DETERMINATION OF VELOCITY AT PROPOSED SUBMERSIBLE BRIDGE

Name Of Work :- Construction of Submersible Bridge on ON KHERWARA - JAWAS - SUVERI ROAD IN KM 9/000, ACROSS RIVER SOM

AS PER UP-STREAM SECTION

HIGHEST FLOOD LEVEL **100.600** **M**

CHAINAGE	G.L.	DEPTH OF FLOW IN M	LENGTH OF FLOW	AVERAGE DEPTH OF FLOW	CROSS SECTIONAL AREA OF FLOW	WETTED PERIMETER	
0	102.000	0.00	0.00	0.00	0.00	0.00	
10	100.950	0.00	10.00	0.00	0.00	10.00	
20	98.190	2.41	10.00	1.21	12.05	10.29	98.490
30	97.590	3.01	10.00	2.71	27.10	10.02	97.890
40	97.210	3.39	10.00	3.20	32.00	10.01	97.510
50	96.870	3.73	10.00	3.56	35.60	10.01	97.170
60	97.960	2.64	10.00	3.19	31.85	10.06	98.260
70	97.120	3.48	10.00	3.06	30.60	10.04	97.120
80	96.800	3.80	10.00	3.64	36.40	10.01	96.800
90	96.470	4.13	10.00	3.97	39.65	10.01	96.470
100	96.490	4.11	10.00	4.12	41.20	10.00	96.490
110	97.040	3.56	10.00	3.84	38.35	10.02	97.340
120	97.290	3.31	10.00	3.44	34.35	10.00	97.590
130	97.740	2.86	10.00	3.09	30.85	10.01	98.040
140	98.130	2.47	10.00	2.67	26.65	10.01	98.430
150	98.850	1.75	10.00	2.11	21.10	10.03	99.150
160	98.070	2.53	10.00	2.14	21.40	10.03	
170	98.750	1.85	10.00	2.19	21.90	10.02	
180	101.850	0.00	10.00	0.92	9.25	10.17	
190	102.000	0.00	10.00	0.00	0.00	10.00	
		TOTAL	190.00		490.30	190.71	

A 490.30 SQM
P 190.71 M

CHAINAGE	G.L.	DEPTH OF FLOW IN M	LENGTH OF FLOW	AVERAGE DEPTH OF FLOW	CROSS SECTIONAL AREA OF FLOW	WETTED PERIMETER
	R	2.57	M			
	N	0.033				
	S 1 IN	960				
	V	1.84	M/SEC			
	Q	899.93	CUMECS			

The design engineer visually observed the river to ascertain the Roughness Coefficient n for the Manning's formula. Upon visual inspection of the river in the vicinity of the proposed bridge site it was found that the River bed surface is good with clean straight banks, no rifts or deep pools however containing some weeds and stones. Roughness Coefficient pertaining to these characteristics is 0.033

Design Discharge = 899.93 CUMECS

Critical Levels		
Road top level (RTL)	101.600	M
Average Ground Level(AGL)	96.600	M
Average Height Of Bridge	5.000	M
Lowest Nala Bed level (NBL)	96.470	M
Ordinary flood level (OFL)	97.600	M
Foundation level (FL)	93.470	M
Ht. of bridge h= (RTL-NBL)	5.130	M
Ht. of bridge H=(RTL-FL)	8.130	M

**** Needs Rational Evaluation w.r.t. afflux.**

**** Average of GL for points lying below HFL.**