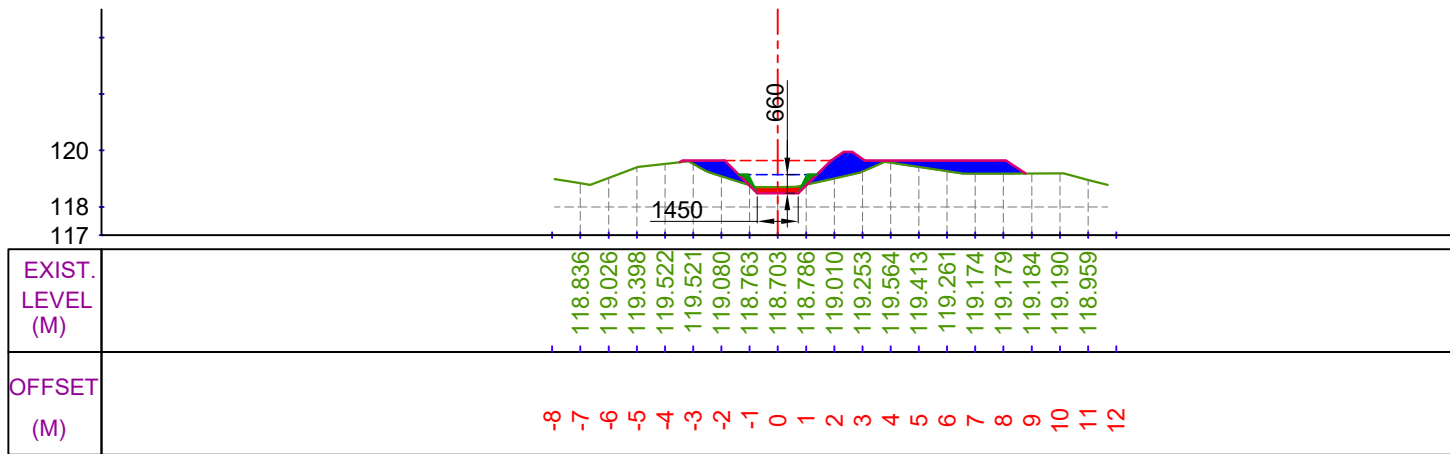
LEGEND

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

Prepared by :-
WAPCOS LTD.

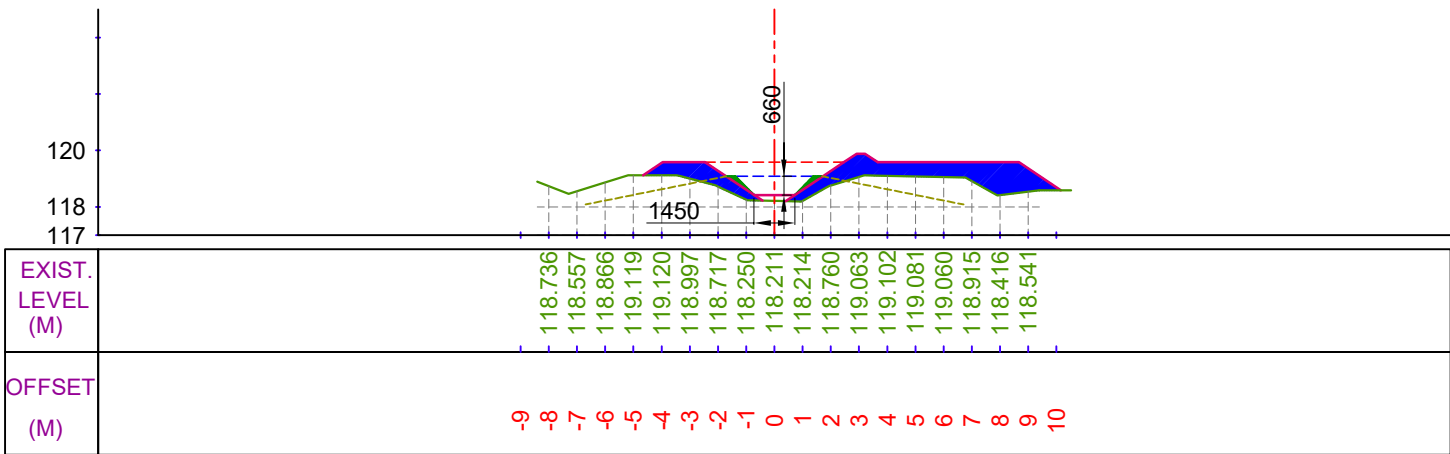
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-13 of 23

X SECTION OF SONDIH-II SUB-DY.



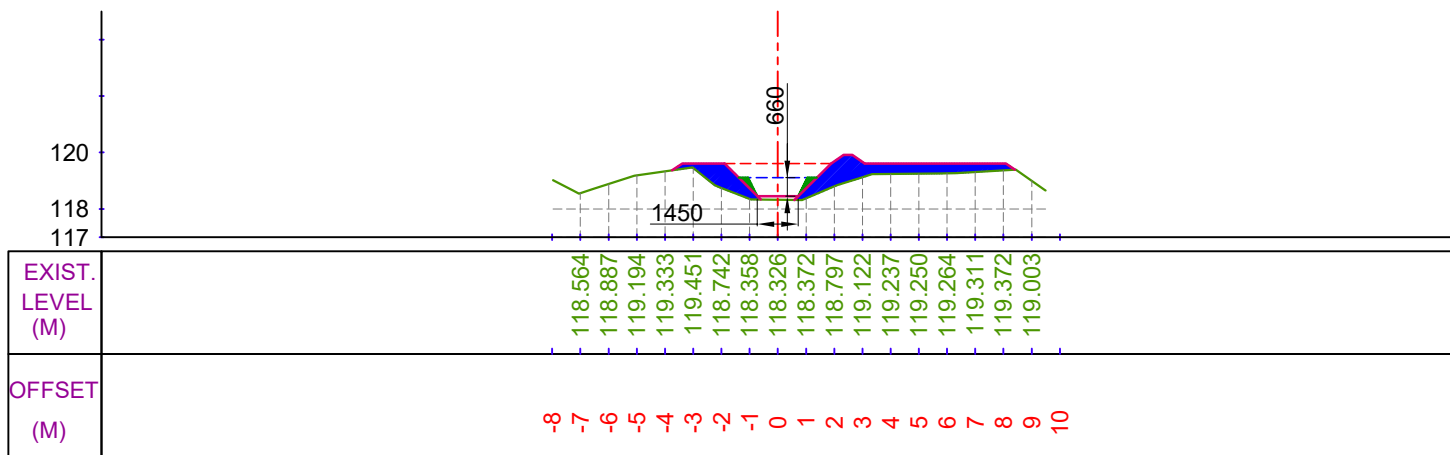
CUTTING AREA (SQ.M) = 0.348
FILLING AREA (SQ.M) = 3.584

CH. (KM):- 5+300
DESIGNED BED LEVEL = 118.483 M



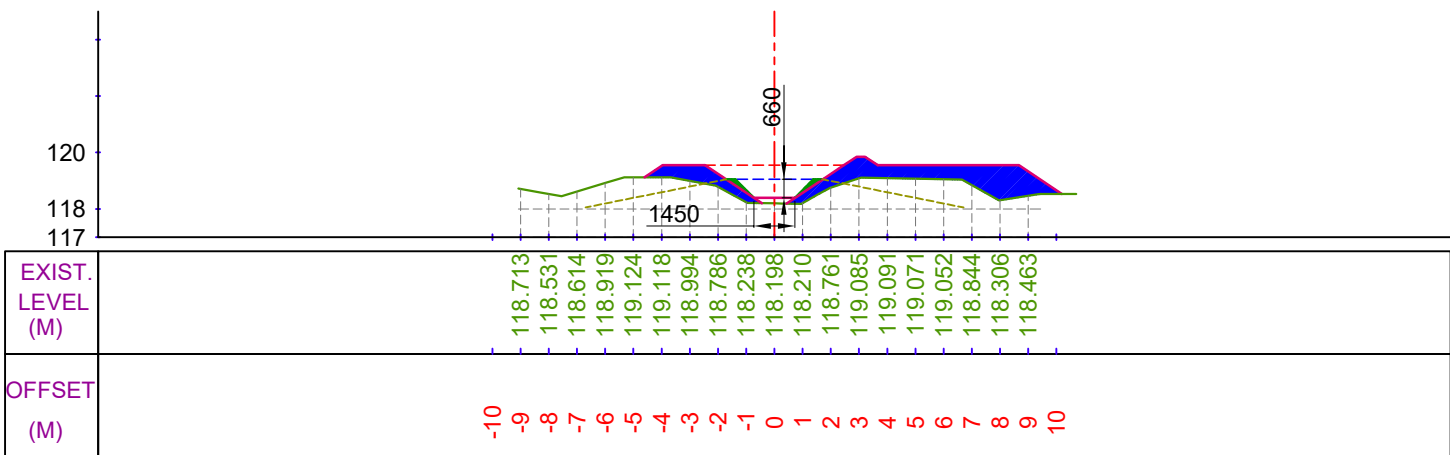
CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 7.697

CH. (KM):- 5+500
DESIGNED BED LEVEL = 118.420 M



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 4.768

CH. (KM):- 5+400
DESIGNED BED LEVEL = 118.452 M



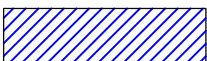
CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 7.514

CH. (KM):- 5+600
DESIGNED BED LEVEL = 118.389 M

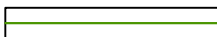
LEGEND



CUT AREA



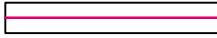
FILL AREA



EXISTING BED LINE



F.S.L.



DESIGNED BED LINE



H.G. LINE

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

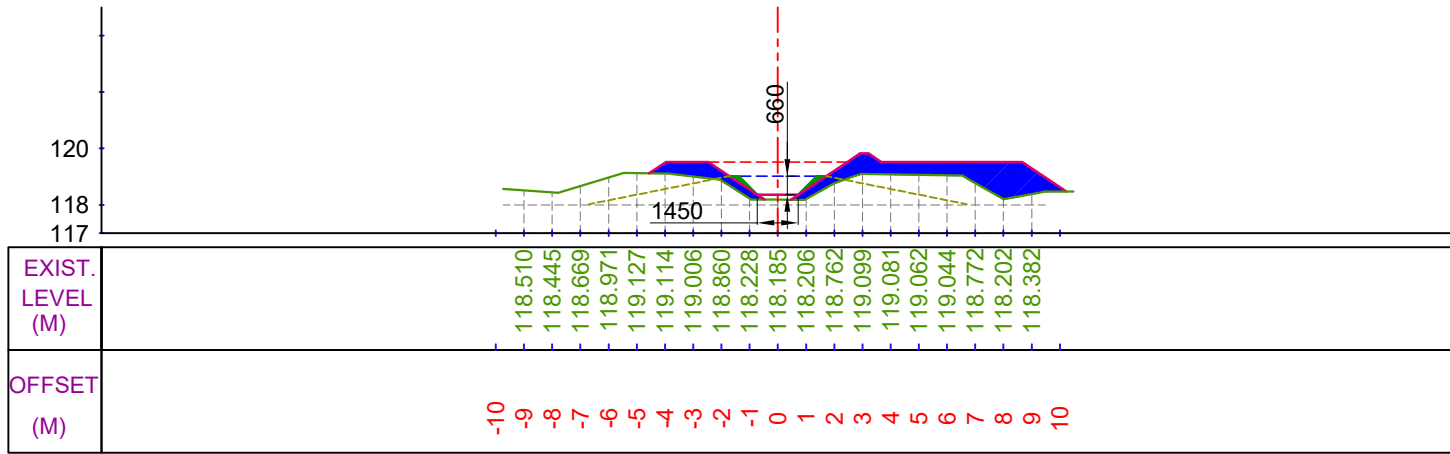
X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

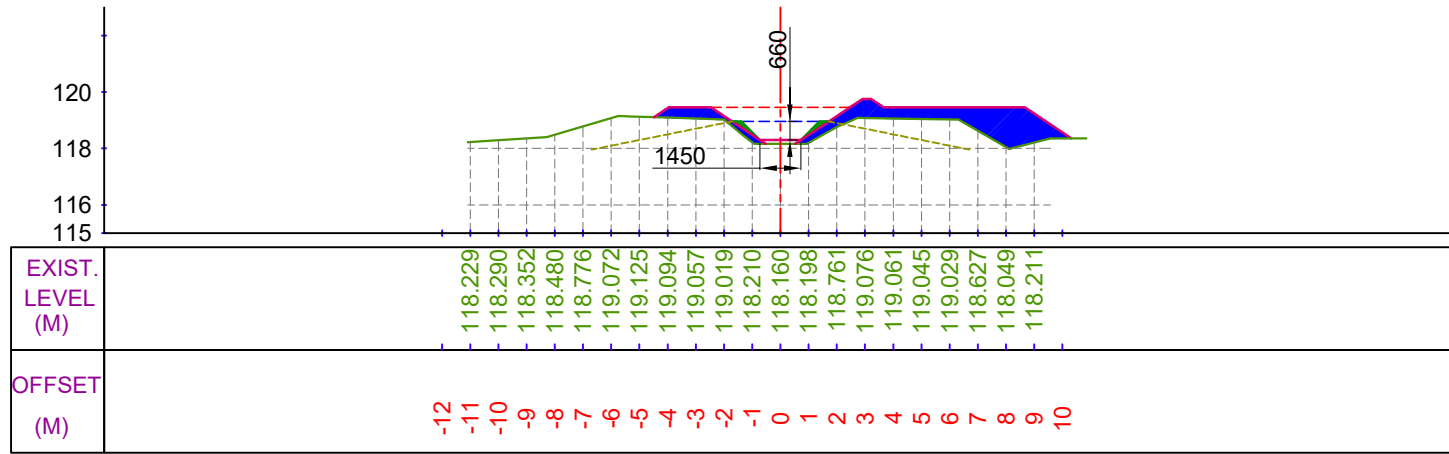
WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-

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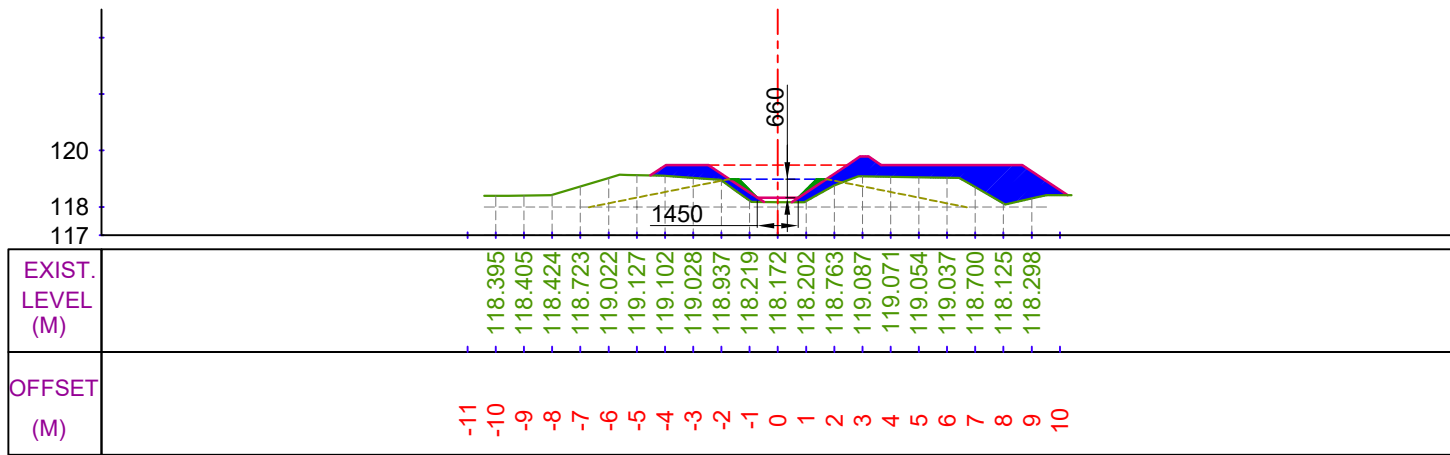
X SECTION OF SONDIH-II SUB-DY.



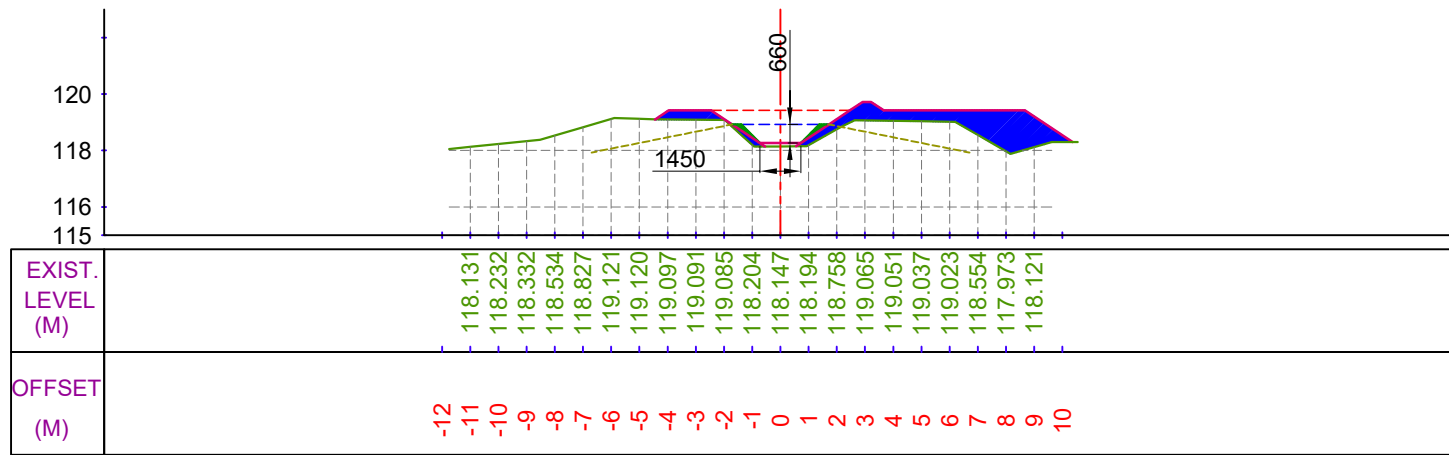
CUTTING AREA (SQ.M) = 0.000 CH. (KM):- 5+700
FILLING AREA (SQ.M) = 7.335 DESIGNED BED LEVEL = 118.358 M



CUTTING AREA (SQ.M) = 0.000 CH. (KM):- 5+900
FILLING AREA (SQ.M) = 6.964 DESIGNED BED LEVEL = 118.295 M



CUTTING AREA (SQ.M) = 0.000 CH. (KM):- 5+800
FILLING AREA (SQ.M) = 7.156 DESIGNED BED LEVEL = 118.327 M



CUTTING AREA (SQ.M) = 0.000 CH. (KM):- 6+000
FILLING AREA (SQ.M) = 6.785 DESIGNED BED LEVEL = 118.264 M

LEGEND

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

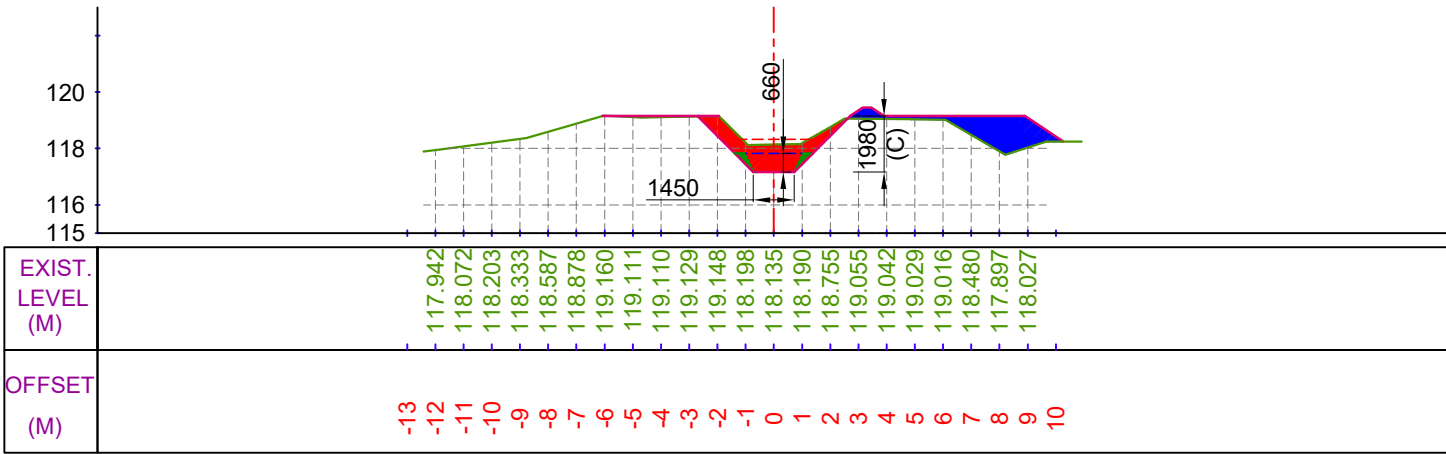
Prepared by :-

WAPCOS LTD.

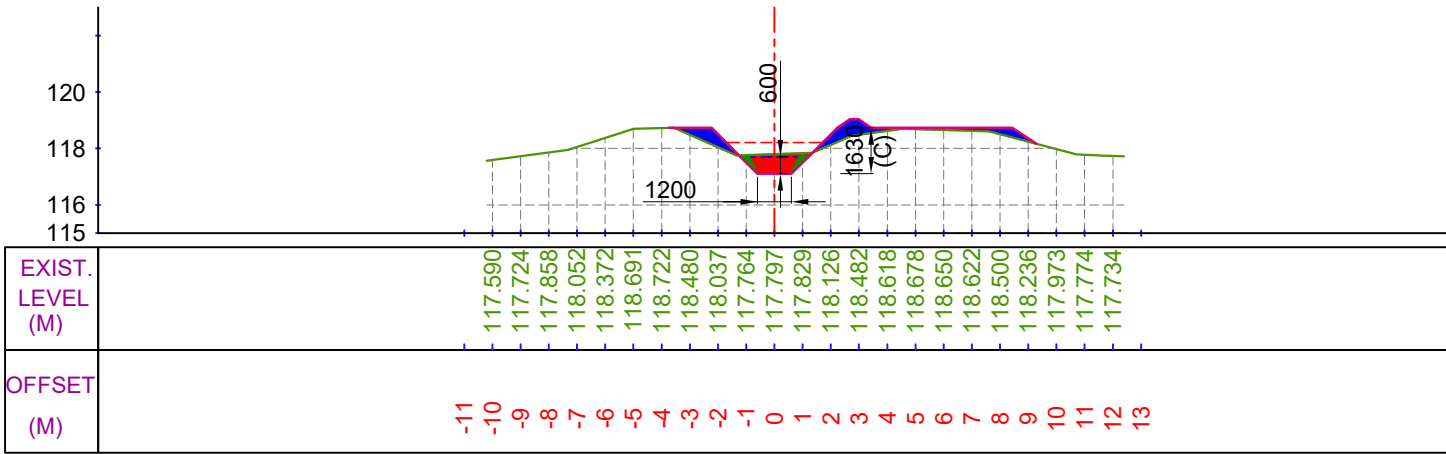


Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)		
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-		15 of 23

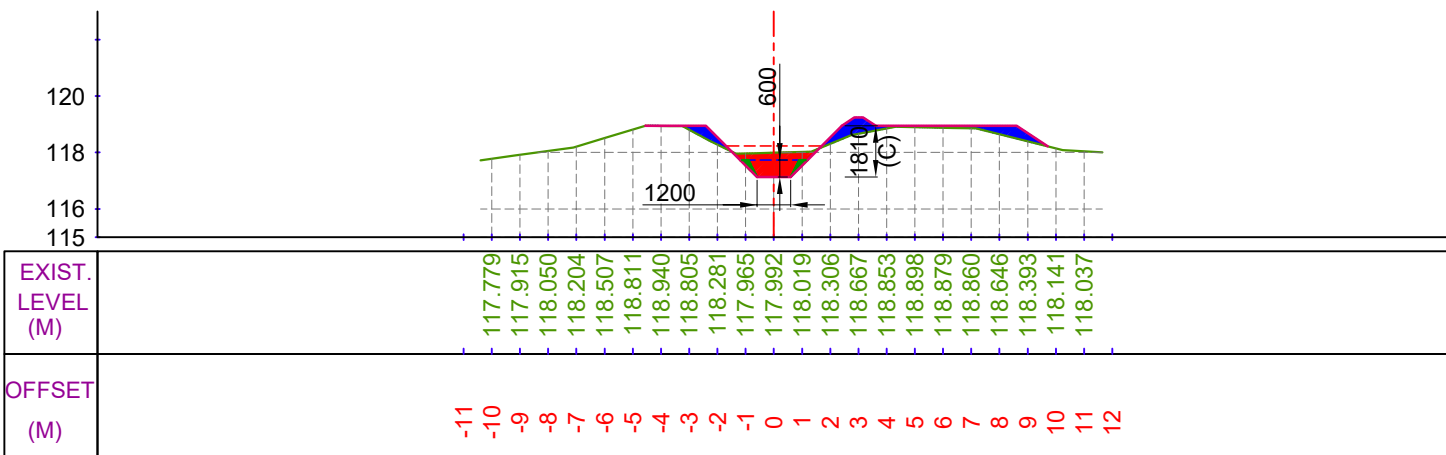
X SECTION OF SONDIH-II SUB-DY.



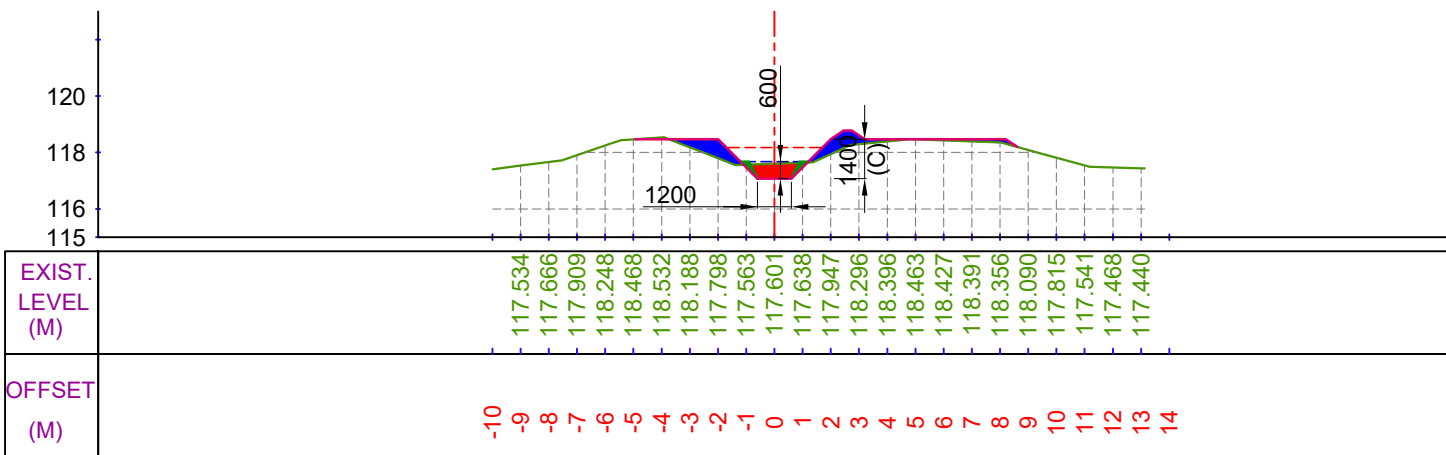
CUTTING AREA (SQ.M) = 3.296 CH. (KM):- 6+100
FILLING AREA (SQ.M) = 3.865 DESIGNED BED LEVEL = 117.166 M



CUTTING AREA (SQ.M) = 1.135 CH. (KM):- 6+300
FILLING AREA (SQ.M) = 2.264 DESIGNED BED LEVEL = 117.103 M



CUTTING AREA (SQ.M) = 1.598 CH. (KM):- 6+200
FILLING AREA (SQ.M) = 2.055 DESIGNED BED LEVEL = 117.135 M



CUTTING AREA (SQ.M) = 0.814 CH. (KM):- 6+400
FILLING AREA (SQ.M) = 2.113 DESIGNED BED LEVEL = 117.072 M

LEGEND

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

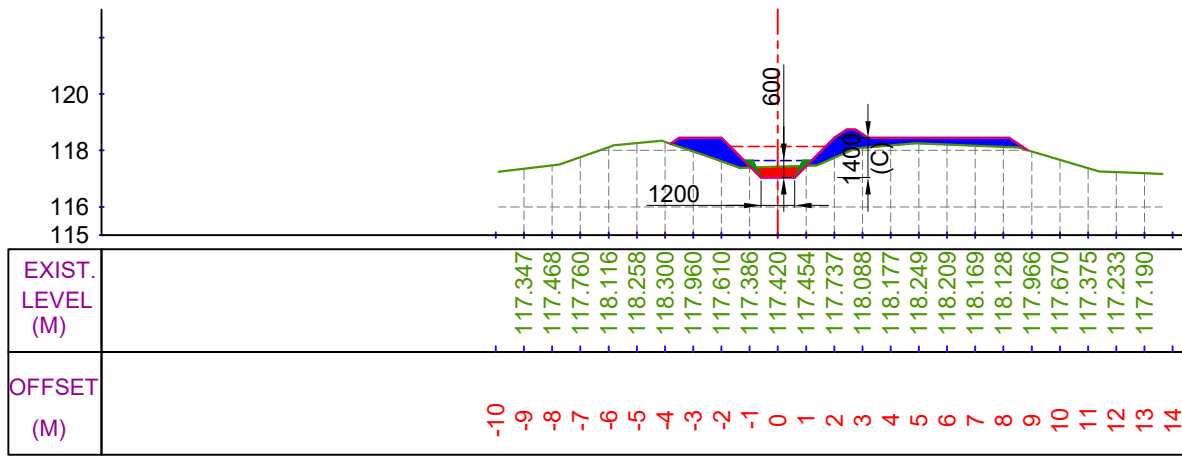
Prepared by :-

WAPCOS LTD.

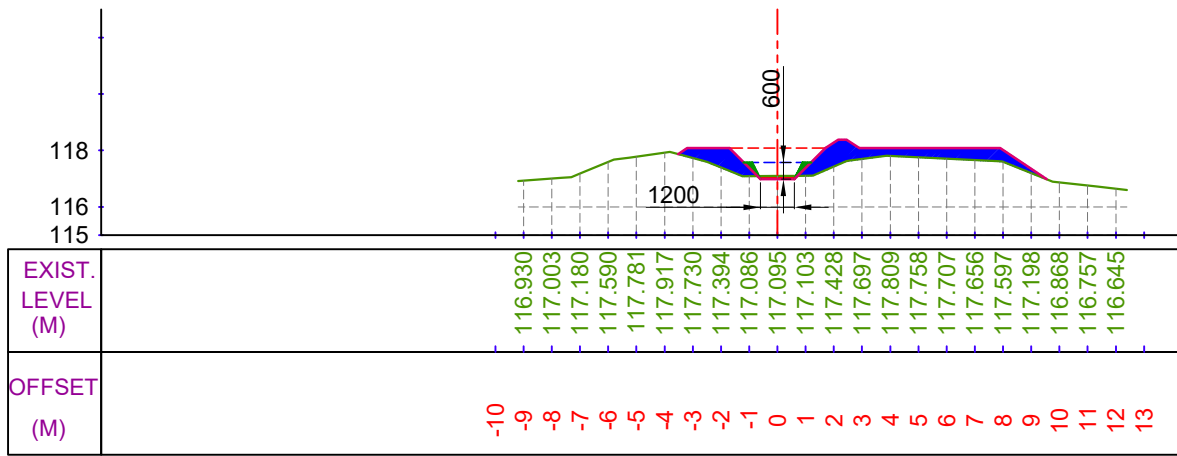


Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)		
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-		16 of 23

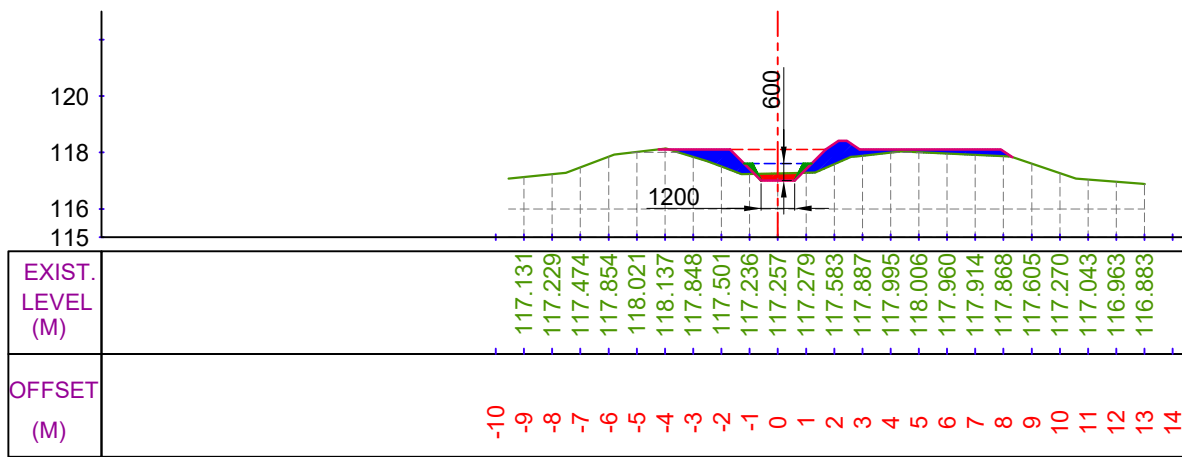
X SECTION OF SONDIH-II SUB-DY.



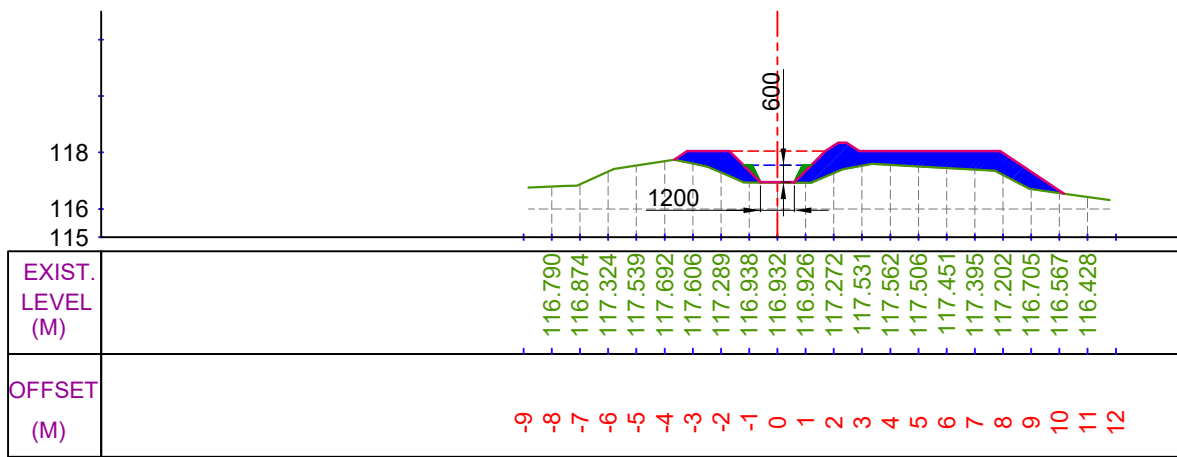
CUTTING AREA (SQ.M) = 0.527
FILLING AREA (SQ.M) = 3.941
CH. (KM):- 6+500
DESIGNED BED LEVEL = 117.041 M



CUTTING AREA (SQ.M) = 0.147
FILLING AREA (SQ.M) = 4.746
CH. (KM):- 6+700
DESIGNED BED LEVEL = 116.978 M



CUTTING AREA (SQ.M) = 0.333
FILLING AREA (SQ.M) = 2.940
CH. (KM):- 6+600
DESIGNED BED LEVEL = 117.010 M



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 7.152
CH. (KM):- 6+800
DESIGNED BED LEVEL = 116.947 M

LEGEND

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

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

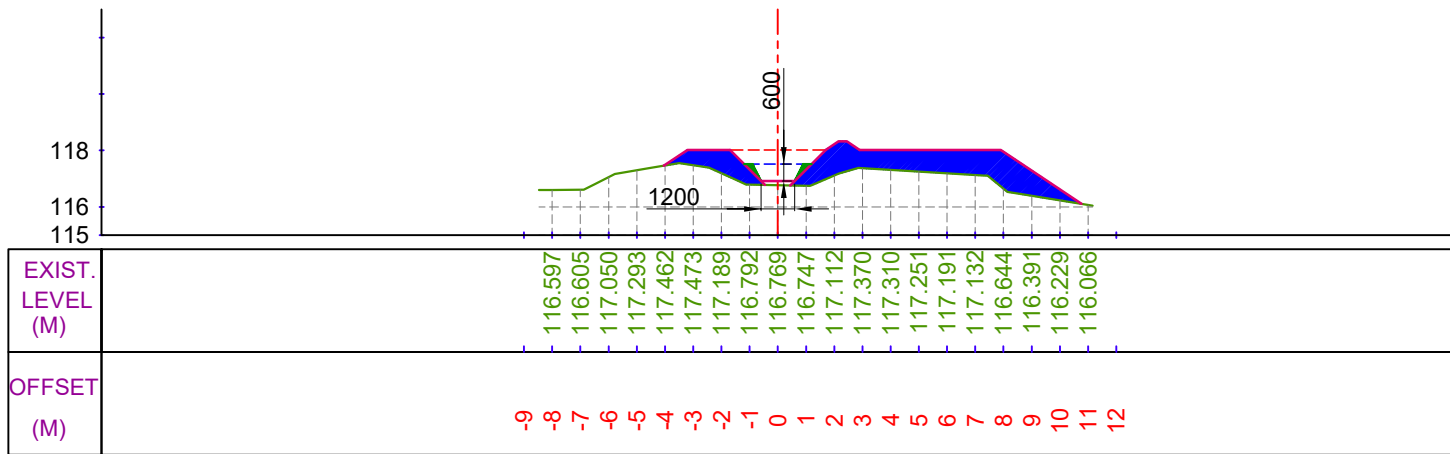
X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

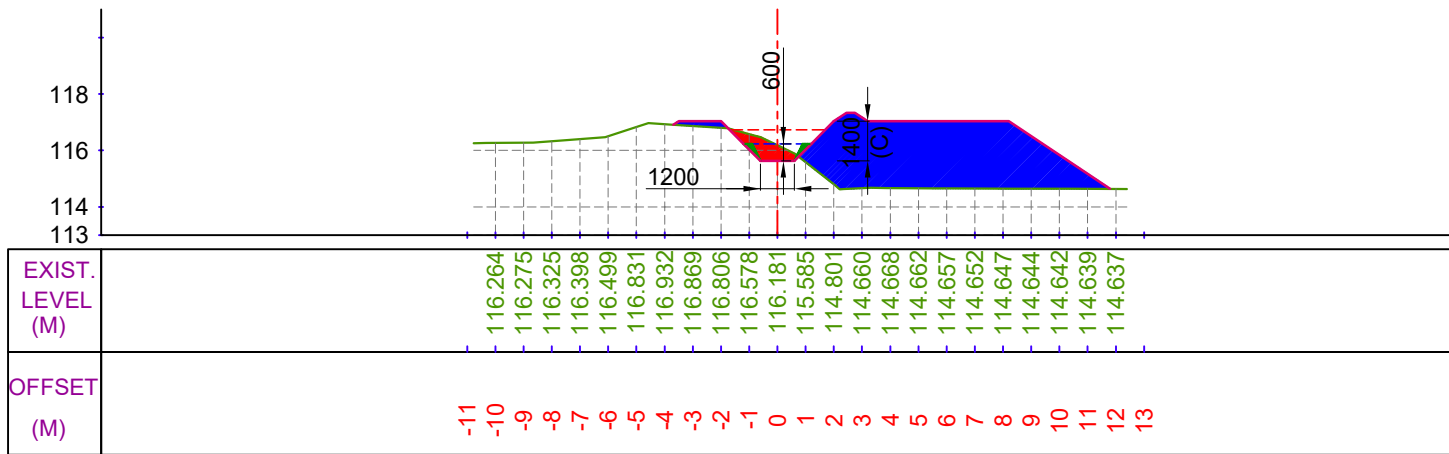
WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-

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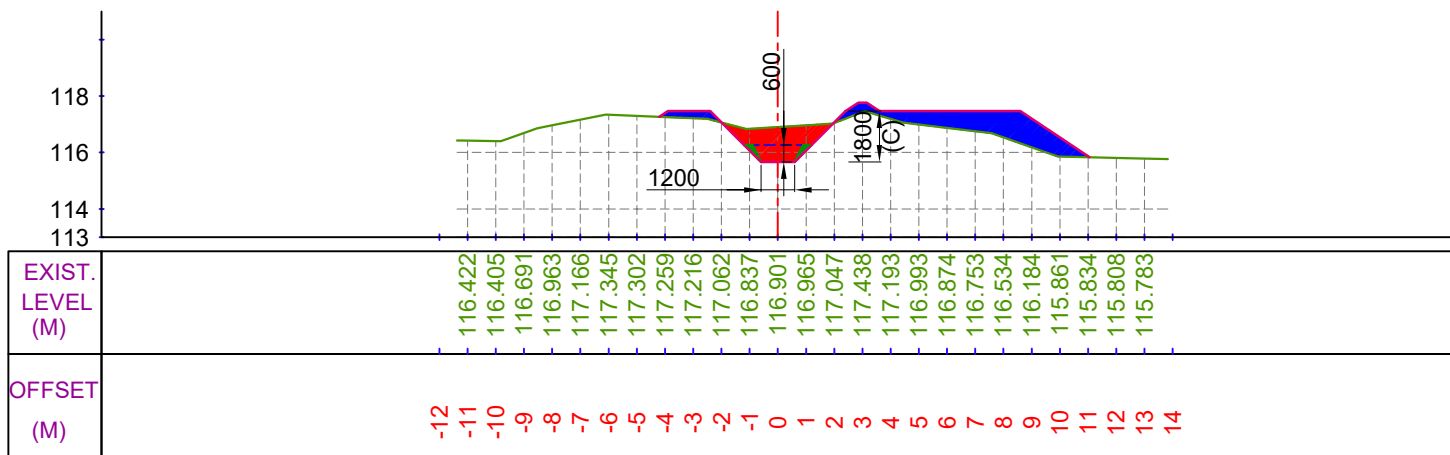
X SECTION OF SONDIH-II SUB-DY.



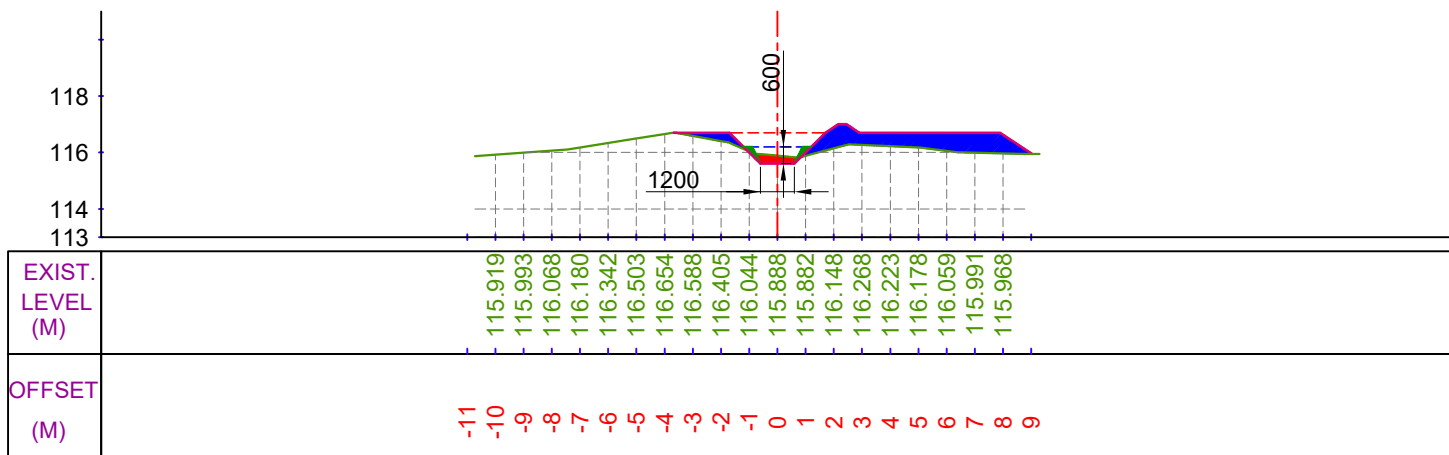
CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 9.903
CH. (KM):- 6+900
DESIGNED BED LEVEL = 116.916 M



CUTTING AREA (SQ.M) = 1.060
FILLING AREA (SQ.M) = 20.953
CH. (KM):- 7+100
DESIGNED BED LEVEL = 115.634 M



CUTTING AREA (SQ.M) = 2.929
FILLING AREA (SQ.M) = 5.585
CH. (KM):- 7+000
DESIGNED BED LEVEL = 115.666 M



CUTTING AREA (SQ.M) = 0.385
FILLING AREA (SQ.M) = 4.885
CH. (KM):- 7+200
DESIGNED BED LEVEL = 115.603 M

LEGEND

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

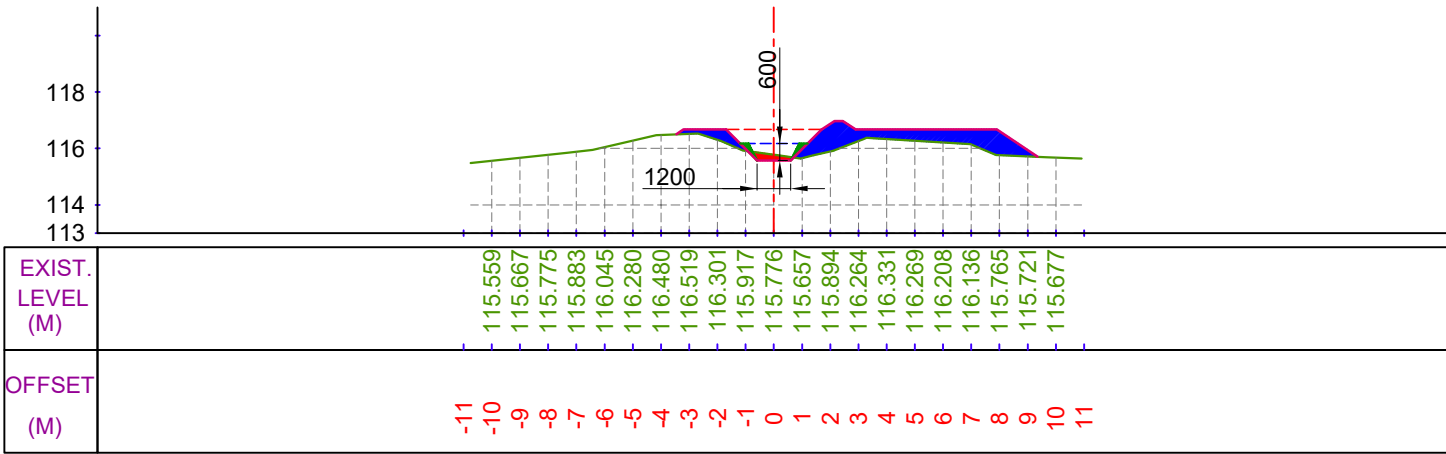
Prepared by :-

WAPCOS LTD.

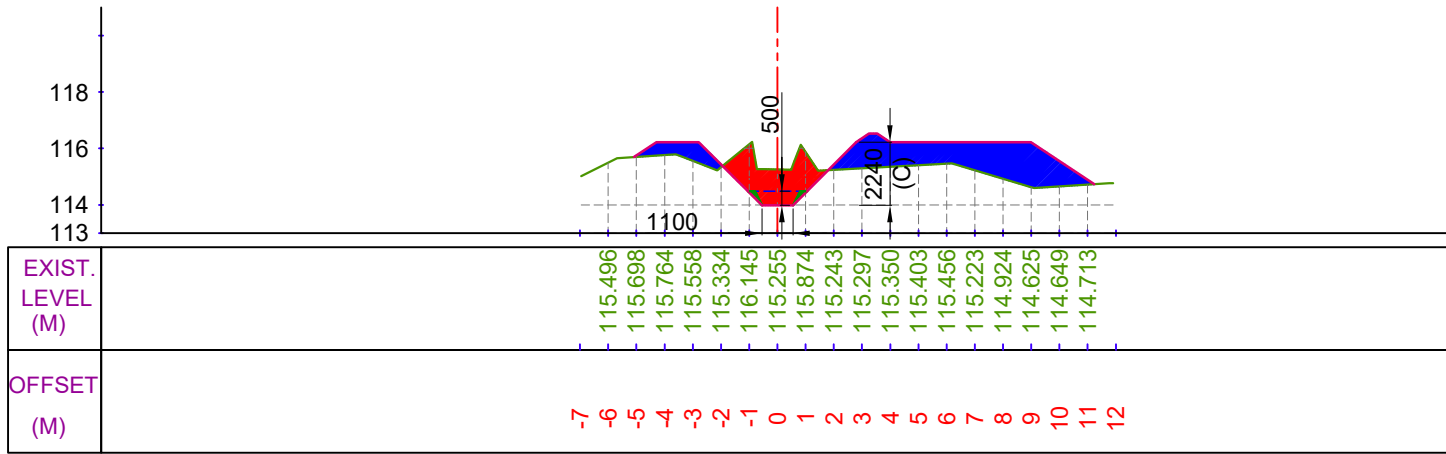


Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-18 of 23

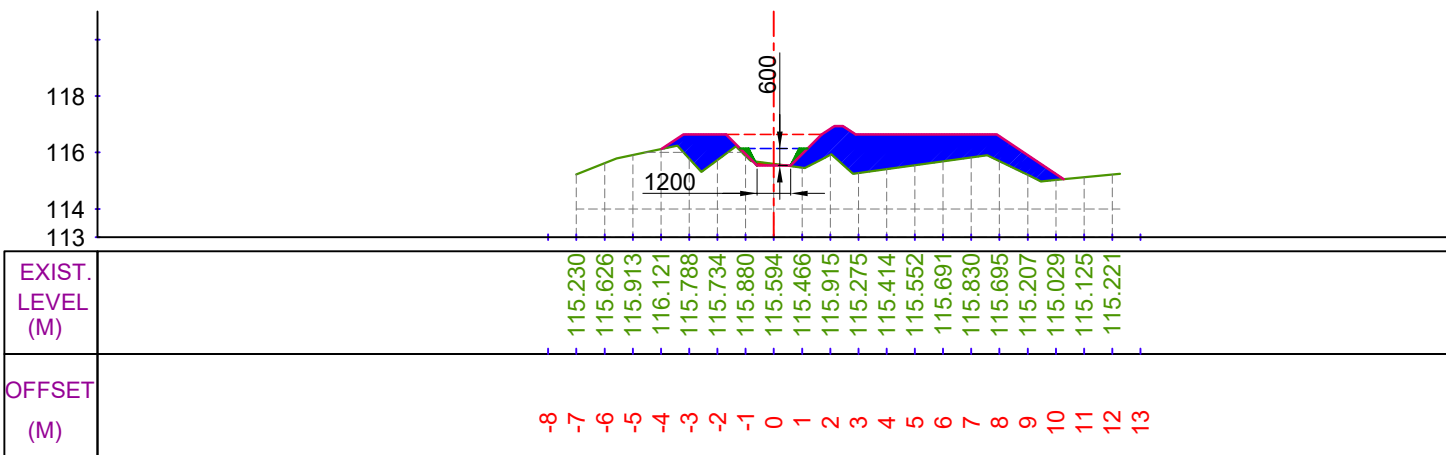
X SECTION OF SONDIH-II SUB-DY.



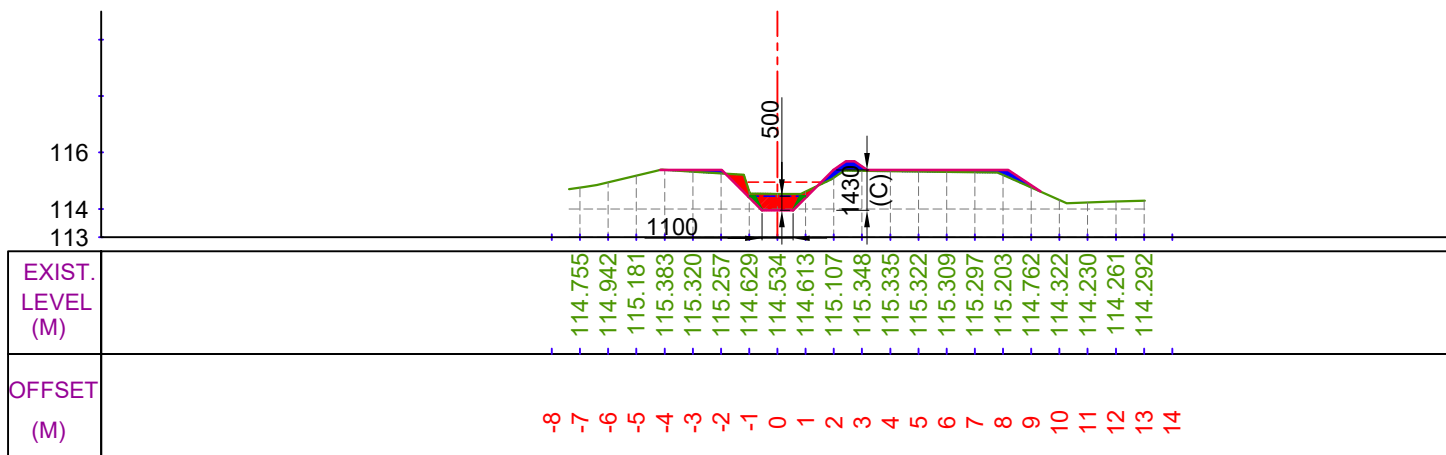
CUTTING AREA (SQ.M) = 0.271
FILLING AREA (SQ.M) = 5.060
CH. (KM):- 7+300
DESIGNED BED LEVEL = 115.572 M



CUTTING AREA (SQ.M) = 3.929
FILLING AREA (SQ.M) = 10.092
CH. (KM):- 7+500
DESIGNED BED LEVEL = 113.985 M



CUTTING AREA (SQ.M) = 0.070
FILLING AREA (SQ.M) = 10.488
CH. (KM):- 7+400
DESIGNED BED LEVEL = 115.541 M



CUTTING AREA (SQ.M) = 1.168
FILLING AREA (SQ.M) = 1.060
CH. (KM):- 7+600
DESIGNED BED LEVEL = 113.953 M

LEGEND

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

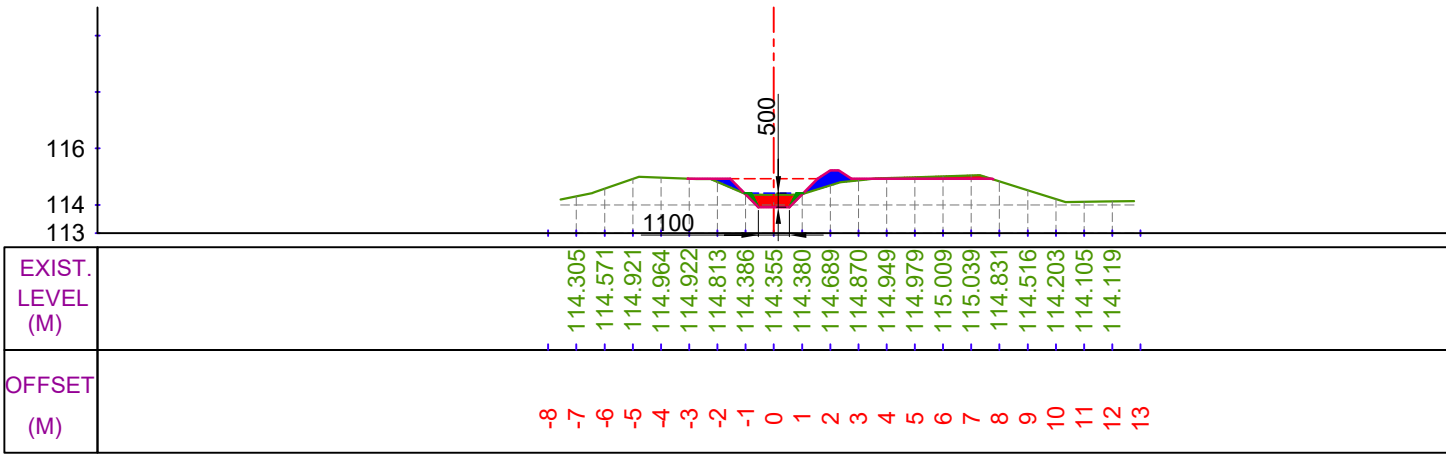
Prepared by :-

WAPCOS LTD.

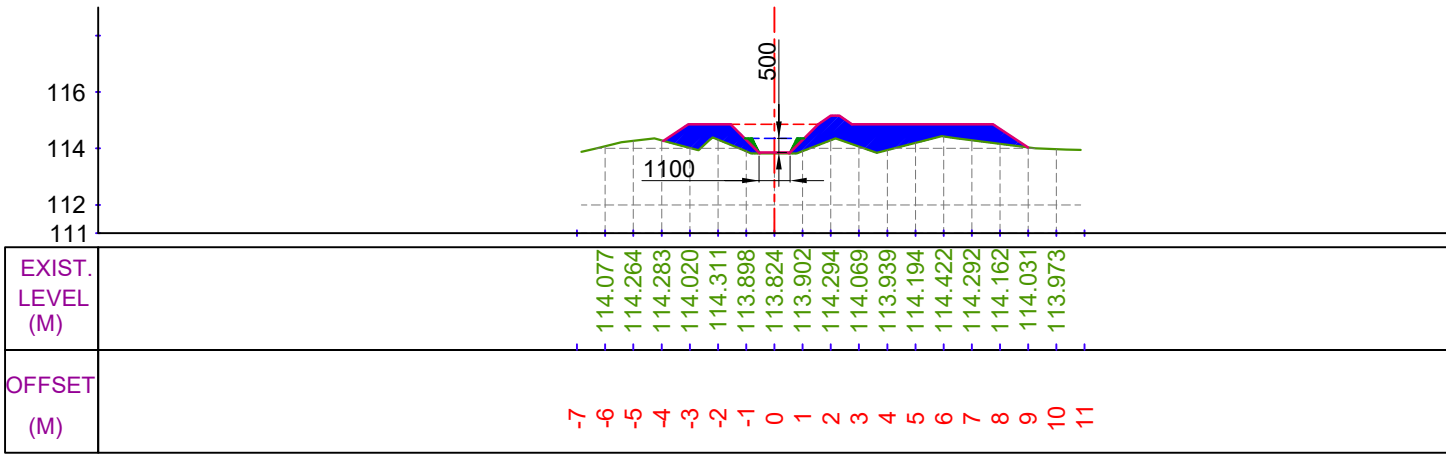


Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-19 of 23

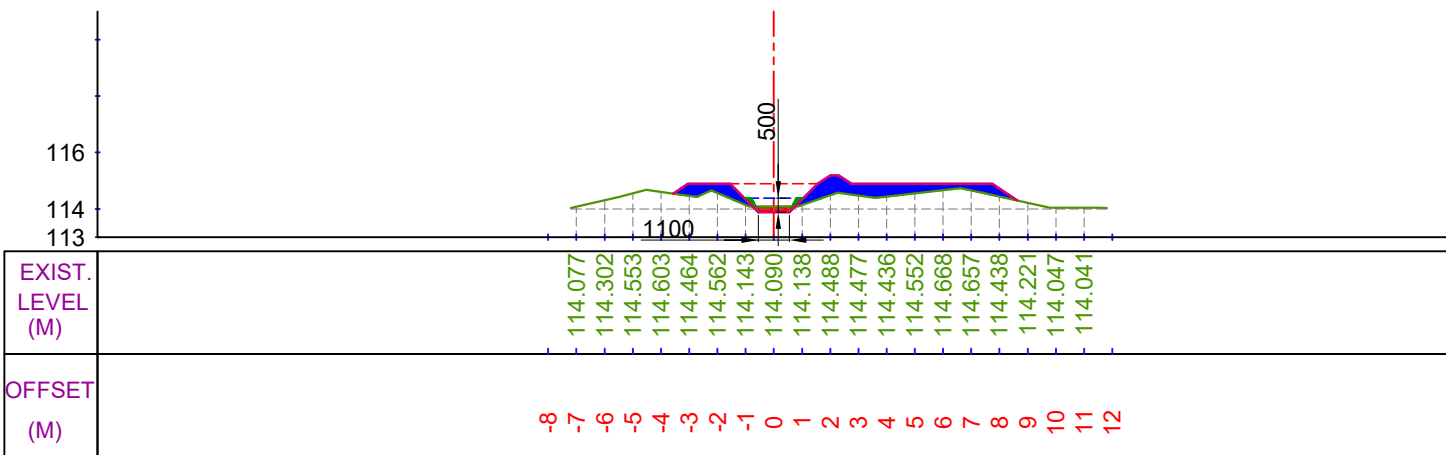
X SECTION OF SONDIH-II SUB-DY.



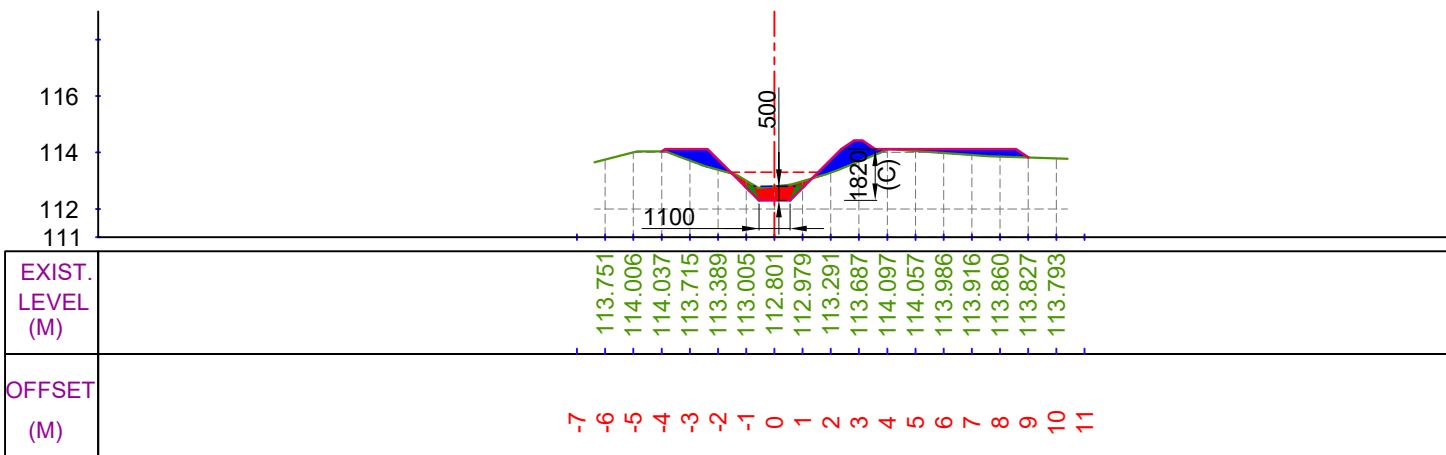
CUTTING AREA (SQ.M) = 0.864
FILLING AREA (SQ.M) = 0.781
CH. (KM):- 7+700
DESIGNED BED LEVEL = 113.921 M



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 7.005
CH. (KM):- 7+900
DESIGNED BED LEVEL = 113.856 M



CUTTING AREA (SQ.M) = 0.242
FILLING AREA (SQ.M) = 3.666
CH. (KM):- 7+800
DESIGNED BED LEVEL = 113.888 M



CUTTING AREA (SQ.M) = 0.866
FILLING AREA (SQ.M) = 2.744
CH. (KM):- 8+000
DESIGNED BED LEVEL = 112.300 M

LEGEND

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

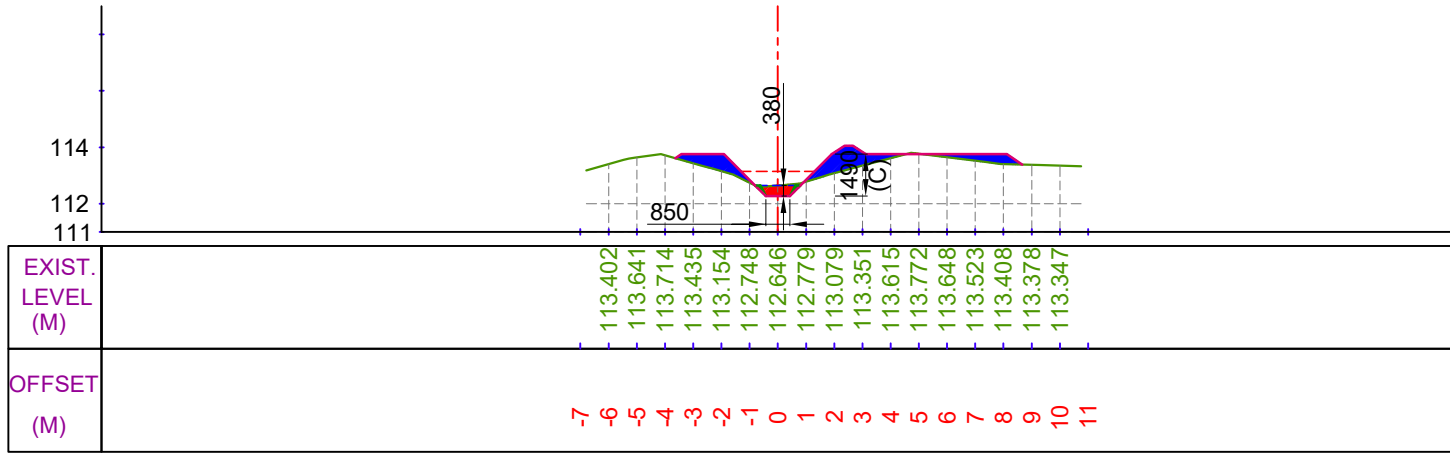
Prepared by :-

WAPCOS LTD.

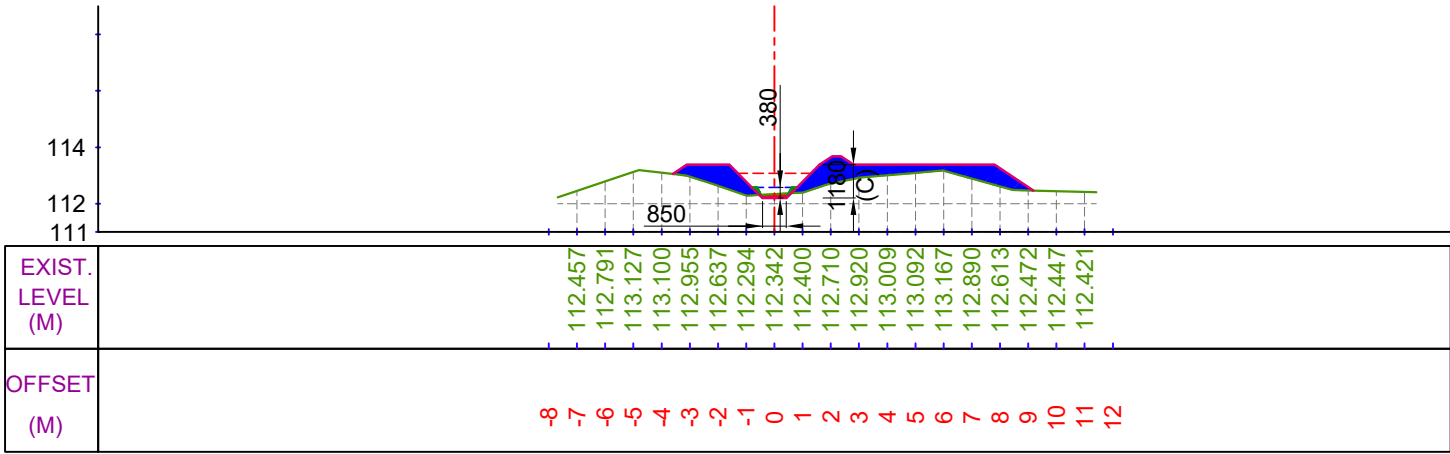


Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC- 20 of 23

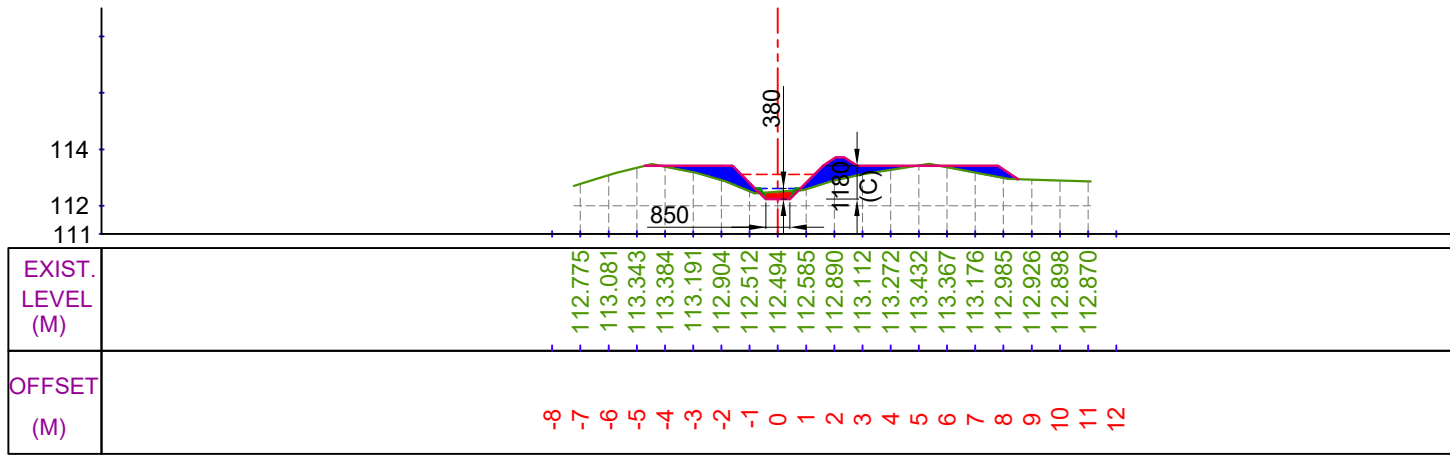
X SECTION OF SONDIH-II SUB-DY.



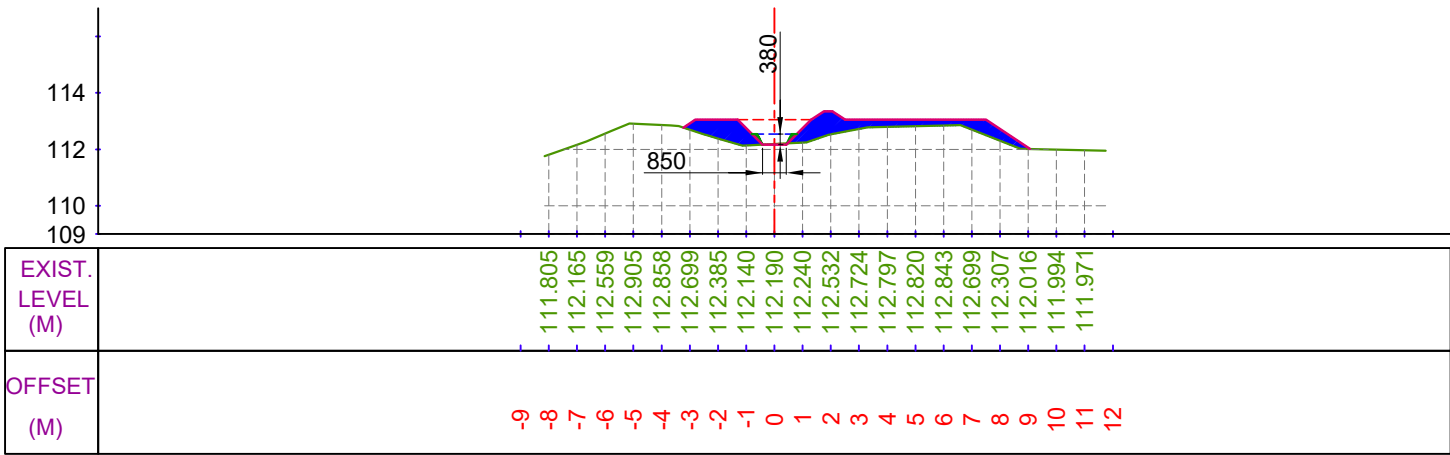
CUTTING AREA (SQ.M) = 0.424
FILLING AREA (SQ.M) = 3.104
CH. (KM):- 8+100
DESIGNED BED LEVEL = 112.267 M



CUTTING AREA (SQ.M) = 0.130
FILLING AREA (SQ.M) = 5.453
CH. (KM):- 8+300
DESIGNED BED LEVEL = 112.201 M



CUTTING AREA (SQ.M) = 0.304
FILLING AREA (SQ.M) = 3.057
CH. (KM):- 8+200
DESIGNED BED LEVEL = 112.234 M



CUTTING AREA (SQ.M) = 0.020
FILLING AREA (SQ.M) = 4.528
CH. (KM):- 8+400
DESIGNED BED LEVEL = 112.167 M

LEGEND

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

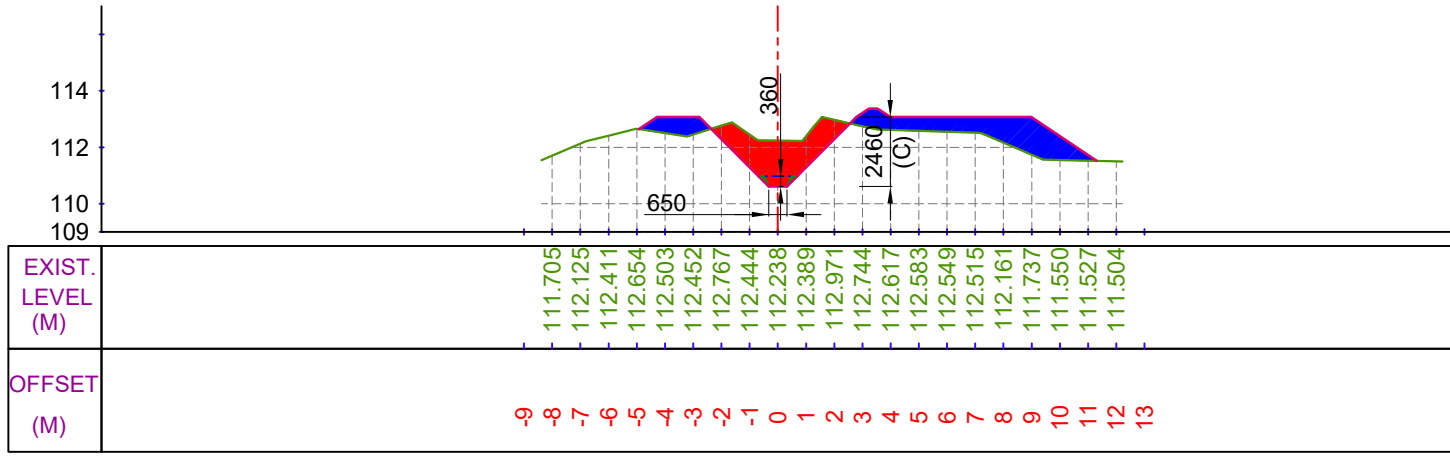
Prepared by :-

WAPCOS LTD.

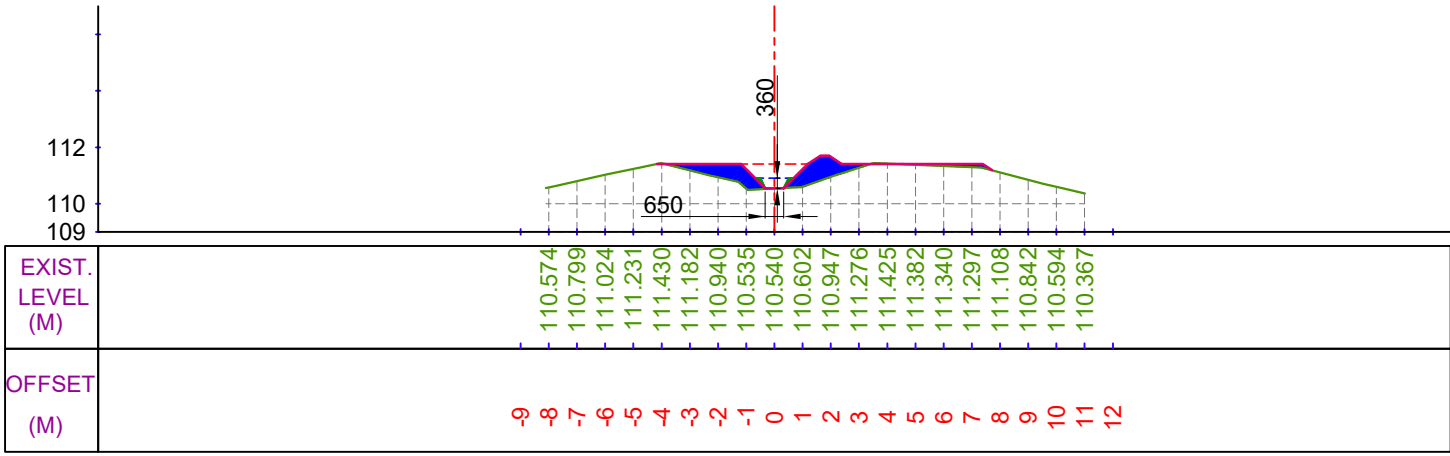


Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC- 21 of 23

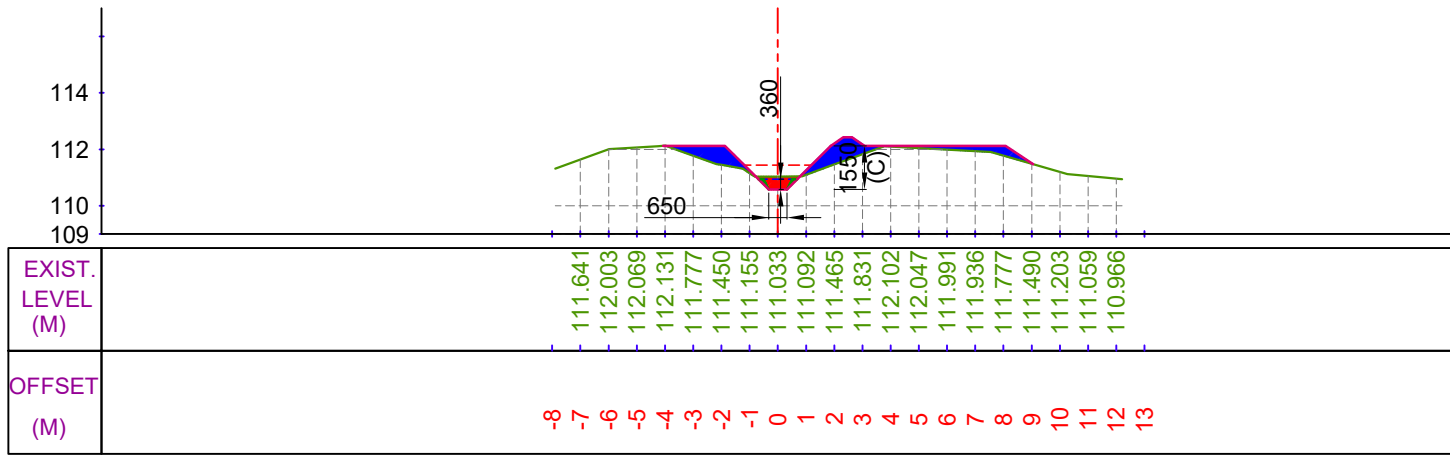
X SECTION OF SONDIH-II SUB-DY.



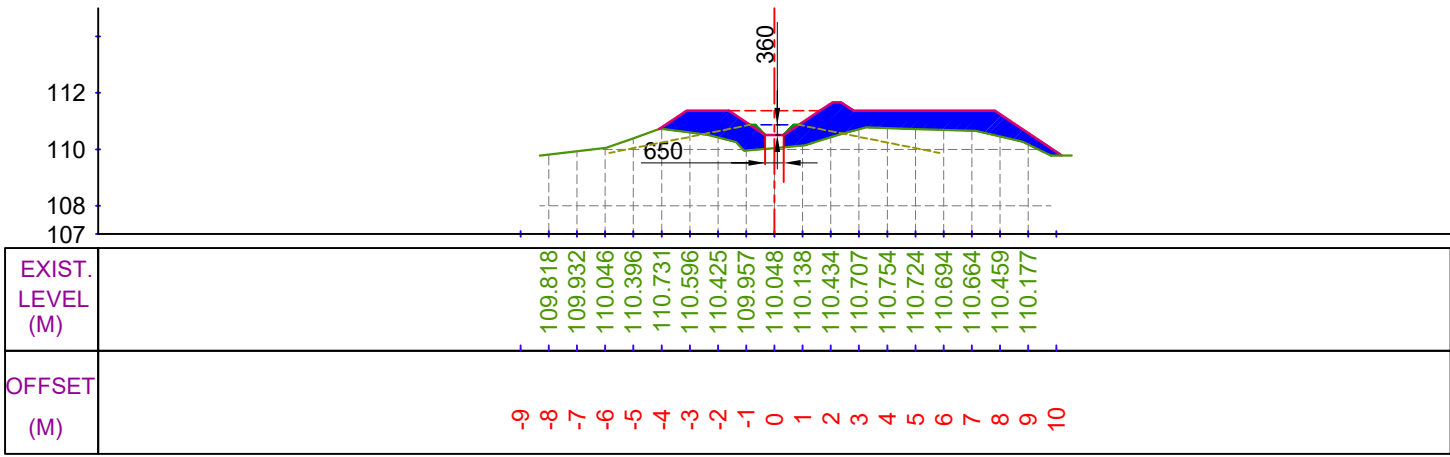
CUTTING AREA (SQ.M) = 5.064
FILLING AREA (SQ.M) = 6.948
CH. (KM):- 8+500
DESIGNED BED LEVEL = 110.610 M



CUTTING AREA (SQ.M) = 0.030
FILLING AREA (SQ.M) = 2.839
CH. (KM):- 8+700
DESIGNED BED LEVEL = 110.543 M



CUTTING AREA (SQ.M) = 0.439
FILLING AREA (SQ.M) = 3.195
CH. (KM):- 8+600
DESIGNED BED LEVEL = 110.577 M



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 9.481
CH. (KM):- 8+800
DESIGNED BED LEVEL = 110.510 M

LEGEND

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

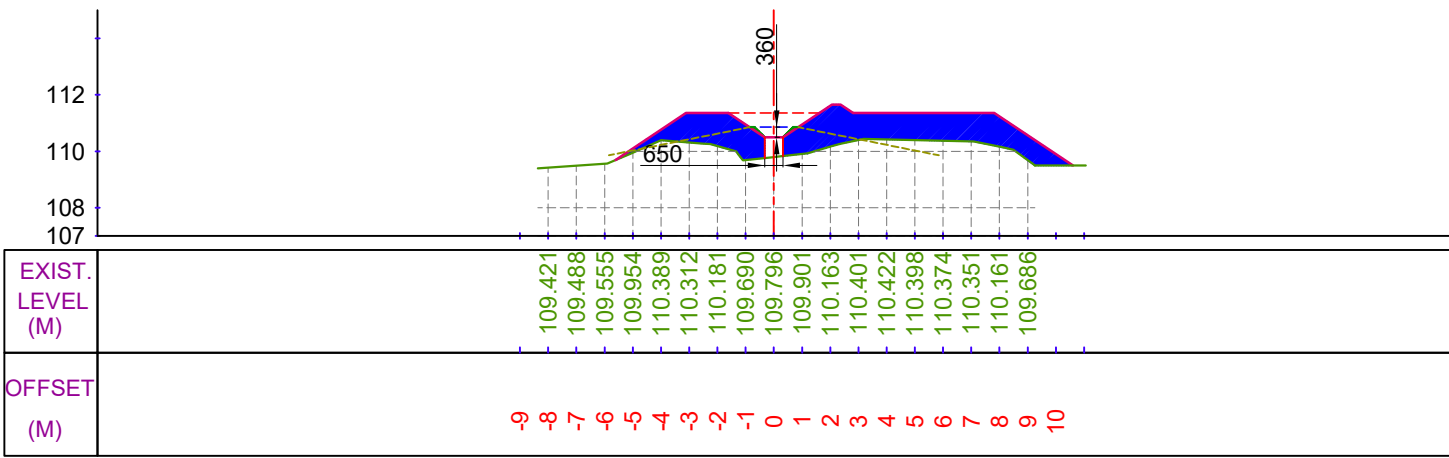
Prepared by :-

WAPCOS LTD.



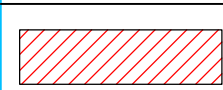
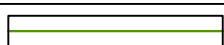
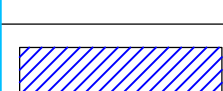
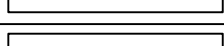
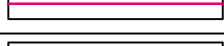
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)		
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-		22 of 23

X SECTION OF SONDIH-II SUB-DY.



CUTTING AREA (SQ.M) = 0.000
FILLING AREA (SQ.M) = 13.748
CH. (KM):- 8+850
DESIGNED BED LEVEL = 110.493 M

LEGEND

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

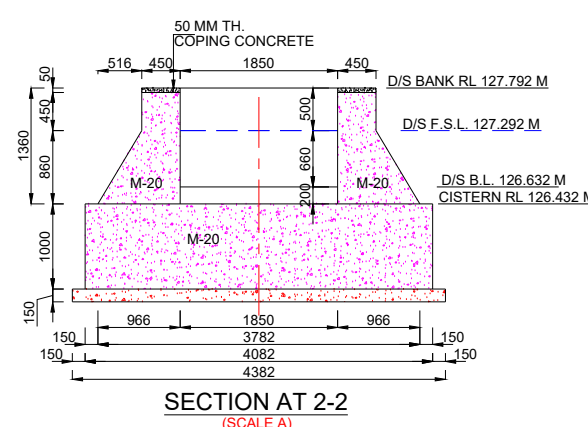
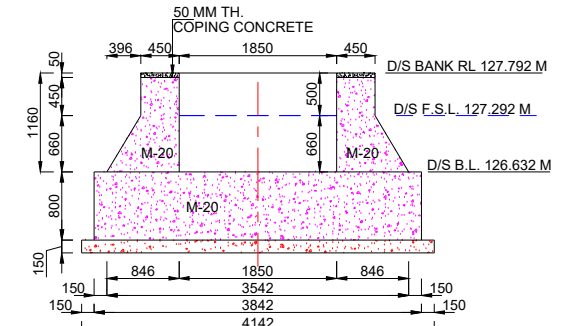
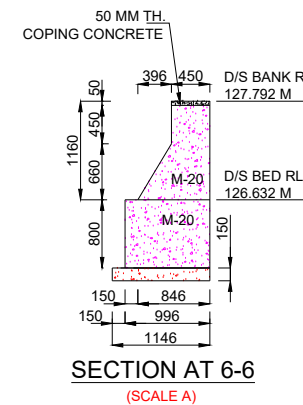
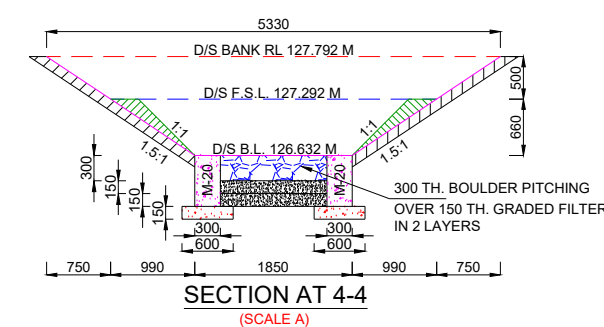
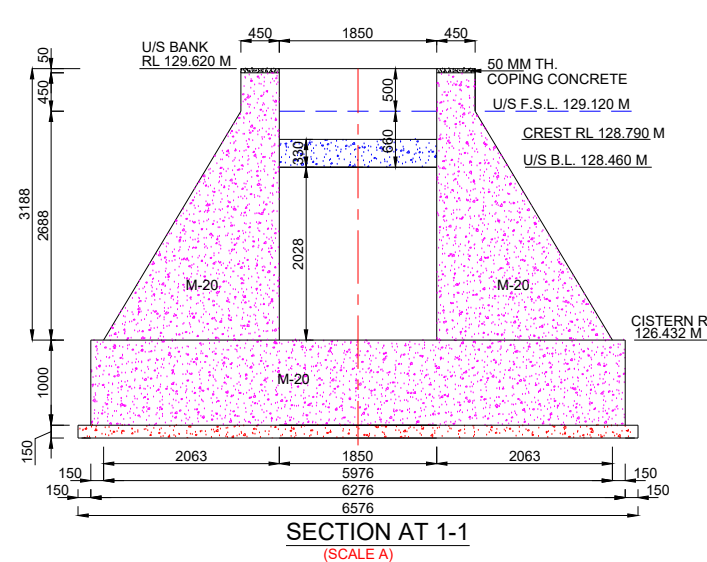
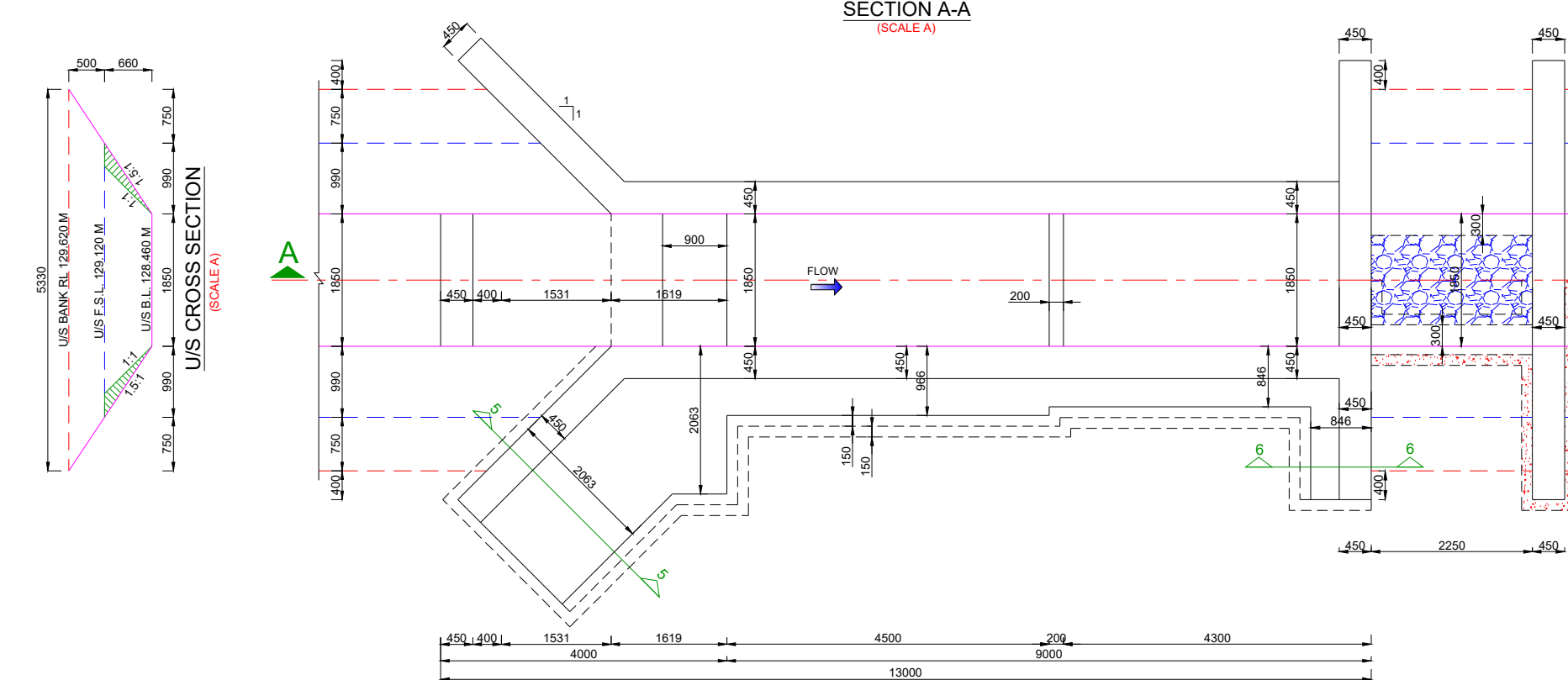
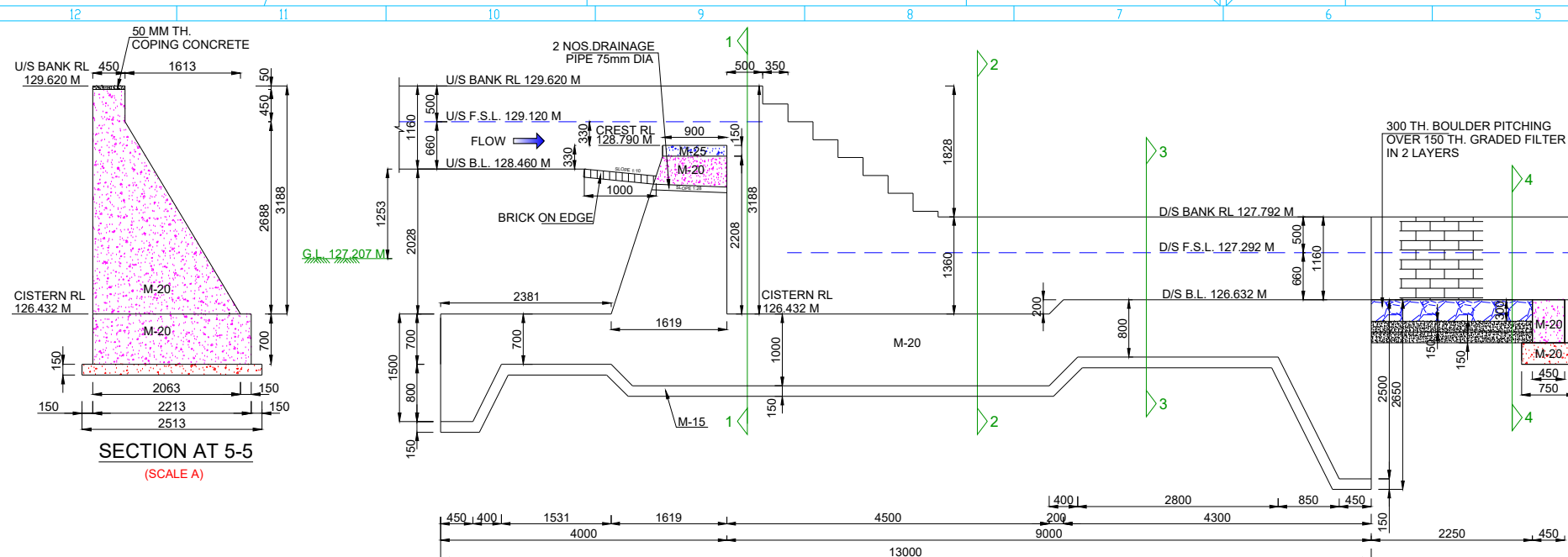
Prepared by :-

WAPCOS LTD.



Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	X SEC OF SONDIH-II SUB-DY. (OFFTAKE FROM RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)		
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ XSEC-		23 of 23

DRAWING OF STRUCTURES

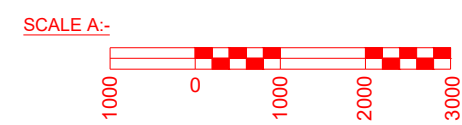


NOTES:-

1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS, FLOOR M 20 FOUNDATION OF ABUTMENTS & WING WALL M 20 PCC UNDER FLOOR M 15 ABUTMENTS / WING WALLS M 20
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	0.580	0.580	CUMEC
VERTICAL DROP	1.828	1.828	METRE
FULL SUPPLY DEPTH	0.660	0.660	METRE
BED WIDTH	1.850	1.850	METRE
BED SLOPE	1 : 3200	1 : 3200	

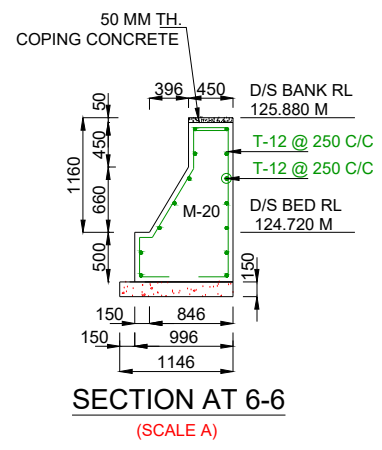
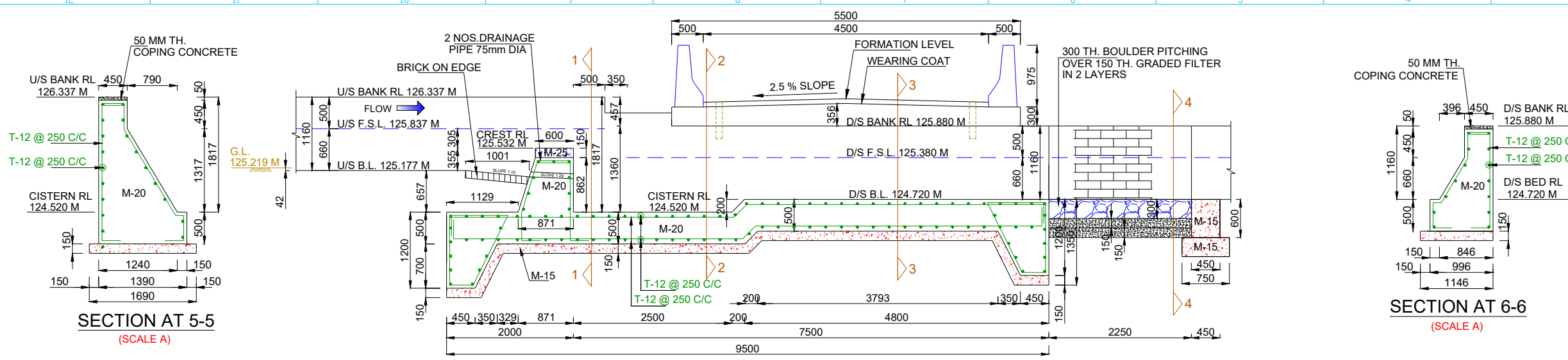


Prepared by :-

WAPCOS LTD.



Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
Drawing Title :-	SHARDA TYPE 1.828 M HT. FALL AT KM. 2.150 OF SONDIH-II SUB-DY. (OFFTAKE RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ FALL 1 of 1

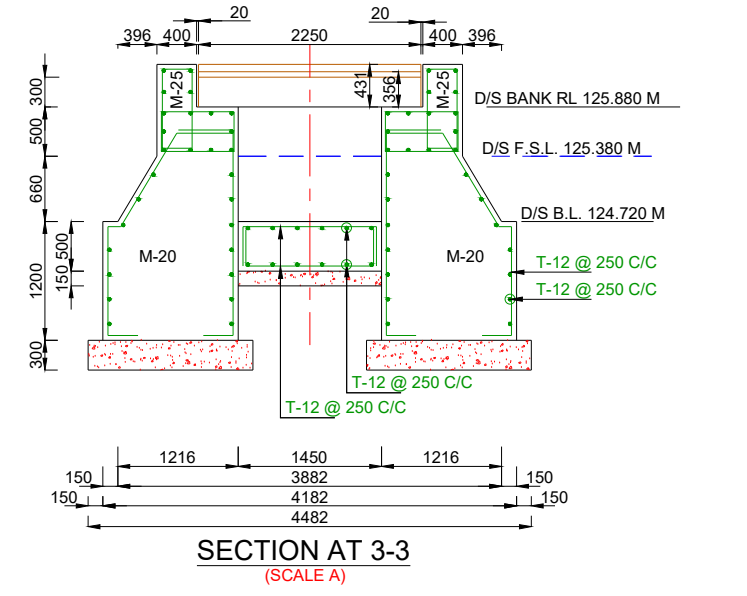
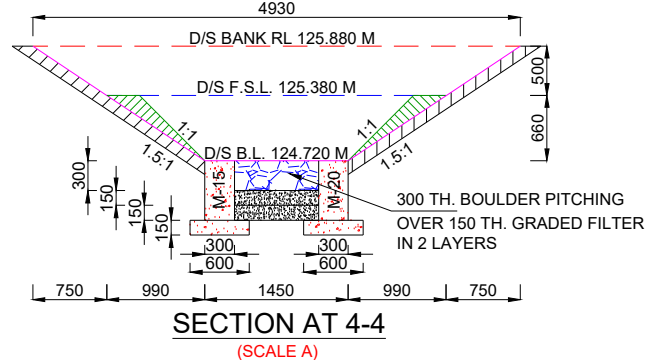
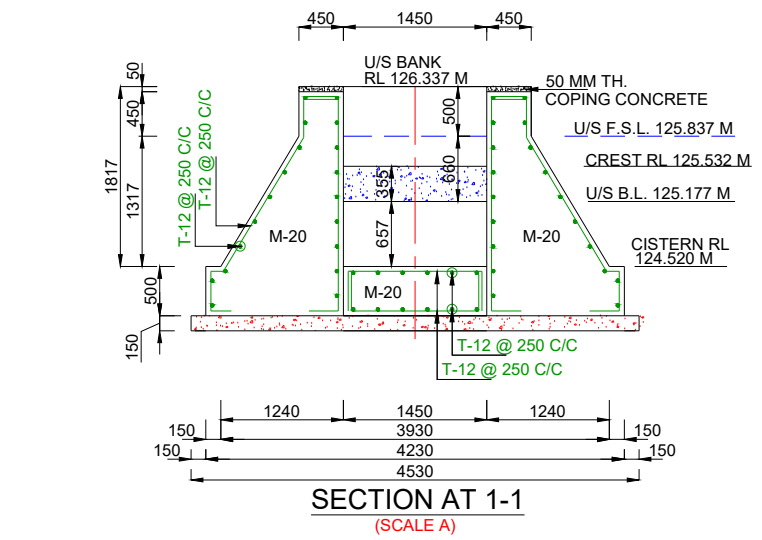
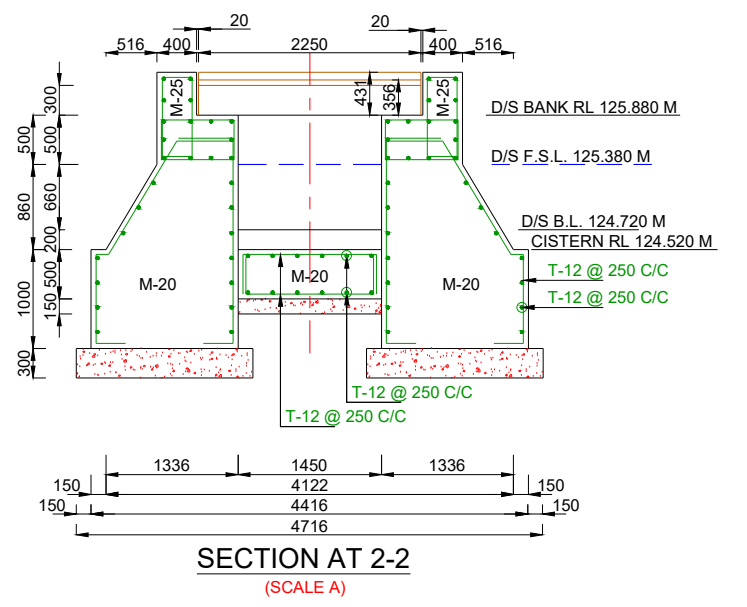
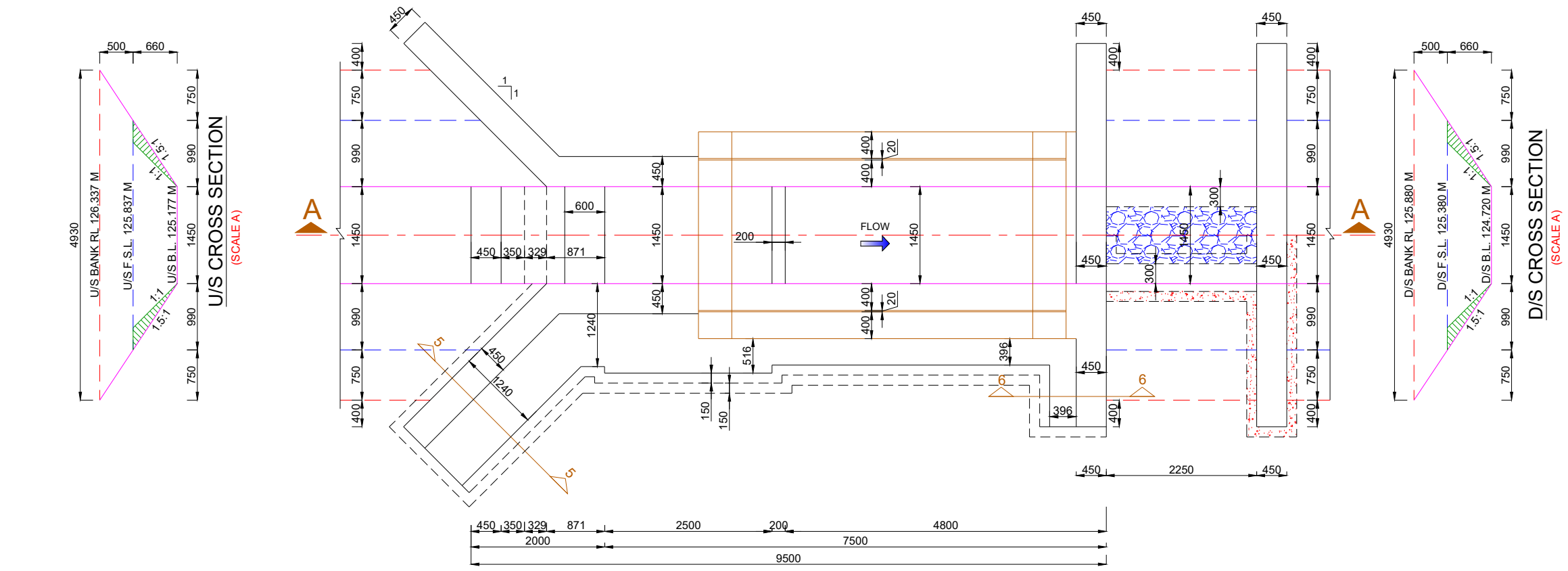


- NOTES:-**
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
 2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,

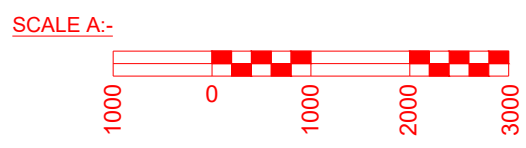
FLOOR	M 20
FOUNDATION OF ABUTMENTS & WING WALL	M 20
PCC UNDER FLOOR	M 15
ABUTMENTS / WING WALLS	M 20
 4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
 5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

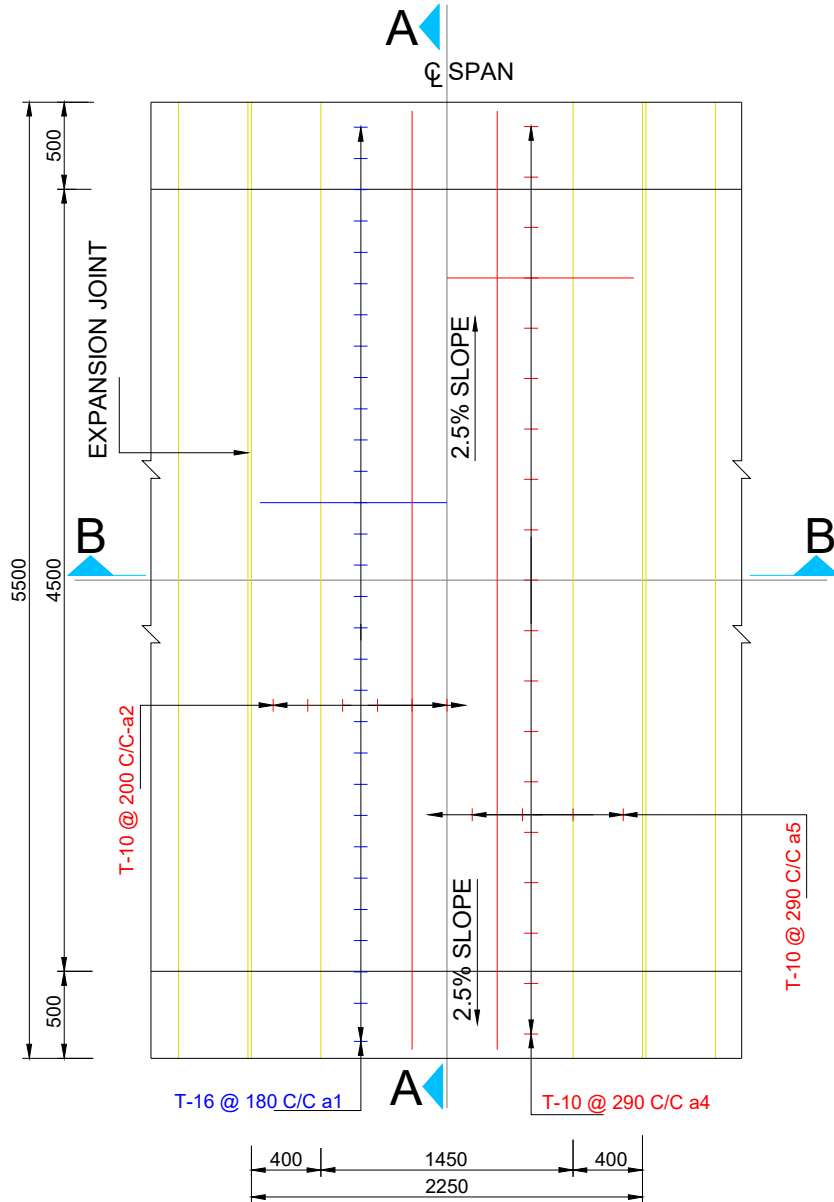
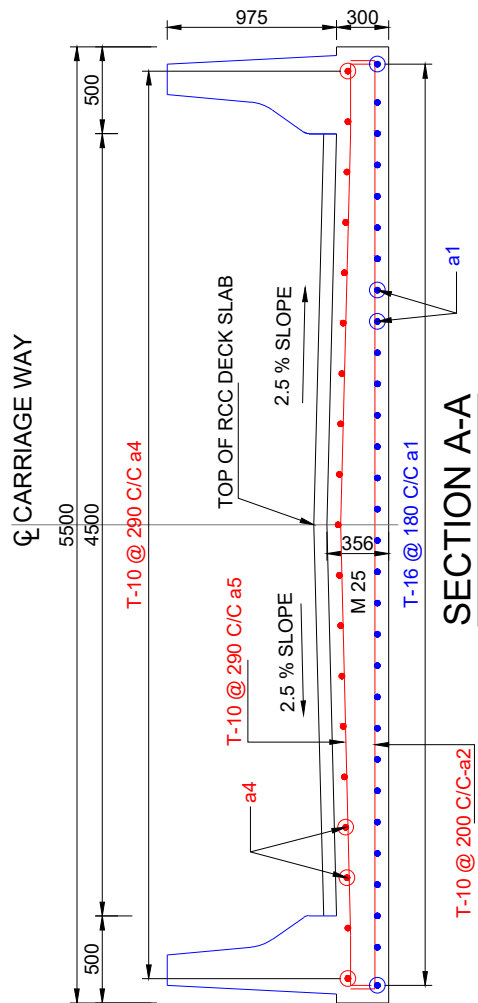
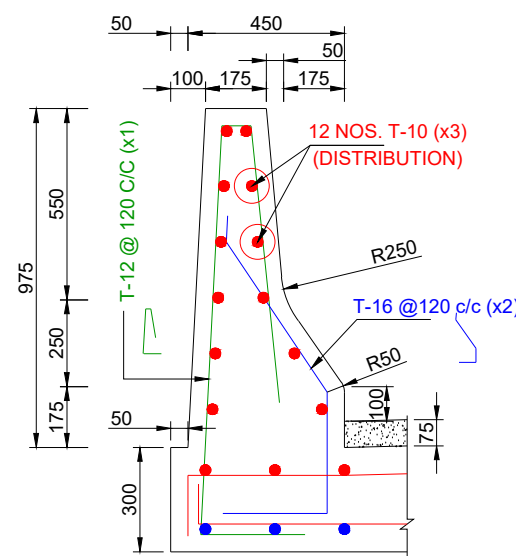
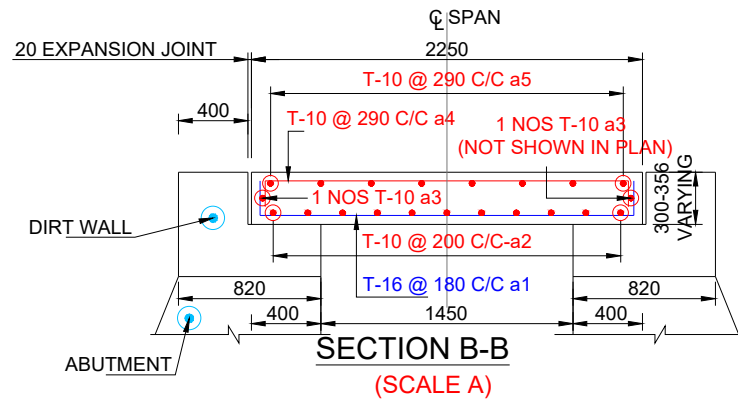
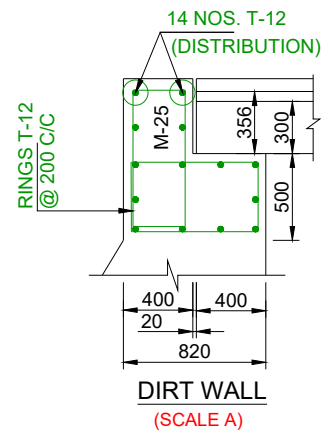
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	0.450	0.450	CUMEC
VERTICAL DROP	0.457	0.457	METRE
FULL SUPPLY DEPTH	0.660	0.660	METRE
BED WIDTH	1.450	1.450	METRE
BED SLOPE	1 : 3200	1 : 3200	



HALF TOP / HALF FOUNDATION PLAN (SCALE A)



Prepared by :- WAPCOS LTD. 	Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
	Drawing Title :-	SHARDA TYPE 0.457 M HT. FALL AT KM. 2.905 OF SONDIH-II SUB-DY. (OFFTAKE RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)
	Drawing No. :-	WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ FALL 1 of 2



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		16	180	31
2	a2		10	200	11
3	a3		10	-	2
4	a4		10	290	19
5	a5		10	290	8
CRASH BARRIER					
1	x1		12	120	18X2
2	x2		16	120	18X2
3	x3		10	-	12X2

NOTES:-

- ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
 - THE DRAWING SHALL NOT BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 - ALL CONCRETE WORK SHALL CONFORM TO IS:456 - 2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,
BRIDGE SLAB & PARAPET M-25
 - ALL REINFORCEMENT BARS SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (Fe 415) COMFORMING I.S. 1786.
 - MIN. CLEAR COVER TO ANY REINF. INCLUDING STIRRUPS SHALL BE 40 MM OR UNLESS OTHERWISE SPECIFIED.
 - 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.
 - BENDING OF REINF. BARS SHALL CONFORM TO I.S. 2502.
 - REINF. BARS SHALL BE CUT AND ADJUSTED TO ACCOMODATE DRAINAGE SPOUT.
 - 75 MM THK. WEARING COAT IN M-25 CC SHALL BE PROVIDED.
 - APPROACH SLAB & APPROACH SLAB SUPPORT SHALL BE DECIDED BY FIELD ENGINEERS ACCORDING TO THE SITE CONDITIONS.
 - TARFELT BEARING SHALL BE PROVIDED UNDER SLAB AT SUPPORT.
 - THE REINFORCEMENT OF CRASH BARRIER SHALL BE INCORPORATED BEFORE CASTING OF THE DECK SLAB.
 - 8 MM DIA BAR @ 200 C/C IN BOTH DIRECTION SHALL BE PROVIDED IN WEARING COAT AT MIDDLE DEPTH.
 - WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF SMALLER BAR.
 - 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 |
- THE DEVELOPMENT LENGTHS GIVEN ABOVE ARE FOR A STRESS OF 0.87 f_y IN THE BAR
 - THE DEVELOPMENT LENGTH INCLUDES ANCHORAGE VALUES OF HOOKS IN TENSION REINFORCEMENT.
 - 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 FOLLOWS WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50 % ONLY (IRC:112 - 2011) CLAUSE: 15.2.5.1)
LAP LENGTH = $\alpha_1 \cdot l_{bnet}$
WHERE, α_1 = 1.0 for $p \leq 25\%$
 α_1 = 1.15 for $25\% \leq p \leq 33\%$
 α_1 = 1.4 for $33\% \leq p \leq 50\%$
 - THE STRAIGHT LENGTH OF THE LAP SHOULD NOT BE LESS THAN 15Ø OR 200 MM (WHICH EVER IS MORE)
 - 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.
 - 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.
 - WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF SMALLER BAR.



Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

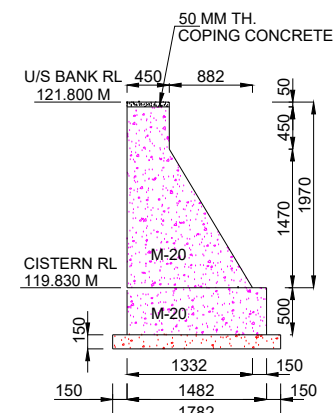
Drawing Title :-

REINFORCEMENT DETAILS OF SLAB FOR FALL CUM BRG. AT KM. 2.905 OF SONDIH-III SUB-DY. (OFFTAKE RD - 80+719 KM. (L), NORTH KOEL RMC)

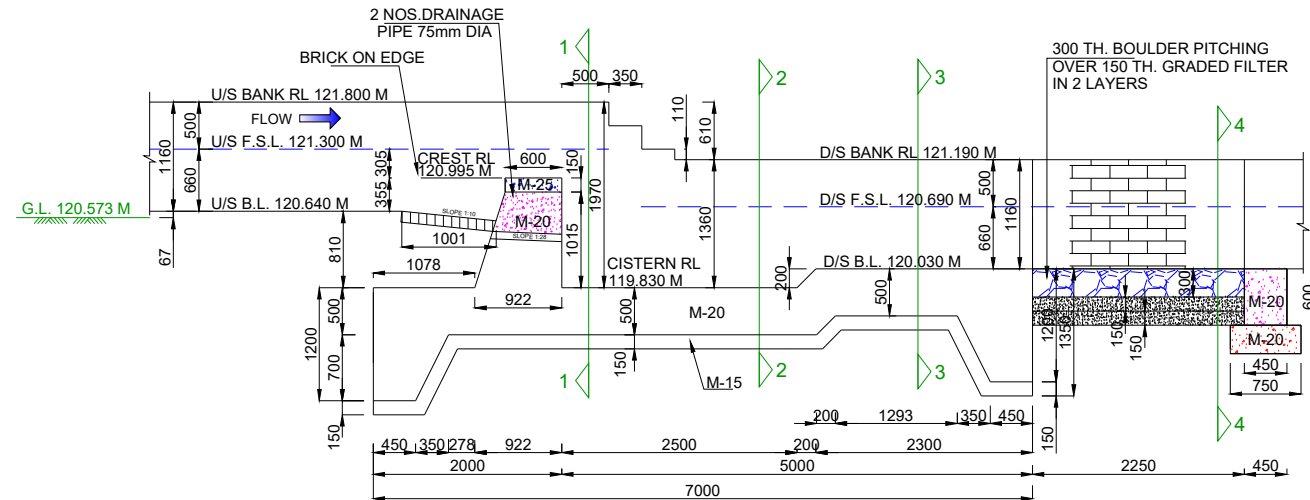
Drawing No. :-

WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ FALL

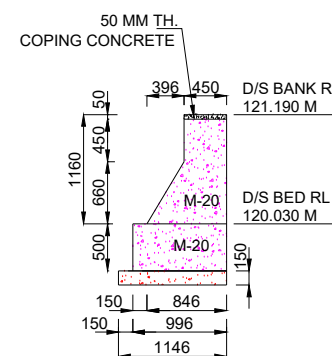
2 of 2



SECTION AT 5-5
(SCALE A)



SECTION A-A
(SCALE A)



SECTION AT 6-6
(SCALE A)

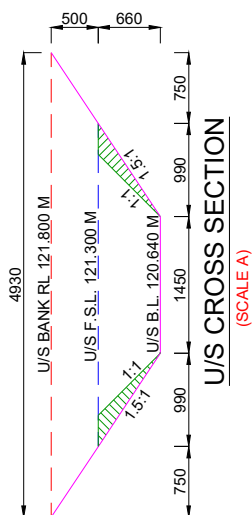
NOTES:-

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

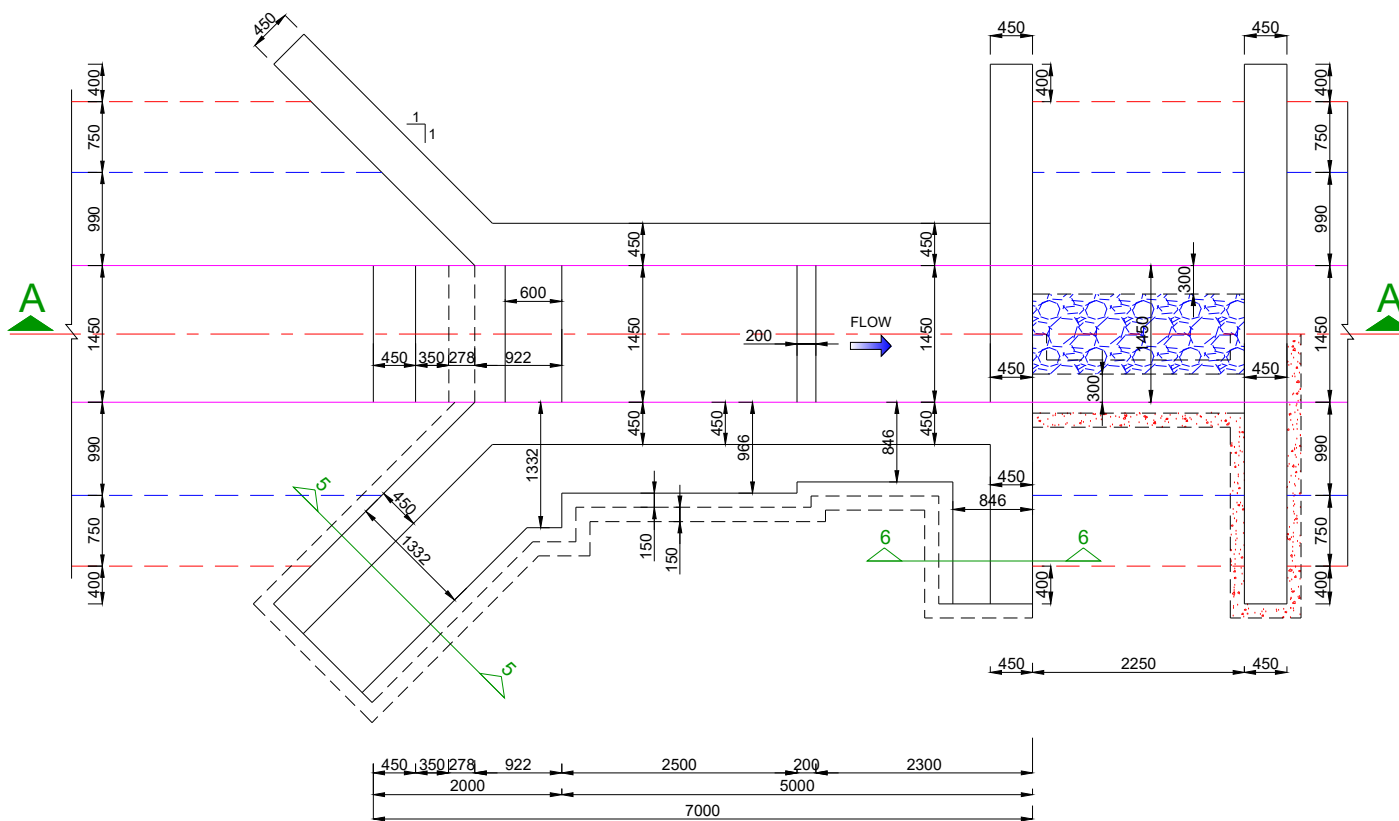
FLOOR	M 20
FOUNDATION OF ABUTMENTS & WING WALL	M 20
PCC UNDER FLOOR	M 15
ABUTMENTS / WING WALLS	M 20
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

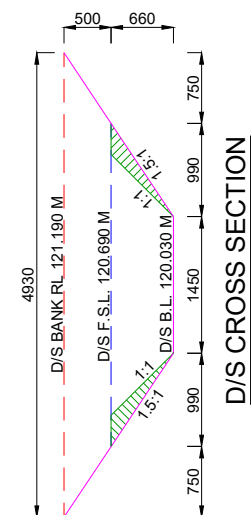
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	0.450	0.450	CUMEC
VERTICAL DROP	0.610	0.610	METRE
FULL SUPPLY DEPTH	0.660	0.660	METRE
BED WIDTH	1.450	1.450	METRE
BED SLOPE	1 : 3200	1 : 3200	



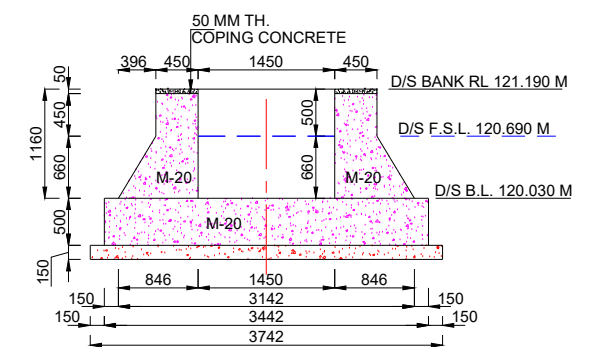
U/S CROSS SECTION
(SCALE A)



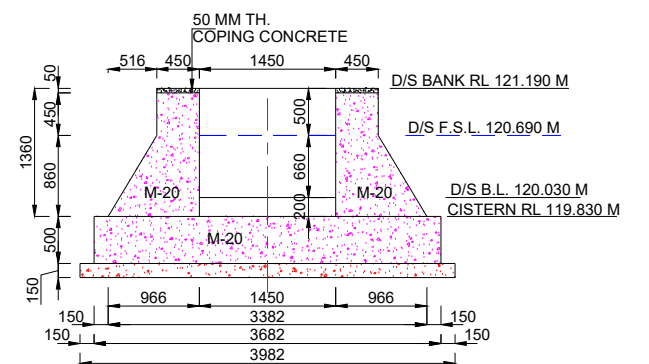
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



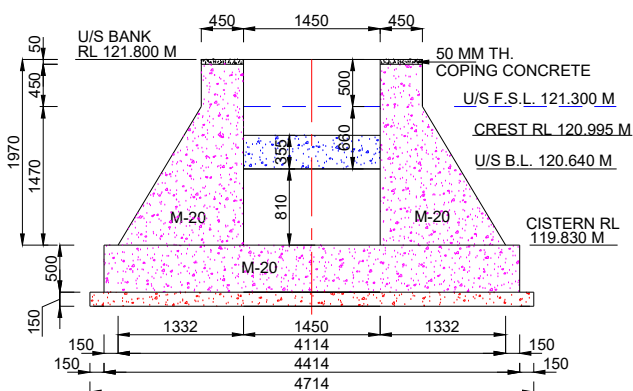
D/S CROSS SECTION
(SCALE A)



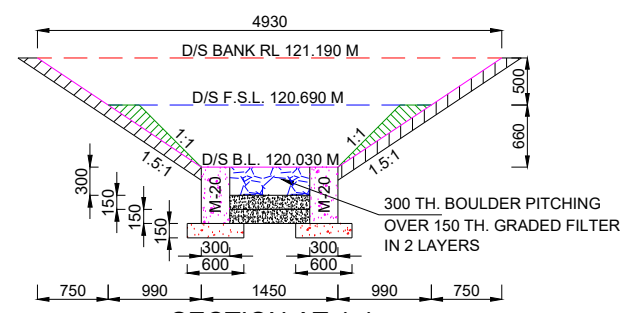
SECTION AT 3-3
(SCALE A)



SECTION AT 2-2
(SCALE A)



SECTION AT 1-1
(SCALE A)



SECTION AT 4-4
(SCALE A)

SCALE A:-



Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

SHARDA TYPE 0.610 M HT. FALL AT KM. 4.250 OF SONDIH-II SUB-DY. (OFFTAKE RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ FALL

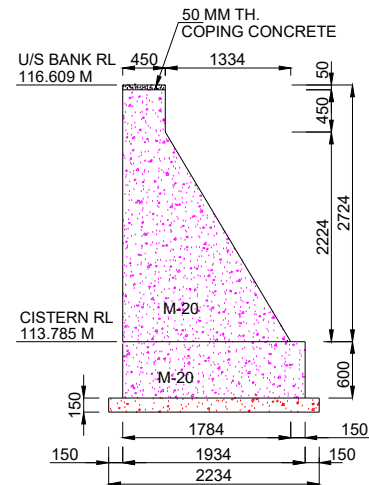
1 of 1

NOTES:-

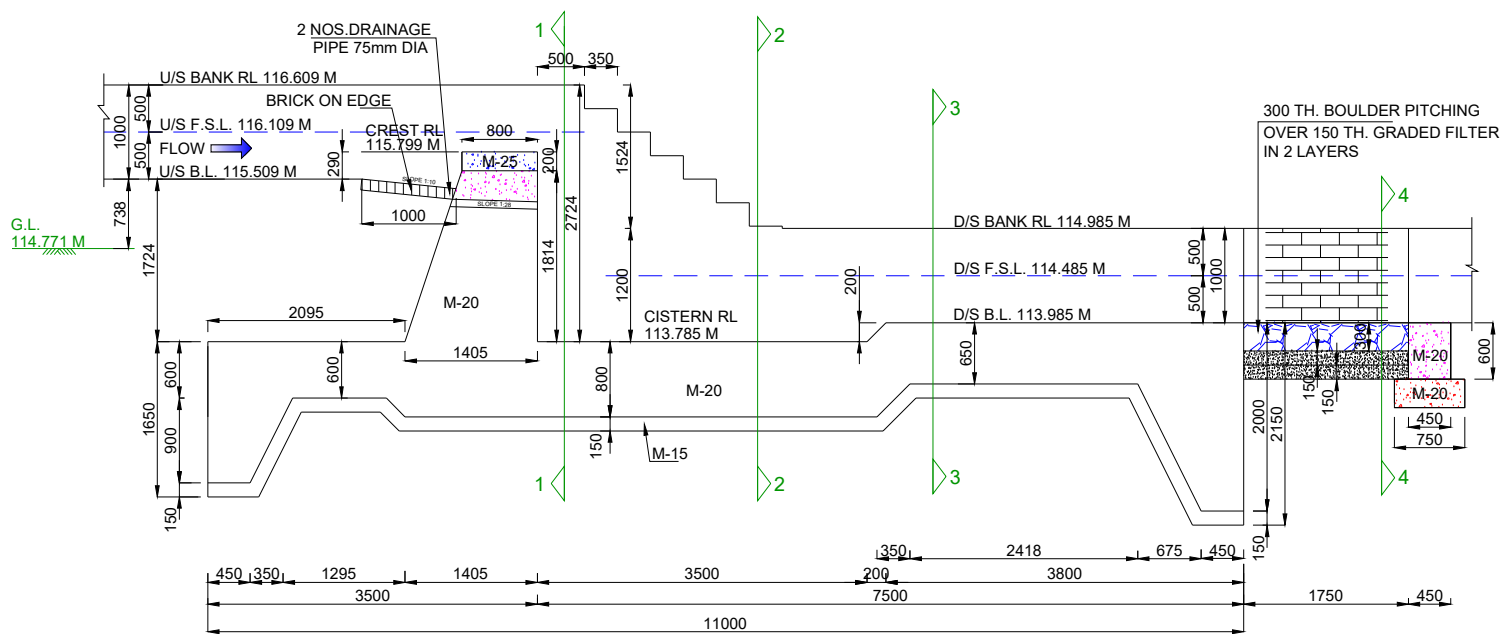
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES EXCEPT OTHERWISE MENTIONED.
2. THE DRAWING SHALL NOT BE SCALED OFF, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL CONCRETE WORK SHALL CONFORM TO IS: 456 -2000. GRADE OF CONCRETE IN DIFFERENT COMPONENTS SHALL BE AS FOLLOWS,
FLOOR M 20
FOUNDATION OF ABUTMENTS & WING WALL M 20
PCC UNDER FLOOR M 15
ABUTMENTS / WING WALLS M 20
4. ANY OVER DIGGING SHALL BE FILLED BY CONCRETE 1:3:6 GRADE.
5. SKIN REINFORCEMENT SHALL BE PROVIDED IN FLOOR AND ABUTMENT OF 12 MM DIA BARS @ 250 MM.

HYDRAULIC:- DATA

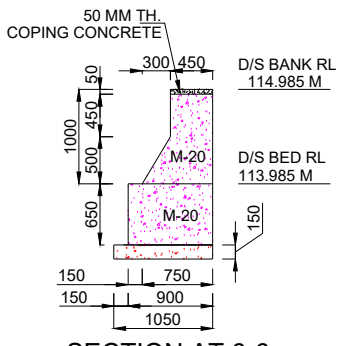
	U/S	D/S	UNIT
FULL SUPPLY DISCHARGE	0.320	0.320	CUMEC
VERTICAL DROP	1.524	1.524	METRE
FULL SUPPLY DEPTH	0.600	0.500	METRE
BED WIDTH	1.200	1.100	METRE
BED SLOPE	1 : 3100	1 : 3100	



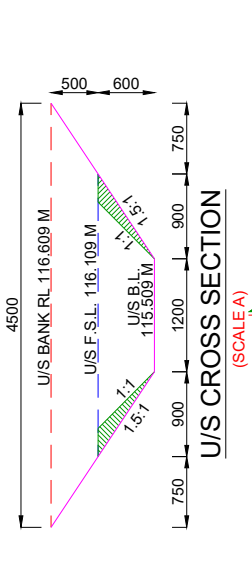
SECTION AT 5-5
(SCALE A)



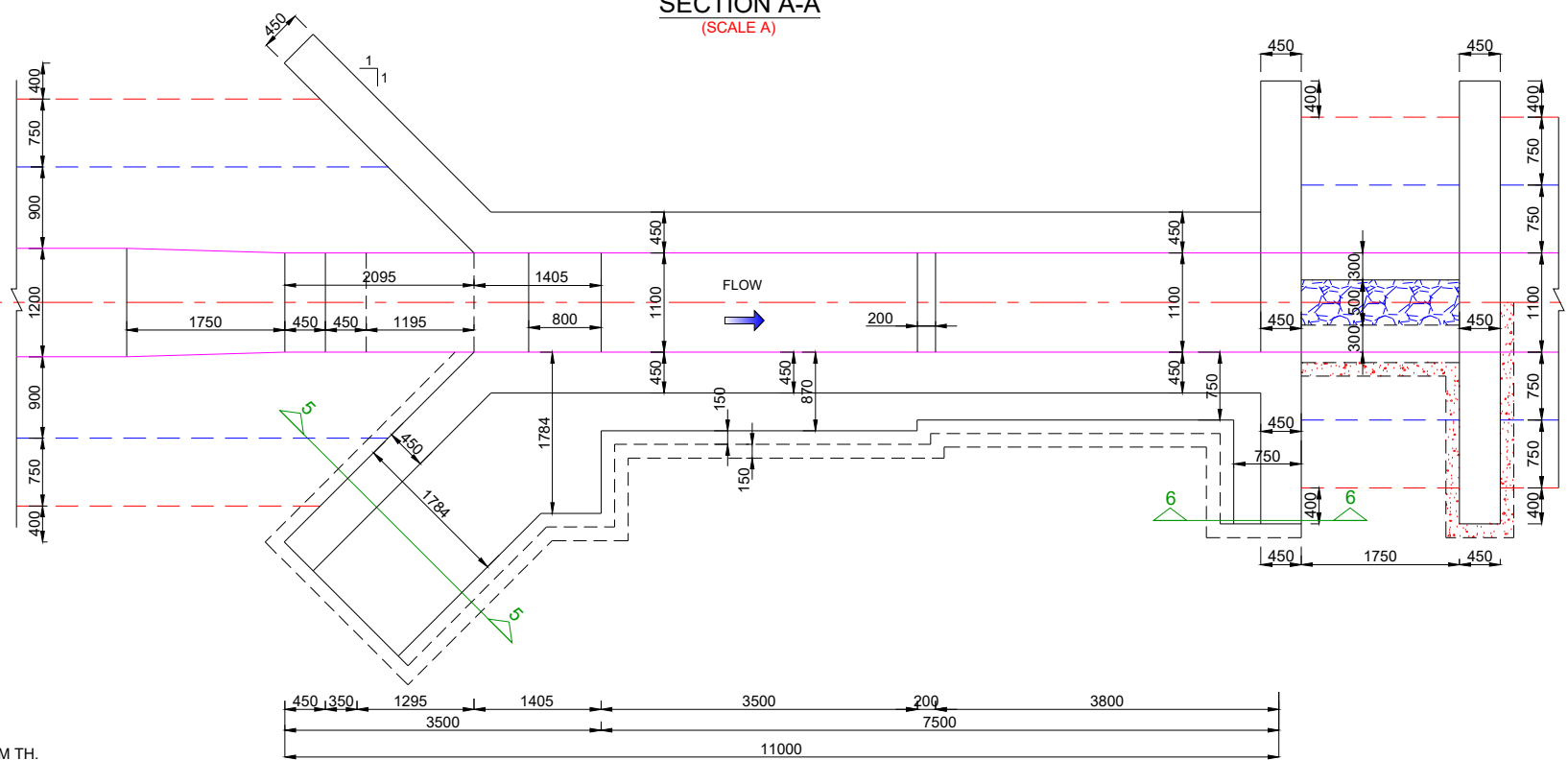
SECTION A-A
(SCALE A)



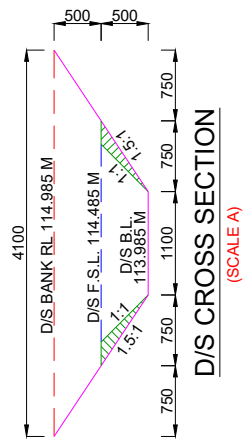
SECTION AT 6-6
(SCALE A)



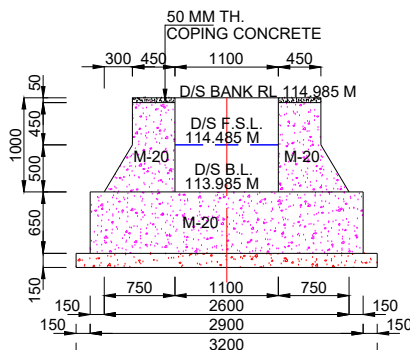
U/S CROSS SECTION
(SCALE A)



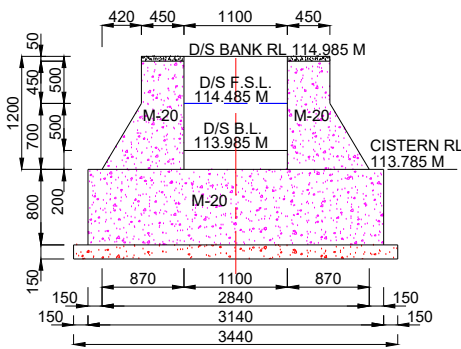
HALF TOP / HALF FOUNDATION PLAN
(SCALE A)



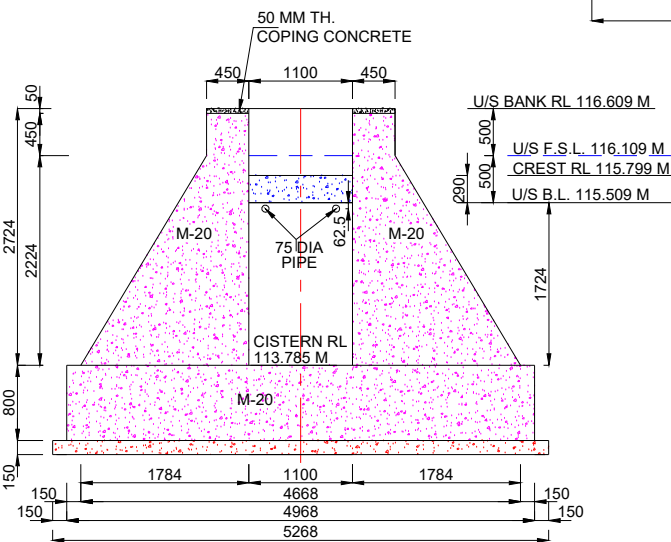
D/S CROSS SECTION
(SCALE A)



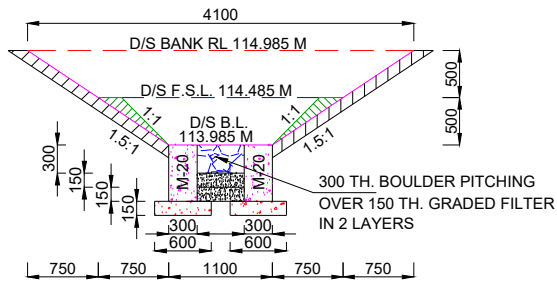
SECTION AT 3-3
(SCALE A)



SECTION AT 2-2
(SCALE A)



SECTION AT 1-1
(SCALE A)



SECTION AT 4-4
(SCALE A)

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

SHARDA TYPE 1.524 M HT. FALL AT KM. 7.500 OF SONDIH-II SUB-DY. (OFFTAKE RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

WAP/ INFRA/ NORTHKOEL/ BC/ R-28/ FALL

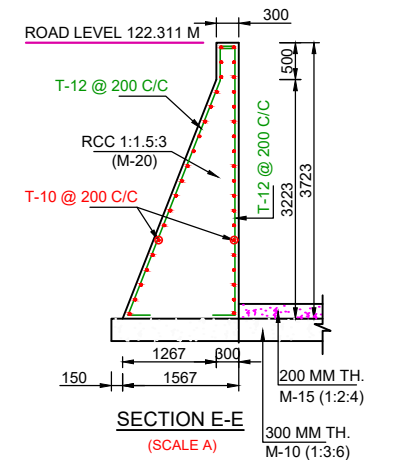
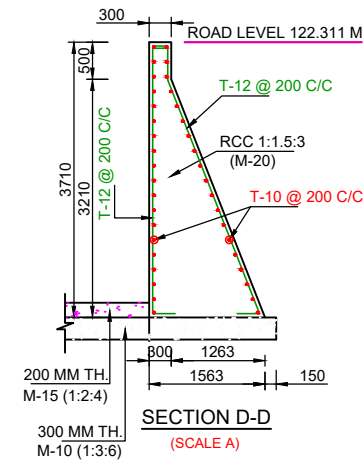
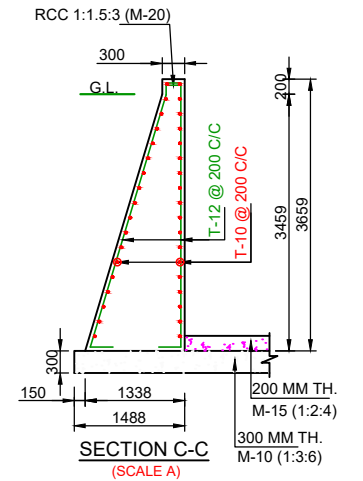
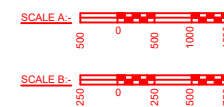
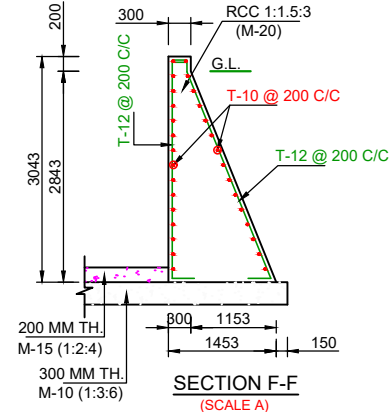
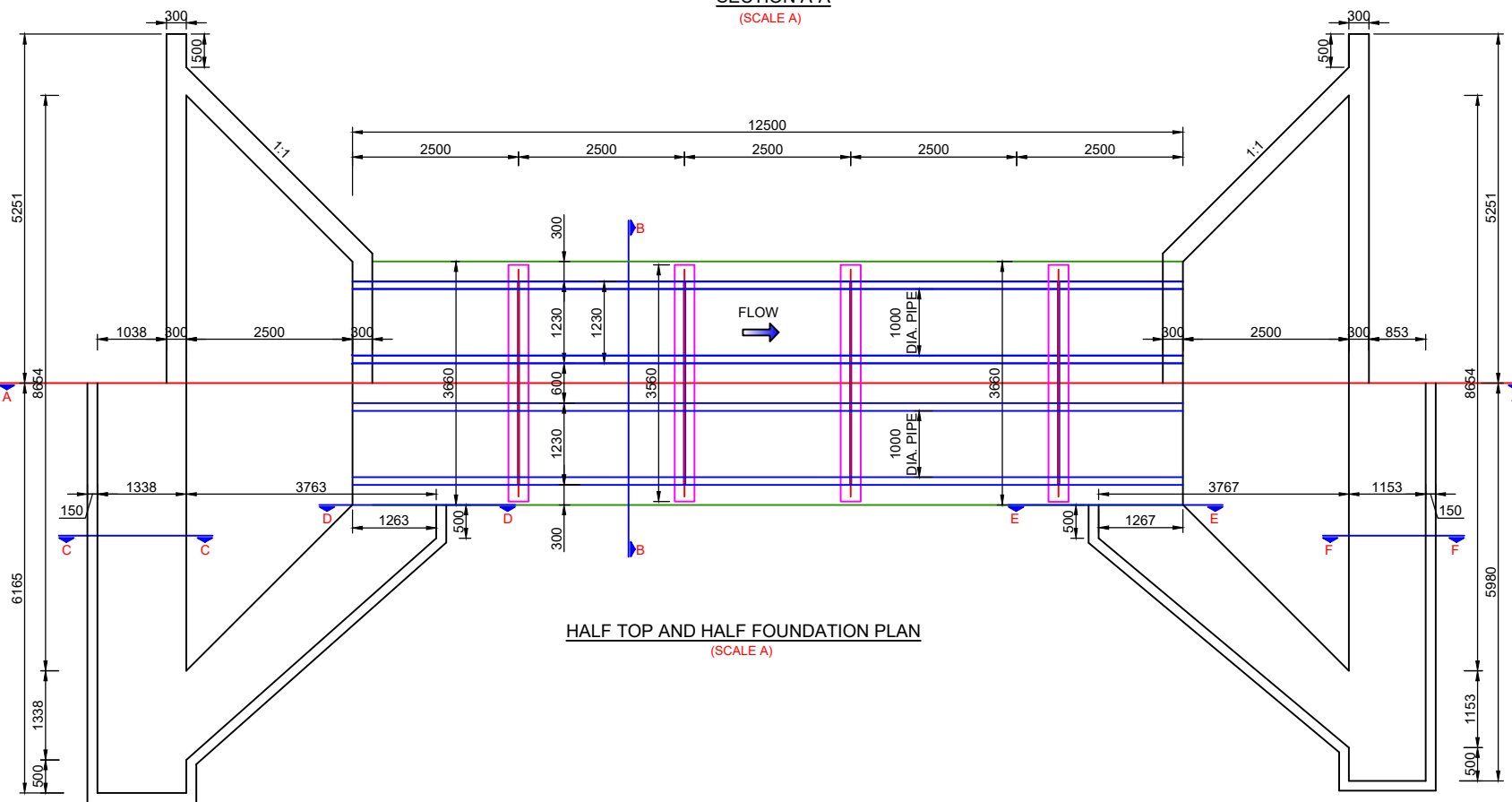
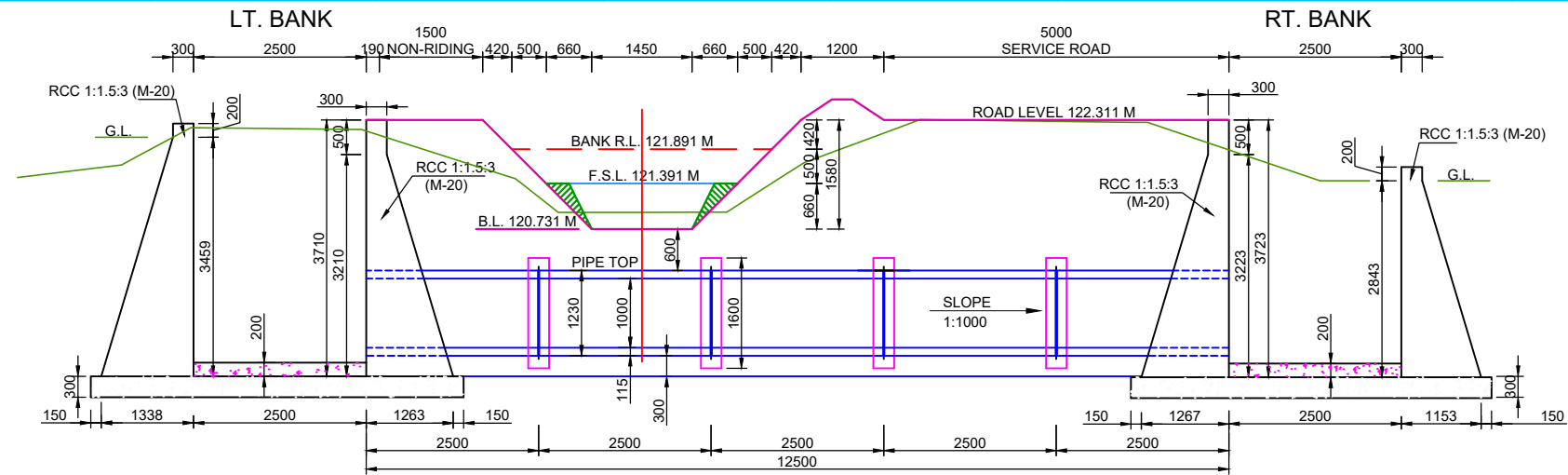
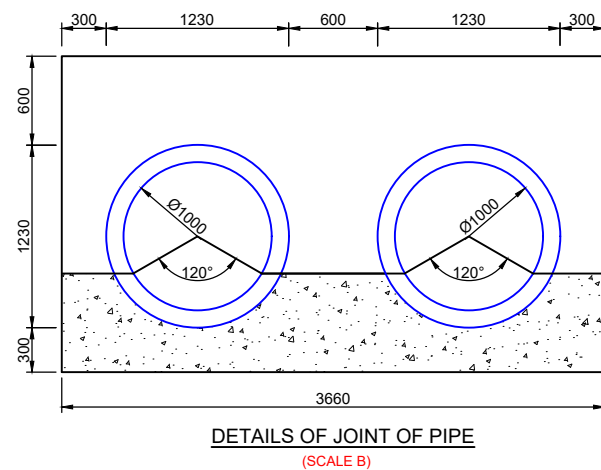
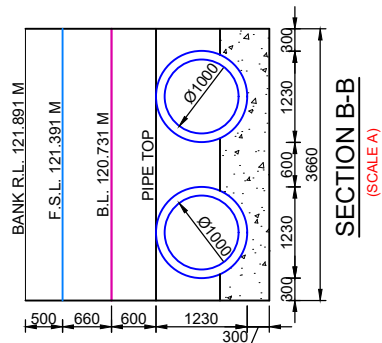
1 of 1

PROPOSED DESIGN DATA

Discharge	0.45	cumec
Bed Width	1.450	m
Water Depth	0.660	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.



Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

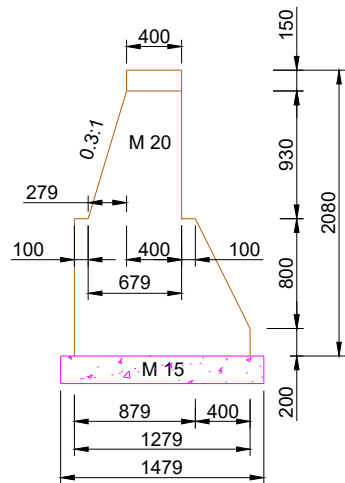
Drawing Title :-

GENERAL ARRANGEMENT DRAWING OF DRAINAGE SYPHON AT KM 3.960 OF SONDIH-II SUB-DY.

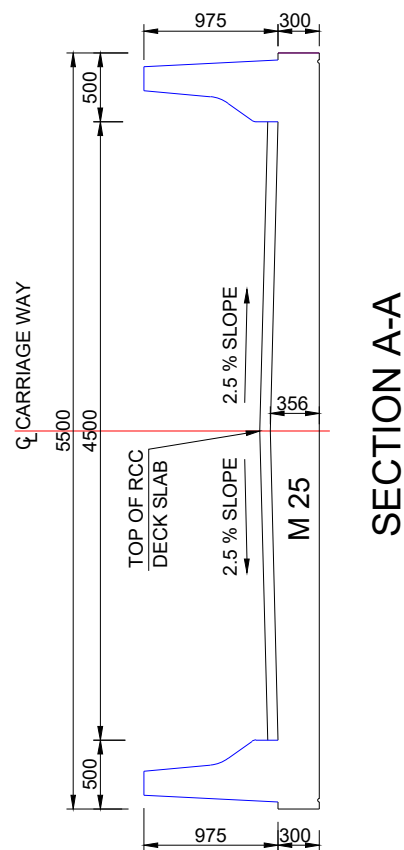
Drawing No. :-

WAP/ INFRA/ NORTHKOEL/ BC/ R-27/ CD-01

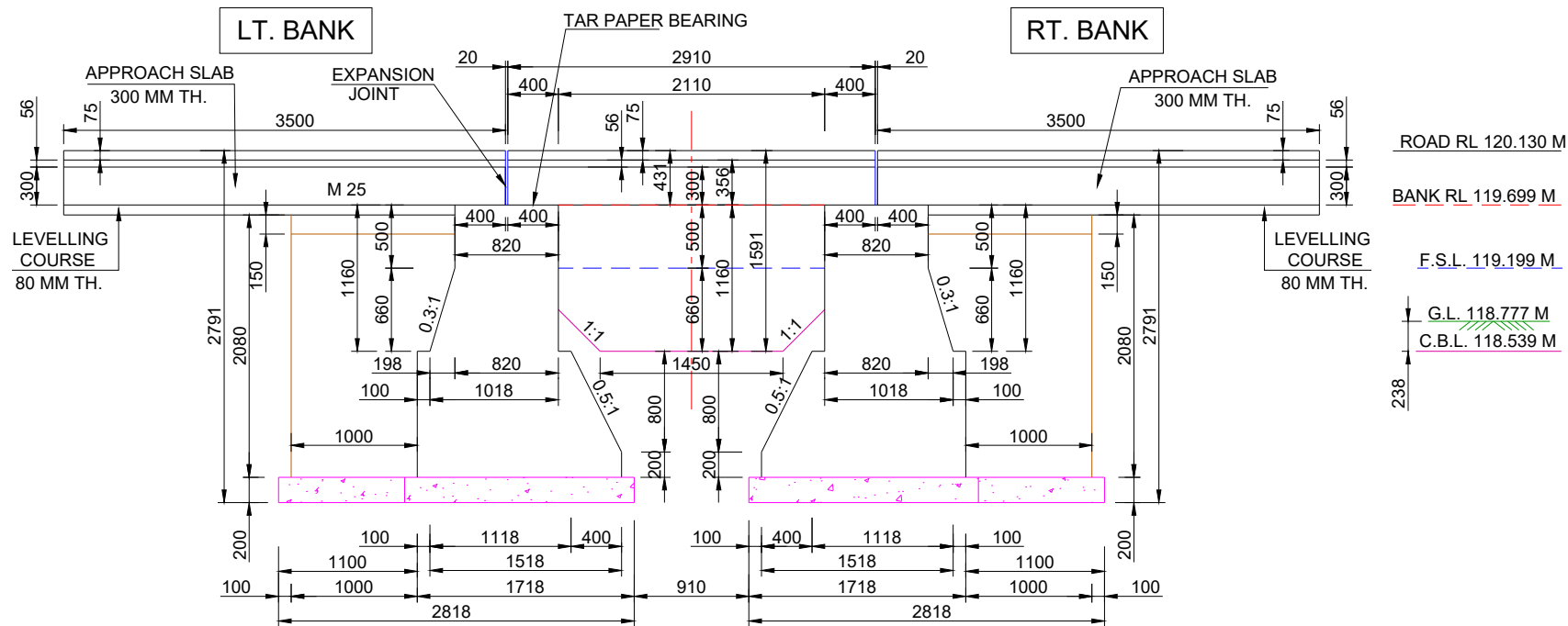
1 of 1



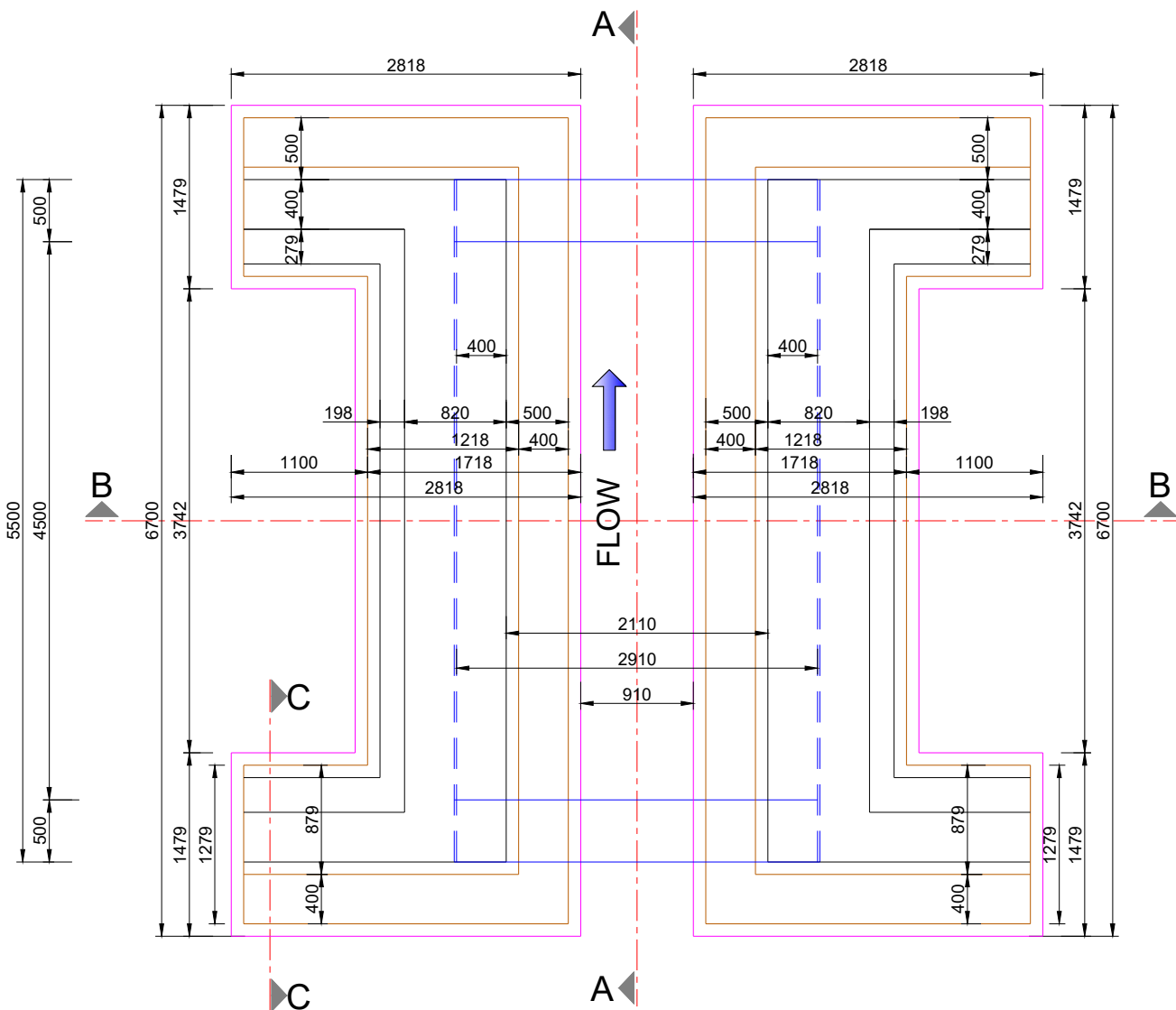
SECTION C-C



SECTION A-A

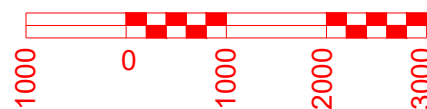


SECTION B-B



PLAN

SCALE A:-



DESIGN DATA:-

DESIGN DISCHARGE	0.450 CUMecs
BED WIDTH	1.450 M
WATER DEPTH	0.660 M
FREE BOARD	0.500 M
BED LEVEL	118.539 M
F.S.L.	119.199 M
BANK R.L.	119.699 M
CARRIAGE WAY	4.500 M
ROAD LEVEL	120.130 M
GROUND LEVEL	118.777 M

NOTES:-

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

BRIDGE	M 20 (1:1.5:3)
WING WALL	M 20 (1:1.5:3)
PARAPETS	M 20 (1:1.5:3)
BASE CONCRETE UNDER BRIDGE	M 15 (1:2:4)
SLAB	M 25 (1:1:2)
APPROACH SLAB	M 25 (1:1:2)
- MINIMUM CLEAR COVER TO ANY REINF. INCLUDING STIRRUPS SHALL BE 50 MM OR UNLESS OTHERWISE SPECIFIED.
- THE COVER INDICATED IN THIS DRAWINGS IS CLEAR COVER TO MAIN REINFORCEMENT BARS NEAREST TO THE CONCRETE SURFACE INCLUDING STIRRUPS AND BINDERS UNLESS MENTIONED OTHER WISE.
- BENDING OF REINF. BAR SHALL CONFORM TO I.S. 2502
- THE BRIDGE HAS BEEN DESIGNED FOR THE FOLLOWING ASSUMED PROPERTIES OF SOIL AT FOUNDING LEVEL AND
 - C = 0 KG/SQCM.
 - $\phi = 30^\circ$
 - ASSUMED BEARING CAPACITY 20 T/SQM
- ANY OVER DIGGING SHALL BE FILLED BY CONCRETE M-10
- THE DRAWING SHALL NOT BE SCALED OFF ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- THE DESIGN IS APPLICABLE FOR 'MODERATE CONDITION OF EXPOSURE FOR C.C. M 20 (1:1.5:3).
- TYPE OF RAILING SHALL BE DECIDED BY FIELD ENGINEERS.
- 75 MM THK. WEARING COAT IN M-25 CC WITH MAX. W.C.RATIO AS 0.4 SHALL BE PROVIDED.
- APPROACH SLAB & APPROACH SLAB SUPPORT SHALL BE DECIDED BY FIELD ENGINEERS ACCORDING TO THE SITE CONDITIONS.
- TAR PAPER BEARING SHOULD BE PROVIDED ON ALL SUPPORTS OF DECK SLAB.
- 20 MM TH. BITUMINOUS EXPANSION PAD SHALL BE PROVIDED AS EXPANSION JOINT.

Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

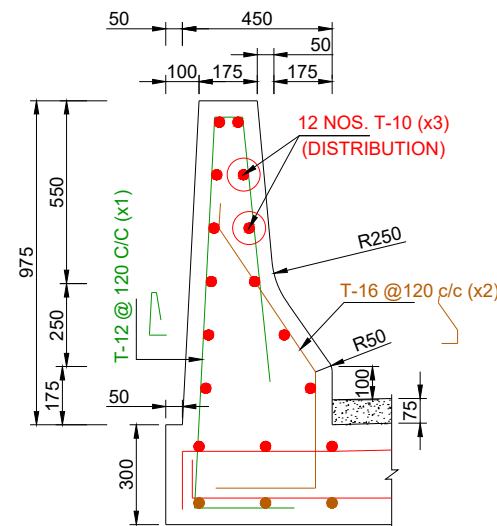
Drawing Title :-

G.A.D. OF BRIDGE AT KM. 5.120 ON SONDIH-II SUB-DY. (OFFTAKE RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

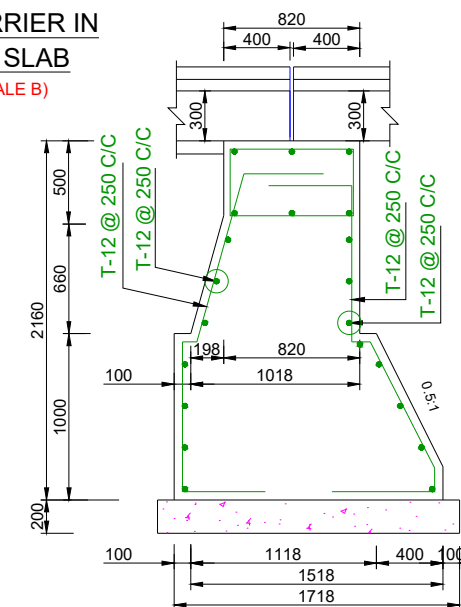
Drawing No. :-

WAP/INFRA/NORTH KOEL/DY./R-28/SLR/BRG.

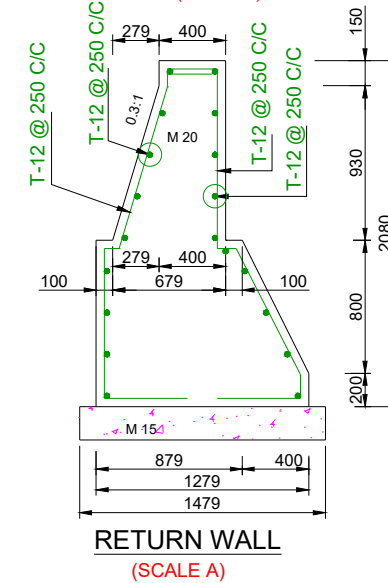
1 of 2



REINF. DETAILS OF
CRASH BARRIER IN
MAIN SLAB
(SCALE B)

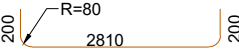
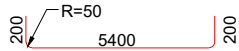
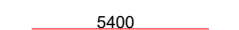
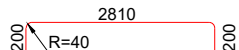
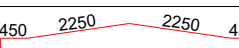


ABUTMENT
(SCALE A)

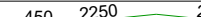


RETURN WALL
(SCALE A)

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		16	180	31
2	a2		10	200	15
3	a3		10	-	2
4	a4		10	290	19
5	a5		10	290	11

APPROACH SLAB

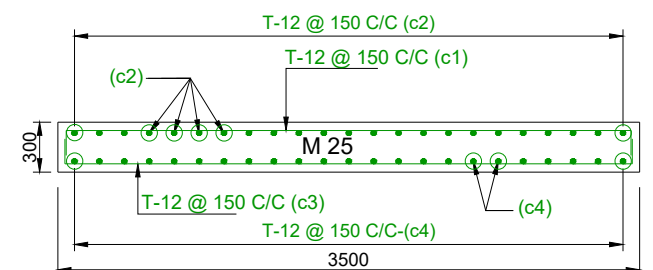
1	c1		12	150	37X2
2	c2		12	150	23X2
3	c3		12	150	37X2
4	c4		12	150	23X2

CRASH BARRIER FOR MAIN SLAB

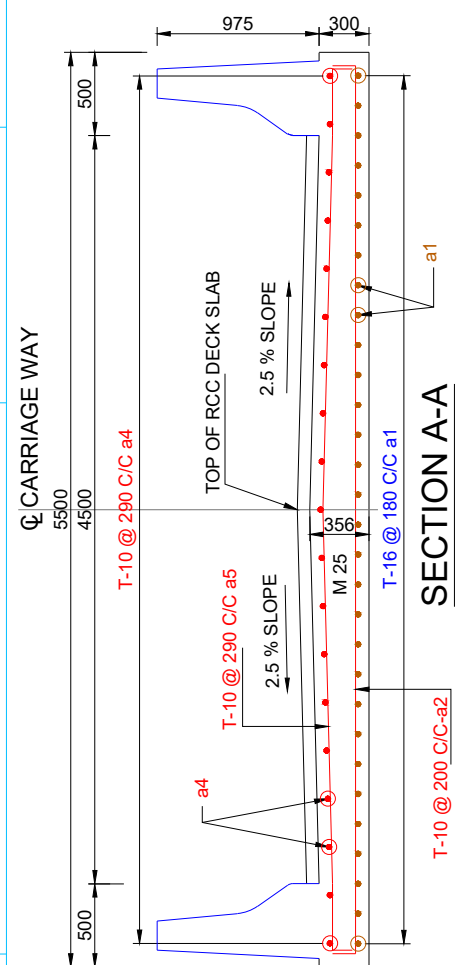
1	x1		12	120	24X2
2	x2		16	120	24X2
3	x3		10	-	12X2

CRASH BARRIER FOR APPROACH SLAB

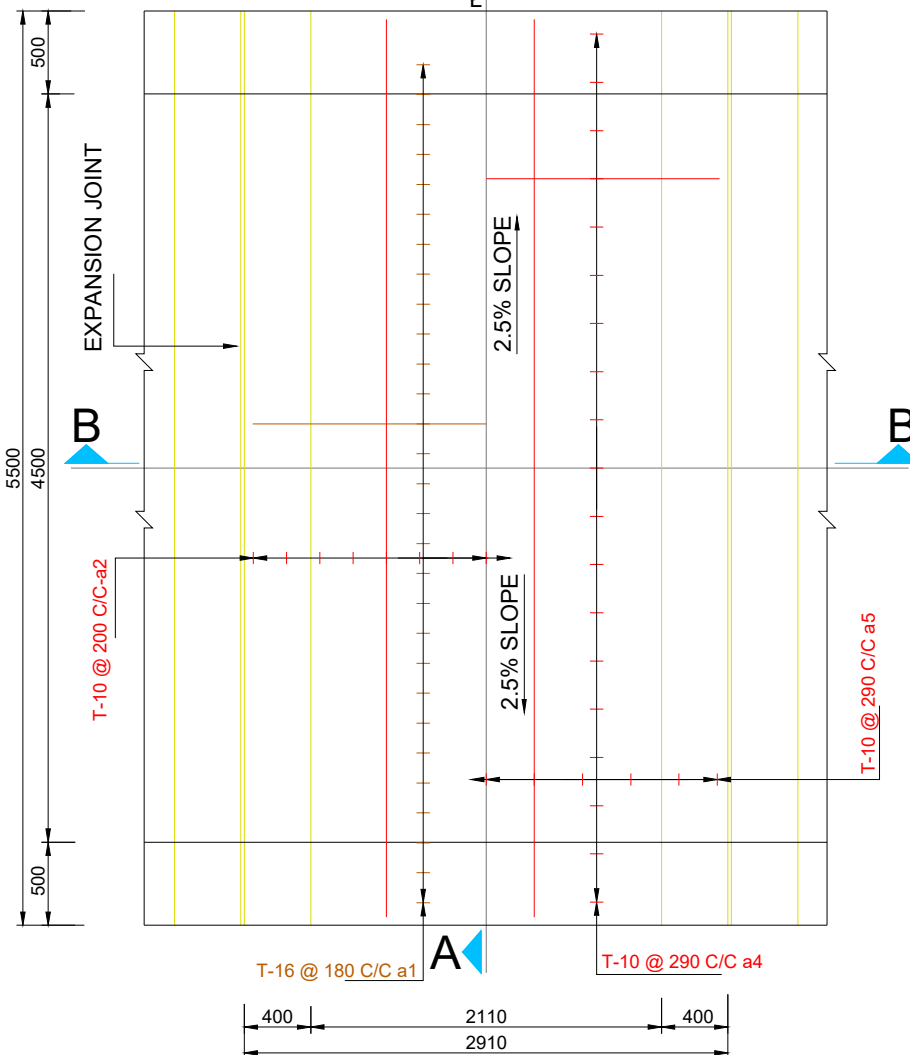
1	y1		12	120	29X2X2
2	y2		16	120	29X2X2
3	y3		10	-	12X2X2



SECTION OF APPROACH SLAB
(SCALE A)



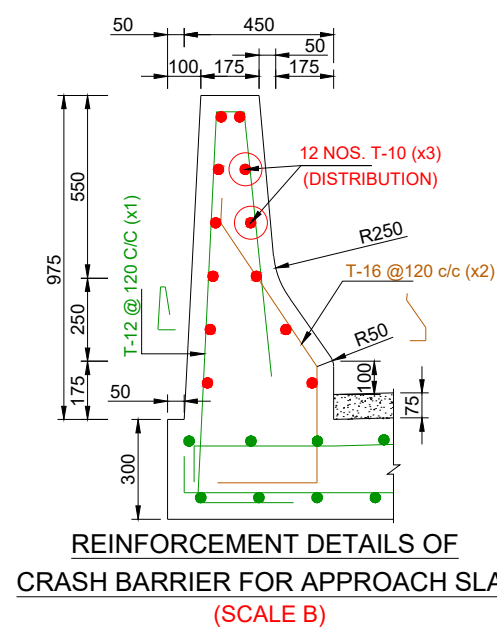
SECTION A-A



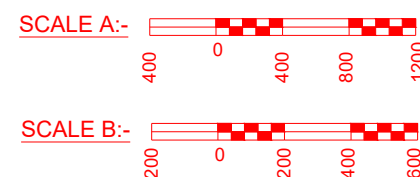
BOTTOM REINFORCEMENT TOP REINFORCEMENT

PLAN SHOWING REINFORCEMENT DETAILS OF DECK SLAB

(SCALE A)



REINFORCEMENT DETAILS OF
CRASH BARRIER FOR APPROACH SLAB
(SCALE B)



Prepared by :-

WAPCOS LTD.



Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

REINFORCEMENT DETAILS OF SLAB AT KM. 5.120 ON SONDIH-II SUB-DY.
(OFFTAKE RD - 80+719 KM. (L), NORTH KOEL RIGHT MAIN CANAL)

Drawing No. :-

WAP/ INFRA/ NORTHKOEL/ BC/ R-28/SLR/BRG.

2 of 2

