

# RAJIV SAGAR (BAWANTHADI) PROJECT

## STATUS –REPORT

### 1.GENERAL :

Rajiv Sagar (Bawanthadi) Project, a joint venture of the states of Madhya Pradesh and Maharashtra, is a Major Irrigation Scheme under construction on the river Bawanthadi. The Dam site is near village Kudwa in Katangi Tehsil of Balaghat district in M.P. and village Sitekasa of Tumsar tehsil of Bhandara district in Maharashtra. The construction of dam and Left Bank Canal is to be carried out by Madhya Pradesh and that of Right Bank Canal is to be carried out by Maharashtra while the cost of the dam is to be shared equally by the two states. The cost of L.B.C. and R.B.C. have to be borne by Madhya Pradesh and Maharashtra respectively. On completion, the project is proposed to irrigate 18,615 Ha. land of Balaghat district in M.P. by Left Bank Canal and 17,537 Ha. land in Bhandara district in Maharashtra by Right Bank Canal. At 158% Crop Intensity 29,412 Ha. land of Balaghat District and 27,708 Ha. land of Bhandara District will be irrigated.

### 2.PROJECT AT AGLANCE :-

The 6420 m long main dam consists of earthen embankment at both the flanks, 220 m long masonry dam in the river portion with maximum height of 31 m, having 110 m long non over flow section. Six number 15 m x 12 m. size Radial gates have been provided to discharge flood water of 12616 cumecs. at F.R.L. 344.40 m. The gross reservoir capacity is 280.241 Mm<sup>3</sup> and live capacity is 217.32 Mm<sup>3</sup>.

The 80.52 Km. long left Bank canal having head discharge of 22.275 Cumecs will irrigate 18615 Ha. land of 97 villages of Katangi and Waraseoni tehsil of Balaghat District in M.P.

The 26.60 Km. long right bank canal having head discharge of 21.00 Cumecs will irrigate 17,537 Ha. land of 85 villages of Tumsar Tehsil of Bhandara District of Maharashtra state.

Salient features of the project are enclosed in **Annexure - I**

### 3.ADMINISTRATIVE APPROVAL :-

The position of Administrative Approval is as under :

Administrative Approval for Rs.1181.75 Lakhs vide Govt. of M.P. Irrigation Department Memo No. F/10/8/73/IS/33/ Dated 10/11/75.

Administrative Approval for Rs.1165.52 Lakhs vide Govt. of Maharashtra memo No. PIM/8075/176/T-25 Secretriare Bombay Dated 12/09/75.

First Revised Administrative Approval for Rs.7179.43 Lakhs has been accorded by the Govt. of Maharashtra for their portion of the work vide their No.BDP.1088/2073/295/88 -MP(2) Dated 12-8-93.

First Revised Administrative Approval for Rs.8978.037 Lakhs has been accorded by the Govt. of M.P. vide their No.28/19/31/MPS/86/1376/ Dated 18/10/93.

Second Revised Administrative Approval for Rs.18200.79 Lakhs has been accorded by the Govt. of Maharashtra for their portion of the work vide their No.MSID/2101/2884/01/MP(2) Dated 07.12.2001.

Second Revised Administrative Approval for **Rs.19499.175** Lakhs has been accorded by the Govt. of M.P. vide their No.M.P.WRDCB/31/02/2259/207 Dated 02.03.2002.

As per present price level (year 2009) the third revised estimate of project for Rs. 140719.159 lakh has been prepared by the both states and submitted to the state Govt. for third revised administrative approval. The details are as under.

(Rs. Lakh)

Particulars	Revised Estimated Cost	Share of M.P.	Share of M.S.
UNIT-I HEAD WORKS	32751.170	16375.585	16375.585
UNIT-II CANALS			
Left Bank Canal	49410.470	49410.470	-
Right Bank Canal	58557.519	---	58557.519
<b>TOTAL</b>	<b>140719.159</b>	<b>65786.055</b>	<b>74933.104</b>

(Abstract of revised Estimate of M.P. is enclosed as **Annexure-II.**)

#### **4.C.W.C.CLEARANCE :-**

The Central water Commission, New Delhi has accorded approval on 24-04-89 as under:

The technical advisory committee of Irrigation and flood control for multipurpose projects, in its 43<sup>rd</sup> meeting held in New Delhi on 18.05.89 found the project fit for approval, provided that:-

( a ) Rehabilitation & Resettlement Plan be submitted to the ministry of social welfare and environments.

- (i) The G.O.I. Ministry of Environment and forests has accorded approval the Rehabilitation and Resettlement plan vide their letter No. J-12011/10/87-IA-1 dated 05.05.1990.
- (ii) The G.O.I. Ministry of welfare/Kalyan Mantralaya New Delhi has also accorded approval to Rehabilitation and Resettlement plan vide their letter No. 20017/12/89-TD (B) dated 30.10.1990.
- (iii) The 146<sup>th</sup> Meeting of Technical advisory committee of irrigation flood control for multipurpose project is held on 12.05.2010 at New Delhi the revised project cost Rs. 1407.19 Crores has been approved and Recommended for Investment Clearance from G.O.I. Planning commission New Delhi.

( b ) Detailed Programme for utilization of ground water potential be submitted to the Directorate of P.A.D. ( C).

( c ) Approval of the Finance and Planning Departments of the state be obtained for the revised cost of the project.

G.O.I. Planning Commission has also accorded investment clearance vide their letter No.244/99-I & CAD New Delhi Dtd. 16.12.99 for Rs.161.57 Crore.

## **5.ENVIRONMENTAL CLEARANCE :**

Govt. of India, Ministry of Environment and forest New Delhi vide their letter No. J-12011/10/89-IA Dt. 28/4/89 have cleared the scheme subject to certain conditions which are being complied with, both at field and Govt. level. The Govt. of M.P. vide their letter No.28/19 / 31/ MPS/86/2256 Bhopal Dated 4/9/90 have accepted the conditions.

## **6.FOREST CLEARANCE :-**

The Govt. of India Ministry of Environment and Forest vide their letter No.8-478/82-FC/ Dated 28/4/89 have accorded approval for transfer of 1940.02 Ha. Forest land of M.P. and 2448.10 Ha. forest land of Maharashtra. The Govt. of M.P. vide their letter No.28/19/31/MPS/ 86/2256 Bhopal Dated 4/9/90 have accepted the conditions.

## **7.POSITION OF PROPOSAL OF ADDITIONAL FOREST LAND :-**

The final approval of additional forest land under project has been accorded by G.O.I. the Ministry of Environment and forest vide their Memo No. F-No. 8-478/1982-FC dated 20.04.2010.

## **8.POSITION OF LAND ACQUISITION :-**

Particulars of land proposed to be acquired by respective states are given below.

(Figures in Ha.)

Details	Land Approved by GOI		TOTAL	Land Surrender to forest Deptt.		TOTAL	Land Acquired		Percentage	
	M.P.	M.S.		M.P.	M.S.		M.P.	M.S.	M.P.	M.S.
1	2	3	4	5	6	7	8	9	10	11
<b>Forest Land</b>										
Head Works	1146.28	2860.22	4006.50	100.191	479.40	579.591	767.97	2380.82	67	84
Canals	1267.05	420.509	1687.559	313.150	-	313.150	480.00	4.16	38	1
Total :-	2413.33	3280.729	5694.059	413.341	479.40	892.741				
<b>Private Land</b>										
Head Works	82.58	1045.04	1127.62	---	---	---	82.58	1045.04	100	100
Canals	700.00	514.01	1214.01	---	---	---	550.00	300.99	79	58.5
<b>Govt. Land</b>										
Head Works	71.40	139.60	211.00	---	---	---	71.40	139.60	100	100
Canals	97.00	375.00	472.00	---	---	---	80.00	---	82	--

## **8.1.REHABILITATION:**

PARTICULARS	M.P.	M.S.	TOTAL
No. of villages coming under submergence	1 (Land only)	10 (2 Partial)	11
No. of families affected	37 (land, owner)	759	796
Population affected	-	3519	3519

## **8.2 AFFECTED PROPERTY (UNIT - I)**

PARTICULARS	M.P.	M.S.	Total	COST (Rs. Lakhs)
Buildings, House (Nos.)	7 (Kachha)	632	639	396.95
Trees(Nos.)	4657	2851	7508	18.85
Others(Wells) Nos.	2	118	120	3.80
Others Temples	-	11	11	
Others Govt. Buildings	-	15	15	

## **9.PRESENT POSITION OF WORK :-**

### **(i) EARTHEN DAM :-**

#### **R.D. 0 to 3678.50 m.(Left flank)**

The Earthwork in this reach has been completed.

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#### **R.D. 3898.50 to 3960 m. (Right Flank) :**

Regarding Price bid of 12<sup>th</sup> Tender of River Clouser work of Rajiv Sagar Project the P.R.C. Meeting held on dated 10.05.2010 and price bid has been sanctioned. Tender agreement procedure under progress.

#### **R.D. 3960 to 6420 m (Right flank) :**

The work is completed up to TBL .

### **(ii) MASONRY DAM ( Spillway):- R.D. 3678 M. to 3898 M. :-**

The Over flow blocks are also completed up to crest level. i.e. 332.40. All piers were raised up to hoist level. Construction of Deck Bridge have been completed. The masonry work of Non Over flow blocks has already been completed up to T.B.L. i.e. 348.65

### **(iii) RADIAL GATES.**

The erection of radial gates for the project is being done by Mechanical wing of Govt. of M.S.. The work is in progress. At present the work of zenty crane and rails radial gate is in progress. Thus 99% work of Radial gates have been completed.

### **(iv) CANAL HEAD SLUICE:-**

- ( I ) **Left Sluice** :- This work is 100% completed.
- ( II ) **Right Sluice** :- This work is 100% completed.

## **10. POSITION OF RIVER CLOSER OF THE PROJECT :-**

The construction of Head work nearly completed 95%. The balance work for the river closer work will be executed between R.D. 3898.50 m. to 3960.00 m. In this aspect, the twelfth call for tender of this work called which price beed opened on dated 18.02.09 and submitted to the Secretary Control Board Major Irrigation project Bhopal for approval and observed that :-

- (i) Approval letter of G.O.I. M.o.E.F. New Delhi for according final approval to the additional forest land.  
In compliance of the above, the compliance report of the condition raised by the G.O.I. M.o.E.F. has already been submitted by the Principal Chief Conservator of forest/Nodal Officer Bhopal to the Inspector General of forest M.o.E.F. New Delhi for final approval of additional forest land 473.31 Ha. of M.P. Portion. The compliance report of forest condition of Maharashtra portion for additional forest land 828.469 Ha. has not been submitted to the G.O.I. so far Hence the final approval has not been accorded by the G.O.I. till now.
- (ii) **Extension of validity of Tender** :- The validity extension of the contractor received up to 30.03.2010.
- (iii) Approval of technical advisory Committee :-

The revised estimate of the project has also been submitted to the C.W.C. New Delhi and compliance has been completed for approval.

## **11. POSITION OF REHABILITATION AND RESETTLEMENT OF VILLAGES COMING UNDER SUBMERGENCE :-**

The Rehabilitation and Resettlement of the fully effected 8 No. village of Maharashtra State work are being done by Irrigation Department of Maharashtra State. As per programme this work is to be completed up to March-2010.

## **12. CONSTRUCTION PROGRAMME:-**

It is proposed to complete the project by June 2010. Physical statement showing the

annual progress for the year 2009-2010 is enclosed as **Annexure –IV**.

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**13. BUDGET REQUIREMENT:-**

Revised year wise construction programme for head work is as under-  
(Rs. In Lakh)

<b>YEAR</b>	<b>HEAD WORK</b>
2009-2010	6000.00
2010-2011	1213.00
<b>TOTAL</b>	<b>7213.00</b>

The expenditure done on the Unit-I Head work up to 04/2010 is Rs. **29401.36** Lakh. (Year wise expenditure statement is attached as **Annexure –V**). There is provision of Rs. 5178.97 Lakh in the budget of 2009-10. (work 5011.37+ Estt. 167.60).

The project is included under A.I.B.P. in the year 2003-04 in month of 10/2003 for completion of balance works amounting to Rs 108.07 Crore (Loan 86.36+State Share 21.71=108.07 Crore). Expenditure under AIBP on H/W up to April – 2010 is Rs. **76.87 Crore**.

**14. YEAR WISE EXPENDITURE & SHARE RECEIVED FROM MAHARASHTRA :-**

Year wise expenditure done on the project and share received from M.S. is Shown in **Annexure-V**.

**15. TARGET FOR COMPLETION OF PROJECT :-**

River closer work will be completed up to 6/2011 and target for completion of project is 06/2011.

**16. POINTS NEEDING ATTENTION:**

- (i) Final approval to the additional forest land 473.31 Ha. in M.P. and 828.469 Ha. in M.S. by the G.O.I. M.o.E.F. New Delhi.
- (ii) T.A.C. approval by the G.O.I.

## RAJIV SAGAR PROJECT SALIENT FEATURES

1 Purpose	Irrigation		
2 Location			
Latitude	21 <sup>o</sup> -32''-30'		
Longitude	79 <sup>o</sup> -32''-30'		
Toposheet No.	55 <sup>o</sup> / <sub>10</sub>		
Nearby Village	Kudwa (M.P.) / Sitekasa (M.S.)		
Tehsil	Katangi (M.P.) / Tumsar (M.S.)		
District	Balaghat(M.P.) / Bhandara (M.S.)		
3 River/Basin	Bawanthadi, Tributary of Wainganga in Godawari Basin		
4 Catchment Area in Sq.Km.	<u>M.P.</u>	<u>M.S.</u>	<u>TOTAL</u>
	764	601	1365
5 Average Annual Rainfall	1,162.55 mm.		
6 Yield	Mm <sup>3</sup> /TMC		
(a) 75% Dependability	475.72/16.80		
(b) Upstream Reservation	113.27/4.00		
(c ) Balance available at Dam Site (a-b)	362.45/12.80		
(d) Regeneration	11.32/0.40		
(e) Net available (a-b+d)	373.78/13.20		
7 Water Utilisation (Mm <sup>3</sup> /TMC)	M.P.	M.S.	TOTAL
(a) Irrigation	<u>158.88</u>	<u>149.68</u>	<u>308.56</u>
	5.614	5.289	10.903
(b) Annual evaporation losses	<u>26.26</u>	<u>24.74</u>	<u>51</u>
	0.928	0.872	1.8
(c ) Drinking Water	<u>6.00</u>	<u>6.00</u>	<u>12.00</u>
	0.212	0.212	0.424
8 Storage Planning(Mm <sup>3</sup> /TMC)	M.P.	M.S.	TOTAL
(a) Gross Storage Capacity	-	-	<u>280.241</u>
			9.9
(b) Dead Storage Capacity	-	-	<u>62.921</u>
			2.22
(c ) Live Storage Capacity	<u>108.66</u>	<u>108.66</u>	<u>217.32</u>
	3.84	3.84	7.68
9 Principle Levels(Meters)			
(a) T.B.L.	348.65		
(b) M.W.L.	345.60		

(c) F.R.L.	344.40
(d) Spillway Crest	332.40
(e) Minimum draw down level	336.75
(f) L.S.L.(L.B.C.)	333.50
(g) L.S.L.(R.B.C.)	333.50
(h) Lowest River bed Level	317.60

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#### 10 Dam.

(a) Type of Dam	Earthen Dam & Masonry Central Spillway
(b) Free Board	3.05 m.
(c) Maximum Height	31.00 m.
(d) Total length including Spillway	6420 m.

#### 11 SPILLWAY

(a) Type	Gated ogee shaped
(b) Design Flood	12,616 Cumecs/Sec.
(C) Number and Size of Gates	6 No. (15 m x 12 m.)
(d) Length (o.f.)	110 m.
(e) Maximum Height above river bed	31 m.

12 Submergence (Hectares)	M.P.	M.S.	TOTAL
(a) Reservoir	1090.579	3418.125	4508.708
(b) Dam Seat	86.24	44.475	130.715
(C) No. of villages affected	1	10	11
	(Partial)	(2Partial)	(3Partial)
13 Canal	L.B.C.	R.B.C.	
(a) Length (Km.)	80.52	26.6	107.12 Km.
(b) Head discharge (Cum./Sec.)	22.275	21	
14 Command Area (Hectares)			
(a) Gross Command	37,410	39,459	76,869
(b) Culturable Command	23,786	25,062	48,848
(C) Design Irrigation	18,615	17,537	36,152
(d) Annual Irrigation @158% intensity of irrigation	29,412	27,708	57,120
15 Share of cost between the states(Rs.Lakhs) (As per 3 <sup>rd</sup> R.A.A. proposal)			
(a) (i) Maharashtra	73913.338	(50% of Unit I + R.B.C.)	
(ii) Madhya Pradesh	65844.465	(50% of Unit I + L.B.C.)	
(iii) TOTAL	<b>139757.793</b>		
(b) As per proposed 3 <sup>rd</sup> RAA			
(i) Madhya Pradesh	Rs. 65786.055		
(ii) Maharashtra	Rs. 74933.104		
(iii) TOTAL	<b>Rs. 140719.159</b>		
16 Cost of Storage per Mm <sup>3</sup> of water (Rs.Lakhs)	647.52		
17 Percentage of submergence			

to design Irrigation area	12.20
18 Benefit Cost ratio	1.56
19 Cost per Hectare of area Irrigation	
(a) Madhya Pradesh	Rs. 223670/Hact.
(b) Maharashtra	Rs. 266758/Hact.

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**ANNEXURE-II**

**RAJIV SAGAR PROJECT (DISTT. BALAGHAT.)**

**GENERAL ABSTRACT**

S. No.	SUB HEAD	UNIT-I	UNIT-II
1.	'A' Preliminary	118.74	116.31
2.	'B' Land	2172.40	238.21
3.	'C' Works	10185.48	634.80
4.	'D' Regulators	266.05	103.42
5.	'K' Buildings	214.34	83.08
6.	'E' Falls	-	96.19
7.	'F' C.D. Works	-	2025.63
8.	'G' Bridges	-	438.57
9.	'H' Escapes	-	111.66
10.	'L' Earth Work	-	3644.09
11.	'M' Plantation	8.00	70.34
12.	'O' Miscellaneous	491.35	288.93
13.	'P' Maintenance	125.30	94.44
14.	'Q' Special T & P	74.00	13.74
15.	'R' Communication	412.29	102.46
16.	'U' Distributaries	-	1728.84
17.	'X' Environment	953.18	116.38
18.	'Y' Losses on stock	31.64	23.85
19.	Establishment	1284.87	1063.57
	Cost control cell	9.93	7.23
20.	Ordinary T & P	150.21	99.07
21.	Audit Charges	150.21	99.07
22.	Suspense (R&R)	(-) 51.02	(-)12.88
23.	Capitalized value of abatement & land Revenue	7.46	9.96
	<b>TOTAL</b>	<b>16604.43 = 8302.215</b> <b>2</b>	<b>11196.96</b>

Share of M.P.- 8302.215 + 11196.96 = - 19499.175 Lakhs

**ANNEXURE-III****RAJIV SAGAR (BAWANTHADI) INTER STATE PROJECT****GENERAL ABSTRACT**

S. No.	SUB HEAD	UNIT-I	UNIT-II
1.	'A' Preliminary	408.27	154.93
2.	'B' Land	3241.10	1867.57
3.	'C' Works	16053.63	303.99
4.	'D' Regulators	267.05	254.70
5.	'K' Buildings	770.00	190.18
6.	'E' Falls	-	170.65
7.	'F' C.D. Works	-	3550.28
8.	'G' Bridges	-	1477.08
9.	'H' Escapes	-	137.14
10.	'L' Earth Work	-	21865.24
11.	'M' Plantation	157.93	163.81
12.	'O' Miscellaneous	1201.24	729.17
13.	'P' Maintenance	179.69	403.19
14.	'Q' Special T & P	74.00	19.75
15.	'R' Communication	962.09	-
16.	'U' Distributaries	-	10460.23
17.	'W' Drain	-	100.00
18.	'X' Environment & Ecology	7919.78	916.38
19.	'Y' Losses on stock	44.92	101.80
20.	a) Establishment	3082.51	4509.84
	b) Cost control cell	23.33	32.15
21.	Ordinary T & P	312.32	428.66
22.	Receipt & Recoveries	(-) 20.00	-
23.	a) Capitalized value of abatement & land Revenue	23.33	73.43
	b) Audit and account charges.	312.32	428.66
24.	Suspense (R&R)	40.00	(-) 21.12
	<b>Total Direct and indirect charges.</b>	<b><math>\frac{35053.51}{2} = 17526.755</math></b>	<b>48317.71</b>

Madhya Pradesh 50% share + LBC

17526.755 + 48317.71  
= Rs. 65844.465 Lakhs

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**ANNEXURE-V**

**YEARWISE EXPENDITURE DONE ON HEAD WORK & SHARE**

**RECEIVED FROM MAHARASHTRA STATE**

(Rs. In Lakhs )

Year	Unit-I	Share received from Maharashtra
	Head Works	
Up to 3/79	40.07	7.20
79-80	6.28	10.00
80-81	73.60	60.59
81-82	134.83	76.07
82-83	204.55	181.1
83-84	96.29	100.7
84-85	32.64	-----
85-86	23.26	-----
86-87	23.27	-----
87-88	31.83	-----
88-89	0.99	-----
89-90	14.40	-----
90-91	66.91	-----
91-92	67.44	-----
92-93	59.75	-----
93-94	108.65	200.00
94-95	453.23	227.00
95-96	207.47	564.50
96-97	423.38	-----
97-98	905.82	-----
98-99	1504.13	400.00
99-2000	2046.34	690.00
2000-2001	2350.34	1125.78
2001-2002	1575.32	178.86
2002-2003	1086.12	-----
2003-2004	639.43	-----
2004-2005	627.28	-----
2005-2006	940.88	800.00 500.00 287.18
2006-2007	520.79	
2007-2008	456.96	
2008-2009	465.72	
2009-2010	4921.790	

2010-2011 Up to 04/2010	25.27	
<b>TOTAL</b>	<b>20159.24</b>	<b>5408.98</b>
Total Exp. by M.S. up to 12/2009	9242.12	-
<b>G. Total up to 04/2010</b>	<b>29401.36</b>	<b>5408.98</b>



**PHYSICAL PROGRESS FOR THE MONTH OF 04/2010 STATE:M.P.**

**AIBP: Name of the Project:- Rajiv Sagar Project, Annual Progress for the year 2010-11**

S. No.	Item of A.I.B.P.	Unit	Revised Estimated Qty.	Progress up to 3/2009	Programme for 2010-11	Achievement up to the end of the previous month	Achievement during the month 04/2010	Cumulative Achievement for the Year (7+8)	Remark
1	2	3	4	5	6	7	8	9	10
1	<b>Unit-I Head Works :</b>								
	i) Land Acquisition (Private)	Ha.	82.583	77.378	5.205	-	-	-	
	ii) Land Acquisition (Forest)	Ha.	1046.089	767.97	378.119	-	-	-	
	<b>EARTHWORK</b>								
	1.Excavation:	Th.Cu.M.	740	740	Nil	-	-	-	
	2.Embankment	Th.Cu.M.	4436	3859	350	-	-	-	
	3. Masonry	Th.Cu.M.	72 (Revi.)	72	Nil	-	-	-	
	4.Concrete	Th.Cu.M.	113.40	112.935	0.175	-	-	-	

**Executive Engineer  
Rajiv Sagar Project Dn. No. 2  
Kudwa , Distt. Balaghat**



**Office of the Executive Engineer  
Rajiv Sagar Project Dn. No.-2  
Kudwa, Distt. – Balaghat**

Memo No. /TS/Status Report/Kudwa Date :  
.10.2009  
To,

**The Superintending Engineer  
Rajiv Sagar Project Circle,  
Balaghat.**

**Sub :- Submission of Status Report for the month of 07/2009.**

Kindly find enclosed here with the Status Report for the Month of 07/2009 for favour information please.

**Encl :-** 2 No. Status Report **Executive**  
**Engineer** **Rajiv Sagar Project Dn. No.-**  
**2** **Kudwa, Distt. – Balaghat**  
**(M.P.)**

Endt. No. /TS/Status Report/Kudwa Date :  
.08.2009

**Copy Submitted to :-**  
Chief Engineer, Wainganga Basin Water Resources Department  
Seoni for favour information please.

**Encl :-** 2 No. Status Report **Executive**  
**Engineer** **Rajiv Sagar Project Dn. No.-**  
**2** **Kudwa, Distt. – Balaghat**  
**(M.P.)**