GOVERNMENT OF MEGHALAYA

Soil & Water Conservation Department

West Khasi Hills District

UMNEI - UMSOHPHIE

Integrated Wasteland Management Programme (IWMP IX)

2011-12 to 2015-16

Summary

1. Name of State	:	Meghalaya
2. Name of District	:	West Khasi Hills
3. Name of C&RD Block	:	Mawshynrut Block
4. Numbers of Villages	:	9 (Nine) Numbers
5. Name of Villages	:	a. Thangtngaw. b. Nongrynniaw. c. Mawngap Kynjang. d. Mawngap. e. Porsohsan. f. Mawdongkiang. g. Mawstieh. h. Porkrong. i. Mawtirang.
6. Name of Project	:	West Khasi Hills IWMP IX
7. Total geographical Area	:	1721 Ha
8. Total Treatable Area	:	1500 Ha
9. Total Project Cost	:	225.00 Lakhs
10. Project Duration	:	5 (Five) Years: - 2011-12 to 2015-16
11. Project Implementing Agency	:	Soil & Water Conservation Division, Nongstoin

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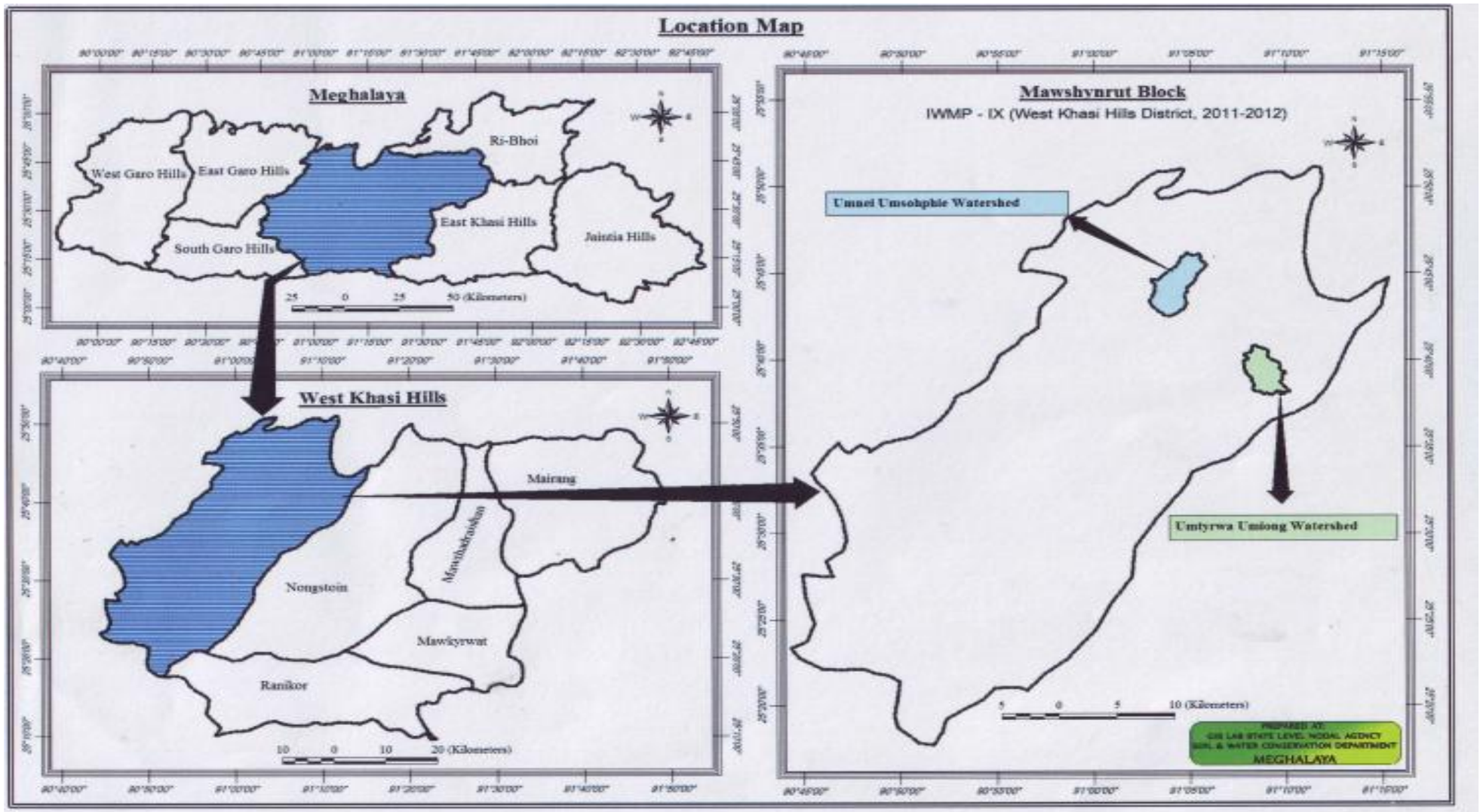
Location Map
Meghalaya
West Garo Hills
East Garo Hills
Ri-Bhoi
East Khasi Hills
Jaintia Hills
South Garo Hills
25 0 25 50 (Kilometers)
West Khasi Hills
Mairang
Nongstoin
Mawkyrwat
Ranikor
10 0 10 20 (Kilometers)
Mawshynrut Block
IWMP - IX (West Khasi Hills District, 2011-2012)
Umnai Umsohphie Watershed
Umtyrwa Umiong Watershed
5 0 5 10 (Kilometers)
MEGHALAYA

CHAPTER – 1
INTRODUCTION AND BACKGROUND

1.1 Project Back ground: -

Umnei-Umsohphie (IWMP-IX) Poject is located in Mawshynrut C&RD Block, West Khasi Hills District of Meghalaya consisting of Two Micro Watershed. The Project Area is drained by Umnei-Umsohphie River and its tributaries flowing in the North Western side direction and finally to Tyrsung. The Total Area is 1721 Ha with 1500 Ha to be treated under the Integrated Watershed Management Programme (IWMP).

The Project is located at a distance of about 60 Km from Nongstoiñ Head Quarter and about 15 Km from Mawshynrut the Administrative units and Block Head Quarter. A total of 9 villages are covered under the Projects. These are: -

1. Thangtngaw.
2. Nongrynniaw.
3. Mawngap.
4. Mawngap Kynjang.
5. Porsohsan.
6. Mawtirang.
7. Porkrong.
8. Mawstieh.
9. Mawdongkiang.

1.2 Micro Watershed Information:

The micro watershed code 3B1C2a2f, 3B1C2a2a as codified by North Eastern Space Application Centre (NESAC). The total geographical area of the watershed is 1721 Ha with 1500 Ha to be treated under the Integrated Watershed Management Programme (IWMP).

1.3 Need and Scope for Watershed Development:

The Micro Watershed Umnei-Umsohphie falls under the gentle slope of the plateau and very steep slope in the Southern parts of the watershed. Out of nine villages, five have the facilities of road connectivity the other four villages do not have any road connectivity. The farmers are all marginal and small farmers, households are mostly below the poverty line, which are 86% of the total households. Jhum cultivation is practiced by most of the inhabitants of these villages in the slope.

Even though the area received rainfall during monsoon, there found to be shortage of water during dry season and the villager have to travelled to stream for fetching water even for domestic use.

1.4 Other Development Projects/Schemes running in the Project Areas:

The other development projects/schemes under taken in the projects areas are:-

i. MGNREGS.

CHAPTER – 2
BASIC INFORMATION OF THE PROJECT AREA

2.1 Location and Accessibility:

The area is located between 91˚-02'.30" to 91˚ - 06'.00" East longitude and 25˚-42'-00" to 25˚-46'-00" North longitude. It is situated at a distance of 60 Km from Nongstoiñ Headquarter of the District and falls under Mawshynrut C&RD Block and a distance of 15 Km from Block Headquarter within the Mawshynrut Administrative unit jurisdiction. There are nine villages falling within the project areas namely:

1. Thangtngaw.
2. Nongrynniaw.
3. Nongmawngap.
4. Nongmawngap Kynjang.
5. Porsohsan.
6. Mawtirang.
7. Porkrong.
8. Mawstieh.
9. Mawdongkiang.

2.2 Physiographic

Altitude range from 260 to 880 above mean sea level and physiographic is sloppy to gentle slope and very deep slope in the Northern and Southern corner of the watershed areas.

Table 2.1: Physiographic details

Elevation (metres)	Slope Range (%)	Order of watershed Sub/Micro-watershed	Major streams	Topography
626 - 880	6% to 63%	1st to 4th order	Umnei Umsohphie	Gentle slope to very deep slope

2.3 Drainage

The watershed is drained by Umnei-Umsohphie River, Tyrsung River as the main drainage along with Eastern to Western direction with the networks out of tributaries and streamlets. The main density calculated is 64.097 Km/Km² and the average bifurcation ratio worked out is 1:3.4 the total length of stream rivers is 64.097 Km (1st order 39.176, 2nd order 9.575, 3rd order 10.062, 4th order 5.284).

Drainage density: - Total length of Stream River
Area of watershed in Km²

Bifurcation ratio: - Previous Stream order, No. of stream
Next order No. of stream

2.4 Soil: -

The soil surveys are generally shallow in the hill top exposing to gently slope in the low land. Soil texture is generally clay loam to clay in the lower which can be easily drained with fast and to permissibility. Soil sample collected and tested are acidic in nature where the average PH value range from 4.66 to 5.10 which may be due to high rainfall, undertaking topography vegetative cover. Soil nutrients list indicate exposure to erosion hazard is somewhat severe in the Area due to less vegetative cover and low

Table 2.2; Details of soil erosion in the project areas:

1	2	3	4	5	6	7	8	9
Sl. No.	Name of States	Name of District	Name of Projects	Cause	Types of erosion	Area affected (Ha)	Run-off (mm/year)	Average soil loss (Tonnes/ha/year)
1.	Meghalaya	West Khasi Hills	WKH-IWMP IX	Water	Erosion			
				(a)	Sheet			
				(b)	Rill	1721	N/A	N/A
				(c)	Gully			
				Sub Total				
					Wind Erosion			

2.5 Climate: -

The climate of the Area is humid sub tropical. The Area experience hot summer and moderate warm winter. Average rainfall is 3136.06 mm during June to September.

Table 2.3: Agro-Climatic zones of the project areas, soil types, average rainfall and major crops.

1	2	3	4	5	6	7		8	9	
Sl.No.	Name of State	Name of the Agro-climatic Zone	Area (in Ha)	Name of the Districts	Name of the Projects	Major soil types		Average rainfall in mm (proceeding 5 years average)	Major crops	
						a. Type	b. Area (Ha)		a). Name	b). Area (Ha)
1.	Meghalaya	Mild, Moderate	1721	West Khasi Hills	WKH-IWMP IX	Soil is moderating fine. Texture is loamy at the upper horizon clay loam in the middle and clay in the lower horizon. Expose to horizon hazard is moderate severe.	1721	3136.06 mm	Paddy. Maize. Ginger.	28 10 20

2.6 Agriculture: -

Agriculture is the main occupation of the people of the area. Principal agriculture crops of the area is paddy, ginger, maize and other seasonal vegetables crops. Important horticulture crops are orange, jack fruit, banana, pine apple, etc.

Table 2.4: Crop yield and production

Crops	Area (Ha)	Average Yield (Qtl/Ha)	Total Production (Qtl)
Paddy	28	17.00 – 19.67	550
Maize	10	8.6	860
Ginger	20	75.00 – 87.34	1740

2.7 Natural Vegetation: -

The natural vegetation of the area is fairly poor due to jhuming, fire hazard and over exploitation of timber falling which has put the farmers of the area un answerable. The fire hazard of the area blended sharp out crops where soil depth is decorated to low with sandy soil texture bear testimony to the effects as a result of these factors shrubs, creeping, bamboo has been dominated species across the landscape. The primary vegetation of the area can be seen only (Schemawallichil Diengngan), (Castonopsis Diengstap) (Duabanga Diengbai) Terminalia species etc.

2.8 Socio Economic Profile: -

Socio-economically according to the socio economic survey from their villages found that people of the area are very poor owing primarily to low agricultural productivity. Where people have to explores other means of livelihood to carve with the situation. Although, agricultural is the primary occupation of the people of this sector could barely meet their livelihood requirement as it is largely mono agriculture (single crops) though their land has the potentiality of mixed cropping and high productivity, people need training etc. The average annual income of the people is about 25000 to 35000 (Rupees Twenty five to thirty five thousand) only per family.

Demographic: -

The total population of the area is 1512 number of which 767 are male and 745 are female and the total numbers of household is 265. The demographic details of village-wise in the project area are as below:

Sl. No.	Village	No. of household	Male	Female	Total
1.	Thangtngaw	47	118	128	246
2.	Nongrynniaw	57	175	187	362
3.	Mawngap	17	53	47	100

4.	Mawngap Kynjang	7	23	17	40
5.	Porsohsan	22	69	53	122
6.	Mawtirang	40	124	243	367
7.	Porkrong	25	88	68	156
8.	Mawstieh	18	50	45	95
9.	Mawdongkiang	53	137	145	282
	Grant Total	**286**	**837**	**933**	**1770**

Table 2.5; Infrastructure in the project areas:

1	2	3		4
Name of District	Name of Project	Parameters		Status
West Khasi Hills	WKH-IWMP IX	1.	Nos. of villages connected to the main road by all weather road	4
		2.	No. of village provided with electricity.	3
		3.	No. of households with access drinking water.	N/A
		4.	No. of educational institution, Primary(P) Secondary(S) Higher Secondary(HS) Vocational Institute(VI)	9(P), 1(UP)
		5.	No. of village with access to PHC	N/A
		6.	No. of village with access veterinary Department.	N/A
		7.	No. of village with access Bank.	N/A
		8.	No. of village with access marketing/mendis.	9
		9.	No. of village with access Agro Industries.	N/A
		10.	No. of village with access to Aganwadi.	3
		11.	No. of village with access Post Office	N/A

2.9 Livestock: -

The important livestock of the area including cattle (cow, piggery, goats, poultry, buffalo, etc.) and these are also taking as part time occupation.

Table 2.6: Existing livestock population

Type of Animal	Population
Piggery	151
Poultry	1743
Cattle	529
Total	2423

2.10 Land Use: -

The strategy for land use planning and proposed land use is as per proposed land use map, map no. 5 where attempts have been made to reclaim the wasteland which are possible with the prescribed intervention and as per the capacity of the land such as land under agriculture use would be increased by under taking land development and other agricultural activities thereby converting the shrubs land (wasteland) to agro land.

A significant area would be brought under agro horticulture for 300 Ha and for the remaining balance shrubs/wasteland maximum effect would be made to bring these under different forestry activities such as aforestation, improvement of existing degraded forest, strip plantation etc. In a built up area 11Ha which may be presume to remain more or less the same. The most important activities are only livelihood and production system and micro enterprise component which is concentrated around the village settlement.

Table 2.7: Land holding pattern in the project area:

1	2	3	4	5	6		
Name of District	Name of Project	Types of Farmer	No. of households	No. of BPL households	Land holding (Ha)		
					Irrigated	Rainfed	Total
West Khasi Hills	WKH-IWMP IX		286				
		1. Large. 2. Small. 3. Marginal. 4. Landless.	76 100 80 30	N/A	Nil	1721	1721

Table 2.8: Common property resources of the project areas:

1	2	3	4				5			
Name of District	Name of Project	CPR Particulars	Total Area (Ha) 1721 Area owned/In possession of				Area available for treatment (Ha) 1500			
			Pvt. Person	Govt. (specify Deptt.)	PRI	Any other (PI. Specify) Village community	Pvt. Person	Govt. (specify Deptt.)	PRI	Any other (PI. Specify) Village Community
West Khasi Hills	WKH-IWMP IX									
		1. Wasteland degraded land. 2. Pasture. 3. Ordind. 4. Village woodlot. 5. Forest degraded. 6. Village pond/tank. 7.Community 8. Weekly market. 9. Parmanent market. 10.Temple(place worship) 11.Any others.	184 1413				1500			

2.11 Land Use and Land Cover: -

As per land use and land cover map generated by North Eastern Space Application (NESAC) from satellite image taken during 2005-06, the watershed is broadly classified into the following;

1. Build up Area.	-	11 Ha
2. Tree clad Area closed.	-	103 Ha
3. Tree clad Area open.	-	1413 Ha
4. Shifting Area	-	10 Ha
5. Waste Land	-	184 Ha
Total	-	1721 Ha

2.12 Problem of the Area: -

Base line survey and P.R.A. Exercise carried out indicate the major problems of the watershed area are as villages surveyed as listed below;

1. Very low agriculture productivity.
2. Less geographical area under forest cover.
3. Scary vegetation covers due to receiving fire hazard.
4. Lack of modern technological input farming.
5. Water scarcity.
6. Lack of awareness and knowledge on improved agricultural practice.
7. Low marketing facility.
8. Inadequate primary infrastructure.
9. Unutilized waste land.
10. Very poor sanitation.
11. Inadequate health care.

These problems have been identified through Participatory Rural Appraisal (PRA) Exercise conducted in all the villages within the watershed. Measurable attempts and approaches have been formulated in the watershed treatment plan of the detailed project report. So, to mitigate and over comes them in future.

CHAPTER – 3
PROJECT PLANNING & INSTITUTION BUILDING

3.1: Scientific Planning

i) Base Line Survey: To establish a benchmark for assessing the impact of any intervention (pre-project & post project) a baseline survey is essential. The baseline survey included household census & socio-economic survey by using structured and semi –structured questionnaires, bio-physical survey to identify and assess the status of natural resources in the project area.

ii) Participatory Rural Appraisal: To further obtain information on the project area, the people, resources, various PRA techniques like resource mapping, social mapping, seasonal calendars, matrix ranking, and Venn diagrams were used.

iii) GIS & Remote Sensing: To facilitate the process of prioritization and planning Geographic Information System was use. The land use and land cover (LULC) maps were prepared by the North Eastern Space Application Centre (NESAC) using the LISS III images (2006). The activities were located on the field by using GPS and accordingly transferred to the maps on GIS platform.

Table 3.1: Details of Scientific Planning and Inputs in IWMP Projects:

1	2	3
Total no. of Project sanctioned	**Scientific criteria/input used**	**No. of Project in which Scientific criteria were used**
	A. Planning:	
	Cluster Approach -	Yes
	Whether technical back – stopping for the Project has been arranged? If Yes mention the name of the Institute	-
	Base line survey	Yes
	Hydrology – Geological Survey	No
	Contour Mapping	No
	Participatory Net Planning (P.N.P.)	PRA Exercise
	Remote sensing data – especially soil/Crop/Run off cover	Yes
	Ridge to very treatment	Yes
	Online it connectivity between:	Yes
	i. Project and DRDA cell/ZP	No
	ii. DRDA and SNLA	No
	iii. SNLA and DoLR	Yes

1	2	3
	Availability of GIS layer:	
	1. Cadastral Map	NA
	2. Village Boundary	NA
	3. Drainage	Yes
	4. Soil (soil nutrition status)	Yes
	5. Land Use	Yes
	6. Ground Water Status	No
	7. Watershed Boundary	Yes
	8. Activity	Yes
	Crop simulation module	NA
	Integrated coupled analyzer /near infrared visible spectroscopy/medium spectroscopy for high speed soil nutrient analysis	NA
	Normalized difference vegetation index (NDVI)	Yes
	Water Station	
	B. Inputs	
	1. Bio Pesticide	No
	2. Organic Manures	No
	3. Vermin compose	Yes
	4. Bio fertility	Yes
	5. Water saving device	Yes
	6. Mechanical tools/implements	Yes
	7. Bio fencing	Yes
	8. Nutrient budget	No
	9. Automatic water level recorder and sediment sampler	NA
	Others	

1.2 Project Implementing Agency:

The PIA is the Soil & Water Conservation Nongstoiñ Division, Nongstoiñ West Khasi Hills District of Meghalaya. The Project Manager will be the Divisional Soil and Water Conservation Officer and will be assisted by an Asst. Soil & Water Conservation Officer, Range Officer along with WDT members in which expertise is drawn from the relevant fields for achieving smooth and successful implementation of the project.

1	2	3	
Names of Districts	Names of projects	Details of PIA	
West Khasi Hills	West Khasi Hills – IWMP IX	(i) Type of organization#	Government
		(ii) Name of organization	Soil & Water Conservation Department
		(iii) Designation & Address	Divisional Soil & Water Conservation Nongstoiñ
		(iv) Telephone	036954280336
		(v) Fax	036954280336
		(vi) E-mail	

1.3 Institution Building

i) Watershed Committee (WC)

The Watershed Committee of the Umnei-Umsohphie was constituted with the active involvement of the villagers with strong support of the Traditional Institutions (Village Nokma/Council). The Watershed Committee has been registered under the Society Registration Act 1983.

Table 3.2: Details of Watershed Committee (WC):

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Sl. No	Name of State	Name of Distric	Name of Project	Name of W/C		Designation	Name	M/F	SC	ST	SF	MF	LF	Land less	U G	SH G	GP	Any others	Educational Qualification	Function assign
1	M	West Khasi Hills District	IWMP IX	Umnei-Umsohphie Watershed Committee	Yet to Register	Chairman	Shri. Peter S. [illegible]	M	-	ST	-	-	LF	-	-	-	-	-	BA	Chairman
2	E					Secretary	Shri. T. Lyngdoh	M	-	ST	-	-	-	-	-	-	-	-	HSLC	Secretary
3	G					Member	Shri. Isak Rongrin	M	-	ST	SF	-	-	-	-	-	-	-	Nil	Member
4	H					Member	Shri. Roster Mawsor	M	-	ST	SF	-	-	-	-	-	-	-	Nil	-do-
5	A					Member	Shri. Majaw Langrin	M	-	ST	-	MF	-	-	-	-	-	-	BA	-do-
6	L					Member	Shri. Jostin	M	-	ST	-	-	-	L	-	-	-	-	Nil	-do-
7	A					Member	Shri. Newtest Rongrin	M	-	ST	SF	-	-	-	-	-	-	-	VI	-do-
8	Y					Member	Shri. Gelson Lyngdoh	M	-	ST	-	MF	-	-	-	-	-	-	X	-do-
9	A					Member	Shri. Krosding	M	-	ST	-	MF	-	-	-	-	-	-	Nil	-do-
10						Member	Shri. Das Pangniang	M	-	ST	-	MF	-	-	-	-	-	-	X	-do-
11						Member	Smt. Rosemary Lyngkhoi	F	-	ST	SF	-	-	-	-	-	-	-	XI	-do-
12						Member	Smt. Shimtihun Marngar	F	-	ST	-	MF	-	-	-	-	-	-	VII	-do-
13						Member	Smt. Plis Tynhiang	F	-	ST	-	MF	-	-	-	-	-	-	Nil	-do-
14						Member	Smt. Sophia Dkhar	F	-	ST	-	MF	-	-	-	-	-	-	IX	-do-
15						Member	Smt. Adalgisa Pangniang	F	-	ST	-	MF	-	-	-	-	-	-	IX	-do-
16						Member	Shri. Phyrnailington Dkhar	M	-	ST	SF	-	-	-	-	-	-	-	X	-do-
17						Member	Shri. Ebron Rongrin	M	-	ST	SF	-	-	-	-	-	-	-	VII	-do-
18						Member	Shri. Odrinstone K.Bani	M	-	ST	SF	-	-	-	-	-	-	-	VII	-do-

19						Member	Shri. Phleming Mawlieh	M	-	ST	SF	-	-	-	-	-	-	-	X	-do-
20						Member	Shri. Lokyrmen Tynhiang	M		ST									VII	-do-
21						Member	Shri. Phinial L. Miangiong	M		ST									V	-do-
22						Member	Shri. Laspiur Nianglang	M		ST									XII	-do-
23						Member	Shri. Banshanlang Nongbri.	M		ST									X	-do-
24					-do-	Member	Shri. Porphil Synshiang	M		ST									XII	-do-
25						Member	Shri. Rajesh Tynhiang	M		ST									X	-do-
26		-do-	-do-	-do-		Member	Shri. Aldus Syiemlieh	M		ST									V	-do-
27						Member	Smt. Theibilis Nongbri	F		ST									VI	-do-
28						Member	Shri. Premius Marthong	M		ST									IX	-do-
29						Member	Shri. E. Lyngdoh	M		ST									BA	-do-
30						Member	Smt. Lindamon Dkhar	F		ST									VI	-do-
31						Member	Smt. Phidalis L. Miangiong	F		ST									VI	-do-

From column no.2 the total number of State; from column no.3 the total number of District; from column no.4 the total number of Project; from column no.5 the total number of Watershed committee; from column no.6 the total number of registered watershed committee; from column no.7 the total number of members & WCs without a present or without a secretary, may be mentioned at the end of the table.

In column 20 only the letter assigned as below needs to be typed, except 'J', where the type may be specially mentioned.

(a). PNP and PRA. (b). Planning. (c). Maintenance of Accounts.
(d). Signing of cheque and making payments. (e). Supervision of construction activities. (f). Cost Estimation.
(g). Verification and measurement. (h). Record of labor employed. (i). Social Audit.
(j). Any other (please specify).

ii). Self Help Group

Awareness programmes were organized in the villages to inform and sensitize the people on the essentiality of organizing themselves in to homogenous groups for uplifting their livelihood especially for the women and the landless. Discussions were held at length with the WDT on the scope and procedure of group formation, availing credit, grading of the groups and so on.

Table 3.3: Detail of Self Help Groups (SHGs) in the Project Areas:

1	2	3				4				5			6		
Name of District	**Name of Project**	**Total no. of registered SHGs**				**No. of members**				**No. of SC/ST in each category**			**No. of BPL in each category**		
		With only Men	**With only women**	**With both**	**Total**	**Categories**	**M**	**F**	**Total**	**M**	**F**	**Total**	**M**	**F**	**Total**
West Khasi Hills	IWMP IX	2	3		5										
							20	35	55	20	35	55	NA	NA	55

(M- Male, F- Female)
***From column no.2, 3 and 4 total numbers of State, District and Project respectively. From column no.5 to 8, category – wise grand totals may be for the entire country may be given at the end of the table.**

iii). User Group

To manage the assets created and ensure their sustainability User Groups will be formed. The people have been sensitized on the importance of ensuring that the assets created are sustainably used and the essentiality of having User Groups for maintenance and operation of their assets.

Table 3.4: Details of UGs in the Project Areas:

1	2	3				4				5			6		
Name of District	**Name of Project**	**Total no. of UGs**				**No. of Members**				**No. of SC/ST in each category**			**No. of BPL in each category**		
		M	**Women**	**Both**	**Total**	**Categories**	**M**	**F**	**Total**	**M**	**F**	**Total**	**M**	**F**	**Total**
West Khasi Hills	IWMP IX	572	286	858	858		572	286	858	572	286	858	Na	Na	Na
Total		**572**	**286**	**858**	**858**		**572**	**286**	**858**	**572**	**286**	**858**	**Na**	**Na**	**Na**

(M- Male, F- Female)
***From column no.2, 3 and 4 total numbers of State, District and Project respectively. From column no.5 to 8, category – wise grand totals may be for the entire country may be given at the end of the table.**

CHAPTER – 4
PROJECT ACTIVITIES

4.1 Preparatory Phase:

i) Entry Point Activities (EPA)

Names of Project	Amount earmarked for EPA	Entry Point Activities planned	Geographical Location
W.K.H. IWMP-IX	9.00	IEC (HUB) – 2 nos. Drinking Well – 2 nos. Footbridge – 4 nos. Washing Platform – 1 no. Purchase of chairs and tables – 9 nos.	91˚-02’.30” to 91˚ - 06’.00” East Eongitude and 25˚-42’-00” to 25˚-46’-00” North Longitude

ii) Other activities of Preparatory Phase:

Initiation of village level institution	Capacity Building	IEC activities	Baseline survey	Hydrological survey	Identifying technical support agencies	Resource agreements
1 No. Watershed Committee 9 Nos. Sub Watershed Committee	3 nos.	2 nos.	Participatory Rural Appraisals	N.A	Done	Done

4.2 Watershed Works Phase:

4.2.1 Activities related to surface water resources in the project areas:

Name of Project	Type of structure	Pre Project			Proposed Project											
					Augmentation/repair of existing structures				Construction of new structures				Total target			
		No.	Area irrigated (ha)	Storage capacity	No.	Area irrigated (ha)	Storage capacity	Estimated cost (in lakh)	No.	Area irrigated (ha)	Storage capacity	Estimated cost (in lakh)	No.	Area irrigated (ha)	Storage capacity	Estimated cost (in lakh)
W.K.H. IWMP-IX	1. Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2. Pond	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3. Lake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4. Check Dam	-	-	-	-	-	-	-	22	-	500m^3	-	-	-	-	-
	5. Protection Wall	-	-	-	-	-	-	-	49	-	13230m^3	-	-	-	-	-
	6. Diversion Channel	10	-	2500	-	-	-	-	1619.54 Rmt	-	400m^3	-	-	-	-	-
	7. Any others (please specify)															
	Protection Wall	-	-	-	-	-	-	-	7	-	800m^3	-	-	-	-	-
	Water Harvesting Structure	-	-	-	-	-	-	-	25	-	2000m^3	-	-	-	-	-
	Total								103 nos. 1619.54 Rmt		16930m^3					

4.2.2 Activities related to recharging ground water resources in the project areas:

Name of project	Type of structure	Pre Project		Proposed target							
		No.	Area irrigated (ha)	Augmentation/repair of existing structures			Construction of new recharging structures			Total target	
				No.	Area to be irrigated (ha)	Estimated cost	No.	Area to be irrigated (ha)	Estimated cost	Area to be irrigated (ha)	Estimated cost
W.K.H. IWMP-IX	1. Open wells						7 m		1.55		
	2. Bore wells										
	3. Any others (please specify) i). Dug out pond ii. Water Harvesting						74	35.6			
	Total of the Project										

4.2.3 Activities executed by User Groups in the project areas:

These groups shall be homogenous groups of person most affected. Each User Groups shall consist of those who are deriving benefits from the Watershed Activities. The Watershed shall facilitate resource use agreement among the User Groups base on sustainability. These agreements must be worked out before the conducted work is undertaken. These User Groups will be responsible for the operation and maintenance of all the assets created in closed collaboration with the Watershed Committee and Village Sub Committee.

4.2.4 Activities related to livelihoods by Self Help Groups (SHGs) in the project areas:

Self Help Groups (SHGs): - These are homogeneous groups having common identity and interest. The Watershed Committee shall accept the constitution of SHG within the watershed area that is dependent on the watershed area for their livelihood. Self Help Groups may be formed from amongst poor, small and marginal farmer household, landless, asset less, poor agricultural labourer women. Each Self Help Groups will be provided with revolving fund as loan given to them as decided by Watershed Committee.

4.2.5 Other activities of watershed work phase:

Name of project	Ridge area treatment		Drainage line treatment		Nursery raising		Land development		Crop demonstration		Pasture development		Veterinary service		Fishery development		Non-convectional energy		Any other (pl. specify)	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
W.K.H. IWMP-IX	193 ha	19.594	88 nos.	34.70392	300 ha	25.80	50 ha	2.15	86 units	4.30	-	-	91 units	15.865	21 units	2.78	-	-	11 units	11.195

4.2.6 Details of engineering structures in watershed works:

Name of project	Name of structure	Type of treatment			Type of land			Target					
		Ridge area (R)	Drainage line (D)	Land Dev. (L)	Private	Community	Others (Pl. specify)	No. of units (No/cum/rmt)	Estimated cost (in lakh)				Expected month & year of completion (mm/yyyy)
									M	W	O	T	
W.K.H. IWMP-IX	Staggered trenching												
	Loose boulder Contour bund												
	Graded bunding												
	Protection wall		D	L	P	C		88 nos.				34.70392	2015-16
	Earthen check dam												
	Masonary stop dam												
	Gully plug												
	Gabion structure												
	Underground dykes												
	Fields bund												
	Any others (Pl. specify) 1. Check dam	R	D		P	C		30 nos.				11.57124	2015-16
	2. Water harvesting				P	C		26 nos.				14.27438	2015-16

4.2.7 Details of activities connected with vegetative cover in watershed works:

Name of project	Name of structure/work	Type of treatment			Type of land			Target			
		Ridge area (R)	Drainage line (D)	Land Dev. (L)	Private	Community	Others (Pl. specify)	Area (Ha)	No. of plants	Estimated cost (in lakh)	Expected month & year of completion (mm/yyyy)
W.K.H. IWMP-IX	Afforestation							194		19.594	2015-16
	Regeneration										
	Agro-forestry							88		3.75408	
	Fuel wood										
	Fodder										
	Agro-Horticulture							300		25.80	
	Pasture development										
	Nursery raising										
	Others (Coffee)										

In case two or more activities are executed over same area, the figures in area treated should be accounted only once and should reflect only the actual watershed area treated.

4.2.8 Details of allied/other activities:

Name of project	Name of activities	Type of land			Target	
		Private	Community	Others landless	Estimated cost (in lakh)	Expected month & year of completion (mm/yyyy)
W.K.H. IWMP-IX	Carpentry					2015-16
	Apiculture			10 units	0.80	2015-16
	Poultry			42 units	4.59	2015-16
	Pisciculture			21 units	2.78	2015-16
	Piggery farming			42 units	4.59	2015-16
	Compost pit					2015-16
	Kitchen gardening			159 units	4.00	2015-16
	Tailoring			21 units	1.535	2015-16
	Agricultural implements			21 units	1.06	2015-16
	Weaving					2015-16
	Betel nut processing					2015-16
	Others			55 units	10.75	

4.3 Consolidation and withdrawal phase:

Details of activities in the CPRs in the project areas:

Name of project	Name (s) of village	CPR particular	Activity proposed	Target			
				Target area under the activity (Ha)	Estimated expenditure (Rs.)	Expected no. of beneficiaries	Estimated contribution to WDF (Rs.)
W.K.H. IWMP-IX	1. Thangtngaw. 2. Nongrynniaw. 3. Mawngap Kynjang. 4. Mawngap. 5. Mawstieh. 6. Mawdongkiang. 7. Porsohsan. 8. Porkrong. 9. Mawtirang.				6.75	285	0.3375

CHAPTER – V
PROJECT PHASING & BUDGETING

WATERSHED TREATMENT PLAN OF UMNEI-UMSOHPHIE & UMTYRWA-UMIONG UNDER IWMP – IX WEST KHASI HILLS

NAME OF DISTRICT: WEST KHASI HILLS TOTAL GEOGRAPHICAL AREA: 2962 Ha TOTAL PROJECT COST: Rs. 375 LAKHS

NAME OF C&RD BLOCK: MAWSHYNRUT AREA PROPOSED FOR TREATMENT: 2500 Ha NOS. OF VILLAGE: 11 NOS.

(Physical in Ha/Nos./Rm/Unit) (Rs. In lakhs)

Sl. No.	Activities	Total				1st Year				2nd Year				3rd Year				4th Year				5th Year			
		Physical			Fin	Physical			Fin	Physical			Fin	Physical			Fin	Physical			Fin	Physical			Fin
		Ha.	Nos.	Rmt		Ha.	Nos.	Rm		Ha.	Nos.	Rmt		Ha.	Nos.	Rmt		Ha.	Nos	Rmt		Ha.	Nos	Rmt	
I	**Administrative Cost**			10%	37.50							2%	7.50			5%	18.75			3%	11.25				
II	**Monitoring & Evaluation**			2%	7.50							0.5%	1.875			1%	3.75			0.5%	1.875				
	Sub Total (I+II)			**12%**	**45.00**							**2.5%**	**9.375**			**6%**	**22.50**			**3.5%**	**13.125**				
III	**Preparatory Phase**																								
	EPA			4%	15.00																				
	i. Drinking Well/Spring tapped chamber						7		3.40428																
	ii. Washing Place						4		4.53996																
	iii. Footbridge						5	4%	3.19573																
	iv. IEC (HUB)						2		3.44																
	v. Purchase of chair & table						200		0.42																
	DPR			1%	3.75			1%	3.75																
	Institutional & Capacity Building			5%	18.75			1%	3.75			2%	7.50			1%	3.75			1%	3.75				
	Sub Total of III			**10%**	**37.50**		**218**	**6%**	**22.50**			**2%**	**7.50**			**1%**	**3.75**			**1%**	**3.75**				
IV	**Work Phase**																								
A	**Arable Land Treatment**																								
	Vegetative Barriers																								
	Contours Bunds																								
	Graded Bunds																								

	Loose Boulder Contour Bund	136			10.20									112	150		8.40	24	30		1.80				
	Bench Terracing																								
	Wet Terrace	20			1.50					2.5	4		.1875	13	19		.975	4.5	8		.3375				
	Box Terrace																								
	Half Moon Terrace	111			8.325									111	55		8.325								
	Field Bunding																								
	Peripheral Bunding			5090	2.545										33	5090	2.545								
	Crop Demonstration		118		5.90						32		1.60		56		2.80		30		1.50				
	Kitchen Garden																								
	Improvement of Existing Paddy Fields	88.884			3.65001					2	3		0.086	35.247	42		1.51564	47.637	61		2.04837				
	Crop Demonstration																								
	Agro – Horticulture	322.90			27.7694					22.90	35		1.3511		M		18.3183	M			8.10				
	Horticulture Development																								
	Sub Total of A	**678.784**	**118**	**5090**	**59.88941**					**27.40**	**74**		**3.2246**	**271.247**	**355**	**5090**	**42.87894**		**129**		**13.78587**				
B	**Non Arable Land**																								
	Improvement of degraded forest/ existing natural forest	480.1766	200		17.28636					32.17766	43		.83659		M		11.96977	M			4.48				
	Afforestation	201.534	40		20.35501					201.534	52		14.51045		M		5.84456								
	Agro-Forestry/strip plantation	88	210		3.75408									8	10		.34128	80	200		3.4128				
	Nursery Establishment																								
	Avenue Plantation																								
	Sub Total of B	**769.7106**	**450**		**41.39545**								**15.34704**		**10**	**5090**	**18.15561**	**80**	**200**		**7.8928**				
C	**Drainage Line Treatment**																								
	Farm ponds/Dug out ponds		2		1.96278										2		1.96278								
	Water Harvesting Structures		39		41.92393						4		2.25418		31		36.95774		4		2.71201				
	Nallah Bund																								
	Earthen embankment, Drinking well																								

	Check dam, H/W Dam, Diversion Dam/Irrigation dam		46		28.74415						2		2.82784		36		19.38743		8		6.52888				
	Loose boulder check dam																								
	Gabion protection/R Wall																								
	Stone masonry protection wall/ Retaining wall		73		32.18136						5		4.36734		47		16.60319		21		11.21083				
	Bamboo wall/Bamboo spurs																								
	Drip Irrigation																								
	Water tank/Percolation tank	5			1.25										5		1.25								
	Runoff disposal channel			4700.23	1.61076						8	400	0.104		21	2689.35	1.03323		20	1610.88	0.47353				
	Earthen irrigation channel		2		1.04216										1		0.52108		1		0.52108				
	CC irrigation channel																								
	Aqueduct																								
	Sub Total of C	**5**	**167**	**470.023**	**108.71514**						**19**	**400**	**9.55336**		**143**	**2689.35**	**77.71545**		**54**	**1610.88**	**21.44633**				
D	**Livelihood**																								
	Tailoring		47		3.585						5		0.40		13		1.04		29		2.145				
	Carpentry/Black smithy		22		1.10										9		0.45		13		0.65				
	Agriculture implements		21		1.06						5		0.25		10		0.50		6		0.31				
	Vegetables production/Kitchen Gardening		219		5.50						60		1.495		70		1.74		89		2.265				
	Apiculture		10		0.80										5		0.40		5		0.40				
	Masonry hallow block making		38		1.90						4		0.20		13		0.65		21		1.05				
	Piggery		95		7.67						9		0.74		26		2.10		60		4.83				
	Poultry		35		2.87						2		0.18		6		0.50		27		2.19				
	Vermin-composing		21		2.585						1		0.125		8		0.97		12		1.49				
	Composting (Duckery)		46		3.68						2		0.16		20		1.60		24		1.92				
	Weaving																								
	Stabilized mud block making																								
	Grocery shop/Food stalls																								
	Promotion of indigenous medicinal practitioner																								

	Pisciculture		30		3.00						2		0.20		13		1.30		15		1.50				
	Soap making																								
	Sub Total of D		**584**		**33.75**						**90**		**3.75**		**193**		**11.25**		**301**		**18.75**				
E	**Production System**																								
	Poultry/Piggery		10		3.10										2		0.60		8		2.50				
	Poultry farming		7		2.10										1		0.30		6		1.80				
	Piggery farming		7		1.72										2		0.85		5		0.87				
	Food processing																								
	Floriculture																								
	Pisciculture (including supply of fingerlings)		12		3.28						2		0.70		2		0.60		8		1.98				
	Betel nut soaking tank																								
	Canes & handicrafts																								
	Rural godown/Cold storage																								
	Cableway taxing																								
	Apiculture/Bee keeping																								
	Grocery shop		6		1.80						2		0.60		4		1.20								
	Vermin composting																								
	Milk cow rearing		7		6.305						1		0.90		2		1.80		4		3.605				
	Saloon/Beauty parlour																								
	Mushroom cultivation																								
	Goat rearing																								
	Weaving & Handloom																								
	Stabilized mud block making		10		3.165						2		0.60		2		0.60		6		1.965				
	Carpentry/Black smithy																								
	Duckery																								
	Sericulture																								
	Soap making																								
	Rice mill operation		13		12.43						1		0.95		7		5.30		5		6.18				
	Improved fuel making (fire cakes, etc.)																								
	Integrated farming system (ginger/turmeric cultivation)		20		3.00														20		3.00				
	Basket making																								

	Kitchen gardening, other vegetative cultivation		2		0.60														2		0.60				
	Sub Total of E		**94**		**37.50**						**8**		**3.75**		**22**		**11.25**		**64**		**22.50**				
	Sub Total IV (A+B+C+D+E)				**281.25**								**35.625**				**161.25**				**84.375**				
V	Consolidation Phase	3%			11.25																	3%			11.25
	Sub Total of V	**3%**			**11.25**																	**3%**			**11.25**
	Grand Total (I+II+III+IV+V)				***375.00***				***22.50***				***52.50***				***187.50***				***101.25***	***3%***			***11.25***

Divisional Officer
Cum
Project Leader
Project Implementation Agency (IWMP)
Soil & Water Conservation Division, Nongstoin

Deputy Commissioner
West Khasi Hills District
Nongstoin

Year wise Financial Break up of Umnei-Umsohphie Watershed IWMP-IX (Physical in %) (Rs. In lakhs)

Sl. No.	***Activities***	***P.I.A.***		***W.C.***		***1st Year***		***2nd Year***		***3rd Year***		***4th Year***		***5th Year***		***Total***	
1	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***	***11***	***12***	***16***	***14***	***15***	***16***	***17***	***18***
1.	Administrative Cost	10%	22.50	-	-	-	-	2%	.45	5%	1.125	3%	6.75	-	-	10%	22.50
2.	Monitoring	1%	2.25	-	-	-	-	0.2%	.45	0.5%	1.125	0.3%	.675	-	-	1%	2.25
3.	Evaluation	1%	2.25	-	-	-	-	0.3 E	.675	0.5 E	1.125	0.2 E	0.45	-	-	1%	2.25
4.	Entry Point Activities	4%	9.00	-	-	4%	9.0	-	-	-	-	-	-	-	-	4%	9.00
5.	Institutional, capacity building & training, IEC activities	5%	11.25	-	-	1%	2.25	2%	4.5	1%	2.25	1%	2.25	-	-	5%	11.25
6.	Preparation of DPR	1%	2.25	-	-	1%	2.25	-	-	-	-	-	-	-	-	1%	2.25
7.	Watershed work phase	-	-	56%	126.00	-	-	7.5%	16.875	37%	83.25	11.5%	25.875	-	-	56%	126.00
8.	Livelihood activities	-	-	9%	20.25	-	-	1%	2.25	3%	6.75	5%	11.25	-	-	9%	20.25
9.	Production system & Micro enterprises	-	-	10%	22.50	-	-	1%	2.25	3%	6.75	6%	13.50	-	-	10%	22.50
10.	Consolidation phase	-	-	3%	6.75	-	-	-	-	-	-	-	-	3%	6.75	3%	6.75
	Total	**22%**	**49.50**	**78%**	**175.50**	**6%**	**13.50**	**14%**	**31.50**	**50%**	**112.50**	**27%**	**60.75**	**3%**	**6.75**	**100%**	**225.00**

Divisional Officer
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Soil & Water Conservation Division, Nongstoin

Deputy Commissioner
West Khasi Hills District
Nongstoin

WATERSHED TREATMENT PLAN OF UMNEI-UMSOHPHIE IWMP PROJECT – IX

NAME OF DISTRICT: WEST KHASI HILLS TOTAL GEOGRAPHICAL AREA: 1721 Ha TOTAL PROJECT COST: Rs. 225 LAKHS

NAME OF C&RD BLOCK: MAWSHYNRUT AREA PROPOSED FOR TREATMENT: 1500 Ha NOS. OF VILLAGE: 9 NOS.

(Physical in Ha/Nos./Rm/Unit) (Rs. In lakhs)

Sl. No.	Activities	Total				1st Year				2nd Year				3rd Year				4th Year				5th Year			
		Physical			Fin	Physical			Fin	Physical			Fin	Physical			Fin	Physical			Fin	Physical			Fin
		Ha.	Nos.	Rmt		Ha.	Nos.	Rmt		Ha.	Nos.	Rmt		Ha.	Nos.	Rmt		Ha.	Nos.	Rmt		Ha.	Nos	Rmt	
I	**Administrative Cost**			10%	22.50							2%	4.50			5%	11.25			3%	6.75				
II	**Monitoring & Evaluation**			2%	4.50							0.5%	1.125			1%	2.25			0.5%	1.125				
	Sub Total (I+II)			**12%**	**27.00**							**2.5%**	**5.625**			**6%**	**13.50**			**3.5%**	**7.875**				
III	**Preparatory Phase**																								
	EPA			4%	9.00																				
	i. Drinking Well/Spring tapped chamber						3	4%	1.32																
	ii. Washing Place						1		0.80																
	iii. Footbridge						4		3.02																
	iv. IEC (HUB)						2		3.44																
	v. Purchase of chair & table						200		0.42																
	DPR			1%	2.25			1%	2.25																
	Institutional & Capacity Building			5%	11.25			1%	2.25			2%	4.50			1%	2.25			1%	2.25				
	Sub Total of III		**210**	**10%**	**22.50**		**210**	**6%**	**13.50**			**2%**	**4.50**			**1%**	**2.25**			**1%**	**2.25**				
IV	**Work Phase**																								
A	**Arable Land Treatment**																								
	Vegetative Barriers																								
	Contours Bunds																								
	Graded Bunds																								
	Loose Boulder Contour Bund	136			10.20									112	150		8.40	24	30		1.80				
	Bench Terracing																								
	Wet Terrace																								
	Box Terrace																								
	Half Moon Terrace	111			8.325									111	55		8.325								
	Field Bunding																								

	Peripheral Bunding			2090	1.045										3	2090	1.045							
	Crop Demonstration		86		4.30						30		1.50		36		1.80		20		1.00			
	Kitchen Garden																							
	Improvement of Existing Paddy Fields	50			2.15									9	12		.387	41	50		1.763			
	Crop Demonstration																							
	Agro – Horticulture	300			25.80									300			17.70	M			8.10			
	Horticulture Development																							
	Sub Total of A	**597**	**586**	**2090**	**51.82**						**30**		**1.50**	**532**	**456**	**2090**	**37.657**	**65**	**100**		**12.663**			
B	**Non Arable Land**																							
	Improvement of degraded forest/ existing natural forest	448	200		16.128									448	200		11.648	M			4.48			
	Afforestation	194	40		19.594					194	40		13.968	M			5.626							
	Agro-Forestry/strip plantation	88	210		3.75408									8	10		.34128	80	200		3.4128			
	Nursery Establishment																							
	Avenue Plantation																							
	Sub Total of B	**730**	**450**	**2090**	**39.47608**					**194**	**40**		**13.968**	**456**	**210**		**17.61528**	**80**	**200**		**7.8928**			
C	**Drainage Line Treatment**																							
	Farm ponds/Dug out ponds																							
	Water Harvesting Structures		25		14.27438						3		1.407		19		10.99679		3		1.87059			
	Nallah Bund																							
	Earthen embankment																							
	Check dam, H/W Dam, Diversion Dam/Irrigation dam		30		11.57124										25		9.28412		5		2.28712			

	Loose boulder check dam																								
	Gabion protection/R Wall																								
	Stone masonry protection wall/ Retaining wall		33		6.79852										29		5.75099		4		1.04753				
	Bamboo wall/Bamboo spurs																								
	Drip Irrigation																								
	Water tank/Percolation tank	5			1.25										5		1.25								
	Runoff disposal channel			1619.54	.80978										6	1391.62	.69582		4	227.92	.11396				
	Earthen irrigation channel																								
	CC irrigation channel																								
	Aqueduct																								
	Sub Total of C	**5**	**88**	**1619.54**	**34.70392**						**3**		**1.407**		**84**	**1391.62**	**27.97772**		**15**	**227.92**	**5.3192**				
D	**Livelihood**																								
	Tailoring		21		1.535						2		0.16		6		0.48		13		0.895				
	Carpentry/Black smithy																								
	Agriculture implements		21		1.06						5		0.25		10		0.50		6		0.31				
	Vegetables production/Kitchen Gardening		159		4.00						53		1.32		50		1.25		56		1.43				
	Apiculture		10		0.80										5		0.40		5		0.40				
	Masonry hallow block making																								
	Piggery		35		2.87						2		0.18		6		0.50		27		2.19				
	Poultry		35		2.87						2		0.18		6		0.50		27		2.19				
	Vermin-composing		15		1.835										6		0.72		9		1.115				
	Composting (Duckery)		46		3.68						2		0.16		20		1.60		24		1.92				
	Weaving																								

	Stabilized mud block making																							
	Grocery shop/Food stalls																							
	Promotion of indigenous medicinal practitioner																							
	Pisciculture		16		1.60										8		0.80		8		0.80			
	Soap making																							
	Sub Total of D		**358**		**20.25**						**66**		**2.25**		**117**		**6.75**		**175**		**11.25**			
E	**Production System**																							
	Poultry/Piggery																							
	Poultry farming		7		2.10										1		0.30		6		1.80			
	Piggery farming		7		1.72										2		0.85		5		0.87			
	Food processing																							
	Floriculture																							
	Pisciculture (including supply of fingerlings)		5		1.18						1		0.40						4		0.78			
	Betel nut soaking tank																							
	Canes & handicrafts																							
	Rural godown/Cold storage																							
	Cableway taxing																							
	Apiculture/Bee keeping																							
	Grocery shop																							
	Vermin composting																							
	Milk cow rearing		7		6.305						1		0.90		2		1.80		4		3.605			
	Saloon/Beauty parlour																							
	Mushroom cultivation																							
	Goat rearing																							

	Weaving & Handloom																							
	Stabilized mud block making		2		0.765														2		0.765			
	Carpentry/Black smithy																							
	Duckery																							
	Sericulture																							
	Soap making																							
	Rice mill operation		9		10.43						1		0.95		4		3.80		4		5.68			
	Improved fuel making (fire cakes, etc.)																							
	Integrated farming system																							
	Basket making																							
	Kitchen gardening																							
	Sub Total of E		**37**		**22.50**						**3**		**2.25**		**9**		**6.75**		**25**		**13.50**			
	Sub Total IV (A+B+C+D+E)	**1326**	**1519**		**168.75**								**21.375**				**96.75**				**50.625**			
V	Consolidation Phase	3%			6.75																	3%		6.75
	Sub Total of V	**3%**			**6.75**																	**3%**		**6.75**
	Grand Total (I+II+III+IV+V)	***1332***	***1519***	***3709.54***	***225.00***		***210***	***6%***	***13.50***		***142***	***8.875***	***31.50***	***1091***	***179***	***3051.12***	***112.50***	***145***	***515***	***227.92***	***60.75***	***3%***			***6.75***

Divisional Officer
Cum
Project Leader
Project Implementation Agency (IWMP)
Soil & Water Conservation Division, Nongstoin

Deputy Commissioner
West Khasi Hills District
Nongstoin

VILLAGE WISE ACTION PLAN OF UMNEI-UMSOHPHIE MICRO WATERSHED UNDER IWMP WEST KHASI HILLS PTOJECT-IX

Name of District: West Khasi Hills ***Nos. of villages: 9 Nos.*** ***Project Area: 1500 Ha***

Name of C&RD Block: Mawshynrut ***Physical in Ha/Nos/Rm/Units*** ***Financial: (Rs. In lakhs)***

Sl. No.	Activities	Thangtngaw		Nongrynniaw		Mawngapkynjang		Mawngap		Mawstieh		Mawdongkiang		Porsohsan		Porkrong		Mawtirang	
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
I	**Administrative Cost**																		
II	**Monitoring & Evaluation**																		
	Sub Total (I+II)																		
III	**Preparatory Phase**																		
	EPA																		
	i. Drinking well/spring tapped chamber																		
	ii. Washing Place																		
	iii. Footbridge																		
	iv. IEC (HUB)																		
	v. Purchase of chair & table																		
	DPR																		
	Institutional & Capacity Building																		
	Sub Total of III																		
IV	**Work Phase**																		
A	**Arable Land Treatment**																		
	Vegetative Barriers																		
	Contour Binds																		
	Graded Bunds																		
	Loose Boulder Contour Bund	17	1.275	17	1.275	6	0.45	10	0.75	17	1.275	18	1.35	15	1.125	16	1.20	18	1.35
	Bench Terracing																		
	Wet Terracing																		
	Box Terracing																		
	Half Moon Terrace	20	1.50	20	1.50	3	0.225	10	0.75	9	0.675	10	0.75	18	1.35	6	0.45	15	1.125
	Field Bunding																		
	Peripheral Bunding			300	0.15	180	0.090	120	0.060	220	0.11	290	0.145	220	0.11	210	0.105	300	0.15
	Crop Demonstration																		
	Kitchen Gardening																		

	Improvement of Existing Paddy Fields	6	0.258	6	0.258	1	0.043			5	0.215	7	0.3010	10	0.43	5	0.215	10	0.43
	Crop Demonstration	6	0.30	10	0.50	6	0.30	7	0.35	10	0.50	15	0.75	10	0.50	10	0.50	12	0.60
	Agro – Horticulture			41	2.256	13	1.118	21	1.806	38	3.268	40	3.44	34	2.924	36	3.096	40	3.44
	Horticulture Development	37	3.182																
	Sub Total of A		**6.5275**		**7.209**		**2.226**		**3.716**		**6.043**		**6.736**		**6.439**		**5.566**		**7.095**
B	**Non Arable Land Treatment**																		
	Improvement of degraded forest/ existing natural forest	56	2.016	61	2.196	20	0.72	30	1.08	56	2.016	60	2.16	51	1.836	54	1.944	60	2.16
	Afforestation	22	2.222	25	2.525	9	0.9090	12	1.212	22	2.222	24	2.424	20	2.02	21	2.121	39	3.939
	Agro-Forestry/Strip Plantation	11	0.46926			4	.17064	6	.25596	11	.46926	10	.4266	10	0.4266	10	0.4266	12	0.51192
	Nursery Establishment																		
	Avenue Plantation			12	.51192	12	.51192												
	Sub Total of B		**4.70726**		**5.23292**		**1.79964**		**2.54796**		**4.70726**		**5.0106**		**4.2826**		**4.4916**		**6.61092**
C	**Drainage Line Treatment**																		
	Farm ponds/Dug out pond																		
	Water Harvesting Structures	1	1.23148	4	1.9958	1	.5601	6	2.30404	6	3.80097	1	0.76	2	1.63444	6	4.26137	2	1.02493
	Nallah Bund																		
	Earthen Embankment																		
	Check dam, H/W Dam, Diversion Dam/Irrigation Dam	2	1.09101	2	0.6523	1	.5541			1	.62816	3	2.90	2	1.20768	1	.62816	4	1.98515
	Loose Boulder Check Dam			6	0.50														
	Gabion Protection/Retaining wall	5	1.00									6	0.95			1	.17287		
	Stone masonry protection wall/ Retaining Wall	4	1.0748	13	.89712	2	.3463			3	.52861	2	0.4434	3	0.7222				
	Bamboo wall/Bamboo Spurs																		
	Drip Irrigation																		
	Water tank/Percolation tank																		
	Run off disposal channel	313.9	0.15995	1462.72	0.73286									131.16	0.06808				
	CC Irrigation channel					451.72	.22586												
	Aqueduct																		
	Sub Total of C		**4.55724**		**4.77804**		**1.68636**		**2.30404**		**4.95774**		**5.0534**		**3.6424**		**5.0624**	**6**	**6.01008**
D	**Livelihood**																		
	Tailoring	6	0.48	2	0.16					2	0.16	2	0.175			2	0.16	2	0.16
	Carpentry/Black smithy																		
	Agriculture implements																		
	Vegetable production/Kitchen Gardening	9	0.238	68	1.7075	4	0.102	12	0.244	18	0.45	53	1.325	10	0.2565	7	0.17	28	0.6925

	Apiculture							8	0.40	7	0.56					7	0.51	9	0.6985
	Masonry Hallow Block Making	5	0.25	2	0.10			2	0.10	2	0.10			2	0.2425	3	0.24	4	0.1755
	Piggery	11	0.93	5	0.40	7	0.510	6	0.48	4	0.32	7	0.56	7	0.56	2	0.16	5	0.40
	Poultry	8	0.64	5	0.40	4	0.306			5	0.40	8	0.64	6	0.48	11	0.94	5	0.40
	Vermin Composing							1	0.153	3	0.30								
	Composting (Duckery)																		
	Weaving																		
	Stabilized Mud Block Making																		
	Grocery Shop/Food Stalls																		
	Promotion of Indigenous Medicinal Practitioner																		
	Pisciculture									7	.2345			8	0.7695	5	0.25	2	0.16
	Soap Making																		
	Sub Total of D	**39**	**2.538**		**2.7675**		**0.918**		**1.377**		**2.5245**		**2.70**		**2.3085**		**2.43**	**55**	**2.6865**
E	**Production System**																		
	Poultry/Piggery			1	0.3075														
	Poultry Farming	1	0.282			3	0.306	1	0.153			2	0.60			2	0.60		
	Piggery Farming					6	0.612					2	0.60			1	0.27		
	Food Processing																		
	Floriculture																		
	Pisciculture (including supply of fingerlings)							1	0.459							1	0.21	2	0.2985
	Betel Nut Soaking tank																		
	Canes & Handicrafts																		
	Rural godown/Cold storage																		
	Cableway taxing																		
	Apiculture/Bee keeping									5	0.2805								
	Grocery shop							1	0.918										
	Vermin composting																		
	Milk cow rearing	2	1.692							1	0.8415			2	1.539			2	1.791
	Saloon/Beauty parlor																		
	Mushroom cultivation																		
	Goat rearing																		
	Weaving & Handloom																		
	Stabilized Mud Block Making													1	0.2585				
	Carpentry/Black smithy																		
	Duckery																		
	Sericulture																		
	Soap making																		

	Rice mill operation	1	0.846	1	0.9225								1	0.7695			1	0.8955
	Improved fuel making (fire cakes, etc)																	
	Integrated farming system			1	1.845					1	1.683	1	1.80			1	1.62		
	Basket making																		
	Kitchen gardening					4	0.102												
	Sub Total of E		**2.82**		**3.075**		**1.02**		**1.53**		**2.805**		**3.00**		**2.565**		**2.70**		**2.985**
	Sub Total IV (A+B+C+D+E)		**21.15**		**23.0625**		**7.65**		**11.475**		**21.0375**		**22.50**		**19.2375**		**20.25**		**22.3875**
V	Consolidation Phase	3%	0.846	3%	0.9225	3%	0.306	3%	0.459	3%	0.8415	3%	0.90	3%	0.7695	3%	0.81	3%	0.8955
	Sub Total of V	**3%**	**0.846**	**3%**	**0.9225**	**3%**	**0.306**	**3%**	**0.459**	**3%**	**0.8415**	**3%**	**0.90**	**3%**	**0.7695**	**3%**	**0.81**	**3%**	**0.8955**
	Grand Total (I+II+III+IV+V)		***21.996***		***23.985***		***7.956***		***11.934***		***21.879***		***23.40***		***20.007***		***21.06***		***23.283***

WDT Members
Community Organisation

WTD Member
Forestry

WDT Members
(Civil Engineer)

WDT Members
Agriculture

Project Leader
Umnei-Umsohphie Watershed
Committee IWMP IX

Details of the type of areas covered under the IWMP Programme:

Name of project	Year of sanction	Project Duration (dd/mm/yyyy)		Area of the project to be treated (Treatable area)	Project cost (in lakh)	Name of Micro Watershed & code nos. (as per DoLR's unique codification	Treatable Area (As per LULC)				Area details (Ha) falling within the projects (As per ownership)				
		From	To				Cultivated rainfed area	Cultivated irrigated area	Uncultivated wasteland		Pvt. Agri. land	Forest land	Community land	Others (Pl. specify)	Total area (Ha)
									Temporary fallow	Permanent					
W.K.H. IWMP-IX	2011-12	2011-12	2015-16	1500 Ha	225.00	Umnei-Umsohphie	50 Ha	Nil	184 Ha	11 Ha	50	1567	Nil	155	1721

Fund provision for the IWMP projects from all sources:

Name of project	IWMP Fund		Funds from other sources in addition to IWMP funds										Total
			Convergence funds		PPP		Community		Institutional finance		Others (Pl. specify)		
	Central share	State share	Name of scheme	Amount (in lakh)	Name of private sector	Financial contribution	Name	Financial contribution	Name	Financial contribution	Name	Financial contribution	
W.K.H. IWMP-IX	205.50 lakhs	22.50 lakhs	NREGS	21.22668	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	246.32668

Details of Project Fund Accounts of District Agency and Watershed Committee:

Name of projects	District Agency's Project Account details				Watershed Committee (WC) Account details				
	Name of the Bank & Branch where project account has been opened	Account Number (to be obtained confidentially	Account type (Saving/Current/ Others)	Name and Designation of authorized persons who operate the account	Name of Watershed Committee	Name of the Bank & Branch where project account has been opened	Account Number (to be obtained confidentially	Account type (Saving/Current/ Others)	Name and Designation of authorized persons who operate the account
W.K.H. IWMP-IX	State Bank of India Nongstoiñ		Saving	Shri. D.K. Khonglah DS&WCO	Umnei-Umsohphie	State Bank of India Nongstoiñ		Saving	Chairman WC, Secretary WC, Project Leader/WDT

Details of Convergence of IWMP with other schemes:

Sl. No.	District	Name of project	Name of Departments with schemes converging with IWMP	Available to IWMP due to convergence (in lakh)	Name of activity/task/ structure undertaken with converged funds a. Structures. b. Livelihoods. c. Any other (Pl. specify).	Reference No. of activity/task/structure in DPR[@]	Level at which decision for convergence was taken
	West Khasi Hills District	W.K.H. IWMP-IX	Community Rural Development Department NREGS	21.32668	1. Dug out pond 49 nos.	As per convergence Action Plan	Block Level and District Level

The above works plan are only for MGNREGS wages component only as the construction has no materials cost.

Action Plan of convergence with M.G.N.R.E.G.S, under Umnei-Umsohphie I.W.M.P – IX

Sl. No.	Name of works	Nos.	2012-2013	2013-14	2014-15	Total
1.	Construction of small dug out pond	17 nos.	7.399	-	-	7.399
	-do-	16 nos.	-	6.96384	-	6.96384
	-do-	16 nos.	-	-	6.96384	6.96384
		49 nos.	7.399	6.96384	6.96384	21.32668

(Rupees Twenty one lakhs thirty two thousand six hundred sixty eight) only.

The above works plan are only for MGNREGS wages components as the construction works has no material cost.

CHAPTER VI
CAPACITY BUILDING

Capacity Building is a process to systemically upgrade the skill of individuals or groups for achieving a specific target. Capacity Building in the project has been planned for all the stake holders involved i.e. State Level, District Level, Project Level and Village Level. The relevant details pertaining to Capacity Building has been shown below.

Table 6.1: List of approved Training Institute for Capacity Building:

1	2	3	4	5	6	7
Sl. No.	**State**	**Name of the Training Institute**	**Full address with contact no, website & email**	**Name & designation of the head of Institute**	**Type of Institute**	**Area (s) of specialization**
1.	Meghalaya	NIRD (NER)	Guwahati	Director	Central Govt.	Remote sensing Rural Devp.
2.		SIRD	Nongsder	Director	State Govt.	Capacity Building
3.		RRTC	Umran	Director	Don-Bosco	Agro-Horti, Animal Husbandry, entrepreneurship.
4.		ICAR	Umiam	Director	Central Govt.	- Do -
5.		VTC	Kyrdem Kulai	Director	State Govt.	Animal husbandry
6.		Fruit Garden	Shillong	Director	State Govt.	Agri-Hodti, fruit processing
7.		CTI	Byrnihat	Jt. Director	State Govt.	Rubber cultivation-maintenance-processing

*****From column no.2 total number of State implementing the programme; from column no.3 no. of Training Institute; from column no.9 total no. of category-wise training and trainees may be given at the end of the table for the entire country.
#Central Govt. Dept/State Govt. Dept/Autonomous Body/Research Institute/Universities/Other (please specify).

$ Capacity Building/Agriculture/Horticulture/Animal Husbandry/Pisiculture/Remote Sensing/Water Conservation/Ground Water/Forestry/Livelihood/Entrepreneurship Development/Others (pl. specify).

The training institute must fulfill the conditions mention in the operation guideline:

(1). Technical experts in field required by IWMP. (2). Past Experience. (3). Annual turnover. (4). Receives Fund either from Central or State Govt.
(5). Publication. (6). Not black listed by any Govt. Organization. (7). Audited Account. (8). Organizational structure.

Table 6.2: Capacity Building activities for the Year 2011-12 as on 31.11.2011 (dd.mm.yyyy).

1	2	3	4					5
Project	**Type of Training / Capacity Building**	**Agency / Institution to provide training**	**No. of trainings targeted during each financial year**					**Total**
			1st Year	**2nd Year**	**3rd Year**	**4th Year**	**5th Year**	
PIAs								
WDTs								
UGs	Entrepreneurship Maintenance of assets	P.I.A. & R.R.T.C.	25	50	25	10		110
SHGs	Entrepreneurship Maintenance of books	R.R.T.C.	30	75	15	5		125
WCs	Capacity Building	P.I.A.	35	35	-	-		70
GPs								
Community								
Others (Pl. specify)								

Table 6.3: Information, Education & Communication (IEC) activities for the year 2011-12 as on 31/11/2011 (dd/mm/yyyy)

Sl. No.	Activity	Executing Agency	Estimated expenditure (Rs.)
	Awareness	S&WC Division	2.25
	PRA Exercises	S&WC Division	
	Capacity Building	S&WC Division	
	Preparation of pamphlets, booklets, banners, posters	S&WC Division	

CHAPTER VII

EXPECTED OUTCOME

Table 7.1: Employment related outcomes:

Sl. No.	Name of villages	Wage employment										Self employment				
		No. of man days					No. of beneficiaries					No. of beneficiaries				
		SC	ST	Men	Women	Total	SC	ST	Men	Women	Total	SC	ST	Men	Women	Total
1.	Thangtngaw		100%					100%					100%			
2.	Nongrynniaw		100%					100%					100%			
3.	Mawngap Kynjang		100%					100%					100%			
4.	Mawngap		100%					100%					100%			
5.	Mawstieh		100%					100%					100%			
6.	Mawdongkiang		100%					100%					100%			
7.	Porsohsan		100%					100%					100%			
8.	Porkrong		100%					100%					100%			
9.	Mawtirang		100%					100%					100%			

Table 7.2: Migration details:

Name of village	No. of persons migrating	No. of days per year of migration	Major reason(s) for migrating	Distance of destination of migration from the village (Km)	Occupation during migration	Income from such occupation (in lakh)	For reduced migration identify major activities of IWMP responsible	
							Structures	Livelihoods
Thangtngaw	47	90	Seeking livelihood and daily labor in coal mine area during lean season (seasonal migration)	55 Km	Laborer in coal mine	0.575	Structure	Livelihood
Nongrynniaw	57	90						
Mawngap Kynjang	7	90						
Mawngap	17	90						
Mawstieh	18	90						
Mawdongkiang	53	90						
Porsohsan	22	90						
Porkrong	25	90						
Mawtirang	40	90						

*From column no.2 total no. of State; from column no.3 total no. of District; from column no.4 total no. of Project; from column no.5 total no. of village; from column no.6 total no. of persons migrating; from column no.7 average no. of days for annual migration; from column no.9 average distance of migration from the village and from column no.11 average income from occupation during migration, for the entire country may be given at the end of the table.

Table 7.5.2: Status of Drinking Water:

Availability of drinking water			Quality of drinking water			Comments
Pre – Project	Post – Project	Change in availability	Pre – Project	Post – Project	Change in availability	
Insufficient	Sufficient	7 – 9 months	Moderate	Improved	Improved	-

- From column no. 2 total number of State implementing the programme, from column no. 3 total number of District, from column no. 4 category-wise number of projects, from column no. 5 average number of months may be given at the end of the table for the entire country.

Table 7.5.3: Water Use Efficiency:

The over water availability in the project area will improve due to the soil and water conservation measures. Water use efficiency and management will also be better with the active involvement of the people and formation of user groups to maintain the assets created.

Table: 7.6: Vegetation/crop related outcomes:

Table: 7.6.1 Details of Kharif crop area and yield in the project areas:

1	2	3						4						5					
Name of Project	Name of Crops	Pre-Project						Mid-Term						Post-Project					
		Area (Ha)		Average yield (Qtl/Ha)		Total Production (Qtl)		Area (Ha)		Average yield (Qtl/Ha)		Total Production (Qtl)		Area (Ha)		Average yield (Qtl/Ha)		Total Production (Qtl)	
		Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf
W.K.H. IWMP-IX	Paddy	30	30	17	-	510	-												
	Maize	-	10	-	10	-	400												
	Ginger	-	20	-	75		1500												

Note : The Area of Jhum crops decrease in the mid-term and post project because of converting it to permanent plantation (Rubber & Arecanut).

* From column no. 2 total number of State, from column no. 3 total number of District, from column no. 4 total number of projects, from column no. 5 total number of crops, from column no. 6 to 8 total for the area average yield per Ha and total production, category-wise for the entire country may be given at the end of the table.

Irri. – Irrigated; Rf – Rainfed

Table: 7.6.2 Details of Rabi crop area and yield in the project areas:

1	2	3						4						5					
Name of Project	Name of Crops	Pre-Project						Mid-Term						Post-Project					
		Area (Ha)		Average yield (Qtl/Ha)		Total Production (Qtl)		Area (Ha)		Average yield (Qtl/Ha)		Total Production (Qtl)		Area (Ha)		Average yield (Qtl/Ha)		Total Production (Qtl)	
		Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf
W.K.H. IWMP-IX	Cabbage	5	-	10	-	50	-												
	Knoll khol	4	-	90	-	360	-												
	Mustard	4	-	8	-	32	-												
	Raddish	5	-	80	-	400	-												
	Cauliflower	20	52	12	12	240	624												
Total for the District																			

* From column no. 2 total number of State, from column no. 3 total number of District, from column no. 4 total number of projects, from column no. 5 total number of crops, from column no. 6 to 8 total for the area average yield per Ha and total production, category-wise for the entire country may be given at the end of the table.
Irri. – Irrigated; Rf – Rainfed

Table: 7.6.3 Details of Zaid crop area and yield in the project areas of the country: State-wise:

1	2	3						4						5					
Name of Project	Name of Crops	Pre-Project						Mid-Term						Post-Project					
		Area (Ha)		Average yield (Qtl/Ha)		Total Production (Qtl)		Area (Ha)		Average yield (Qtl/Ha)		Total Production (Qtl)		Area (Ha)		Average yield (Qtl/Ha)		Total Production (Qtl)	
		Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf	Irri	Rf
W.K.H. IWMP-IX	Maize		24.63		6		147												
Total of the District																			

* From column no. 2 total number of State, from column no. 3 total number of District, from column no. 4 total number of projects, from column no. 5 total number of crops, from column no. 6 to 8 total for the area average yield per Ha and total production, category-wise for the entire country may be given at the end of the table.
Irri. – Irrigated; Rf – Rainfed

Table : 7.6.4 Increase/Decrease in area under fodder:

Name of project	Duration of project	Pre project, tones/ha			Post project, tones/ha		
		Source/Name of report	Year of reference	Area already under fodder	Area under fodder proposed to be covered through IWMP	Area under fodder actually covered through IWMP	Change in area under fodder
W.K.H. IWMP-IX	5 years	NA	NA	NA	NA	NA	NA

* From column no. 2 total number of State implementing the programme, from column no. 3 total number of District, from column no. 4 total number of projects, from column no. 6 & 7 total areas in ha may be given at the end of the table for the entire country.

Table : 7.6.5 Increase/Decrease in forest/vegetation cover:

Name of project	Duration of project	Existing area tree cover (ha)			Expected outcome (ha)		
		Source/Name of report	Year of reference	Area already under forest/vegetative cover	Forest/vegetative proposed to be covered through IWMP	Forest/vegetative cover area actually covered through IWMP	Change in forest/vegetative cover area
W.K.H. IWMP-IX	5 years	LULC Map, NESAC Umiam	2005-06	103	194	-	-

* From column no. 2 total number of State implementing the programme, from column no. 3 total number of District, from column no. 4 total number of projects, from column no. 6 & 7 total areas in ha may be given at the end of the table for the entire country.

Table : 7.6.6 Increase/Decrease in area under horticulture:

Name of project	Duration of Project	Pre Project Area (ha)			Expected outcome (ha)		
		Source/Name of report	Year of reference	Area already under horticulture	Area under horticulture proposed to be covered through IWMP	Area under horticulture actually covered through IWMP	Change in area under horticulture
W.K.H. IWMP-IX	5 years						

* From column no. 2 total number of State implementing the programme, from column no. 3 total number of District, from column no. 4 total number of projects, from column no. 6 & 7 total areas in ha may be given at the end of the table for the entire country.

Table : 7.6.7 Increase/Decrease in area under fuel wood:

Name of Project	Duration of Project	Pre Project Area (ha)			Post Project Area (ha)		
		Source/Name of report	Year of reference	Area already under fuel wood	Area under fuel wood proposed to be covered through IWMP	Area under fuel wood actually covered through IWMP	Change in area under fuel wood
W.K.H. IWMP-IX	5 years	LULC Map, NESAC Umiam	2005-06	165.00	448.00	-	-

* From column no. 2 total number of State implementing the programme, from column no. 3 total number of District, from column no. 4 total number of projects, from column no. 6 & 7 total areas in ha may be given at the end of the table for the entire country.

Table: 7.7 Livelihood related outcomes:

Table: 7.7 Details of livestock in the project areas (for fluids please mention in liters, for solids please mention in kgs and income in Rs.)

Name of project	Type of animal	Pre Project			Mid Term			Post Project			Remarks
		No.	Yield	Income	No.	Yield	Income	No.	Yield	Income	
W.K.H. IWMP-IX	Cattle	529	-	26.452							
	Poultry	1743	-								
	Piggery	151	-								
Total for all projects											

* From column no. 2 total number of State, from column no. 3 total number of District, from column no. 4 total number of projects, from column no. 5 to 8 the total number of animals and the average yield and incomes, category wise for the entire country may be given at the end of the table.

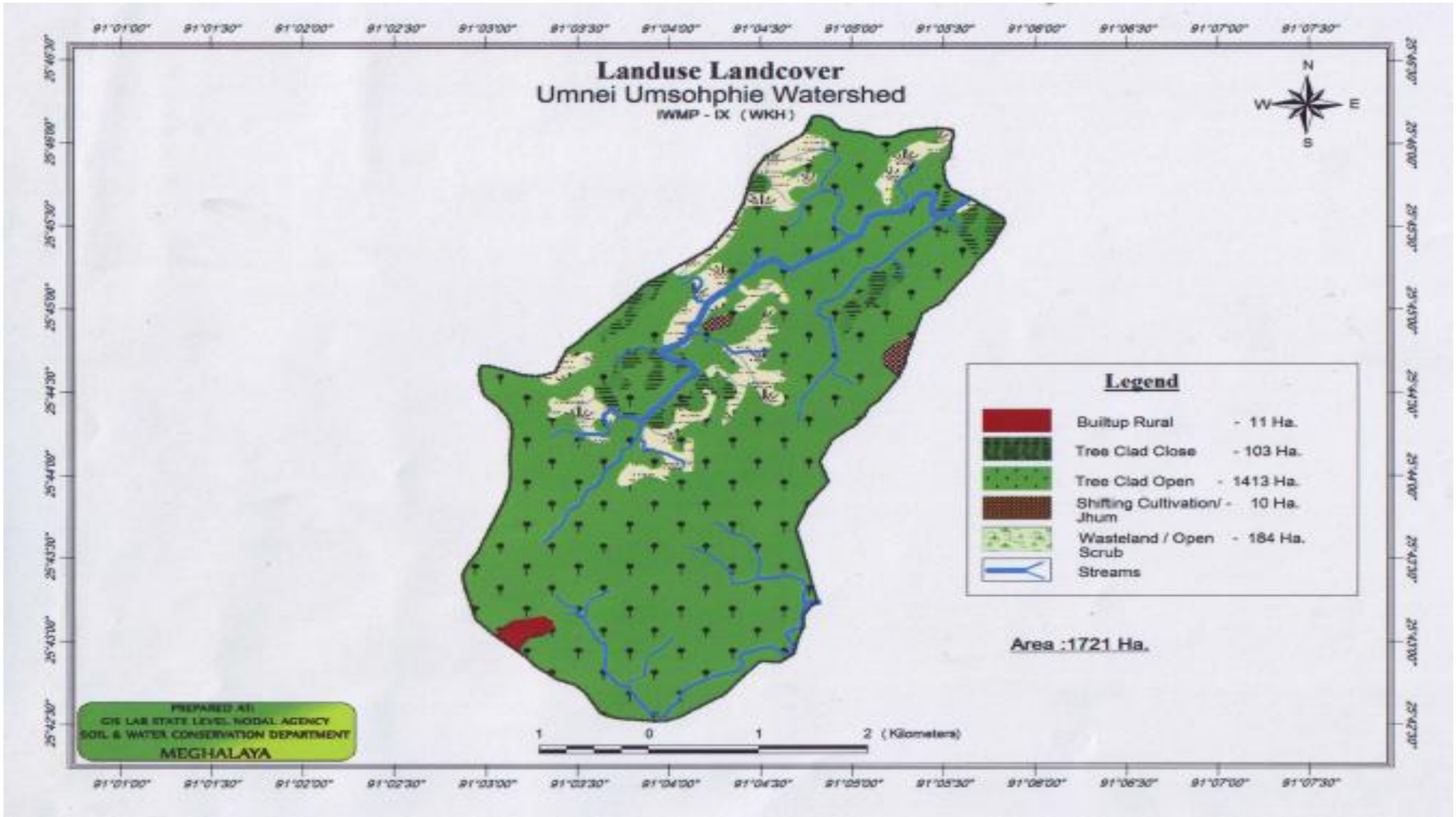
Table 7.8: Benefit cost Analysis
Details of B:C ratio should be enclosed
(Return period from 7 years)

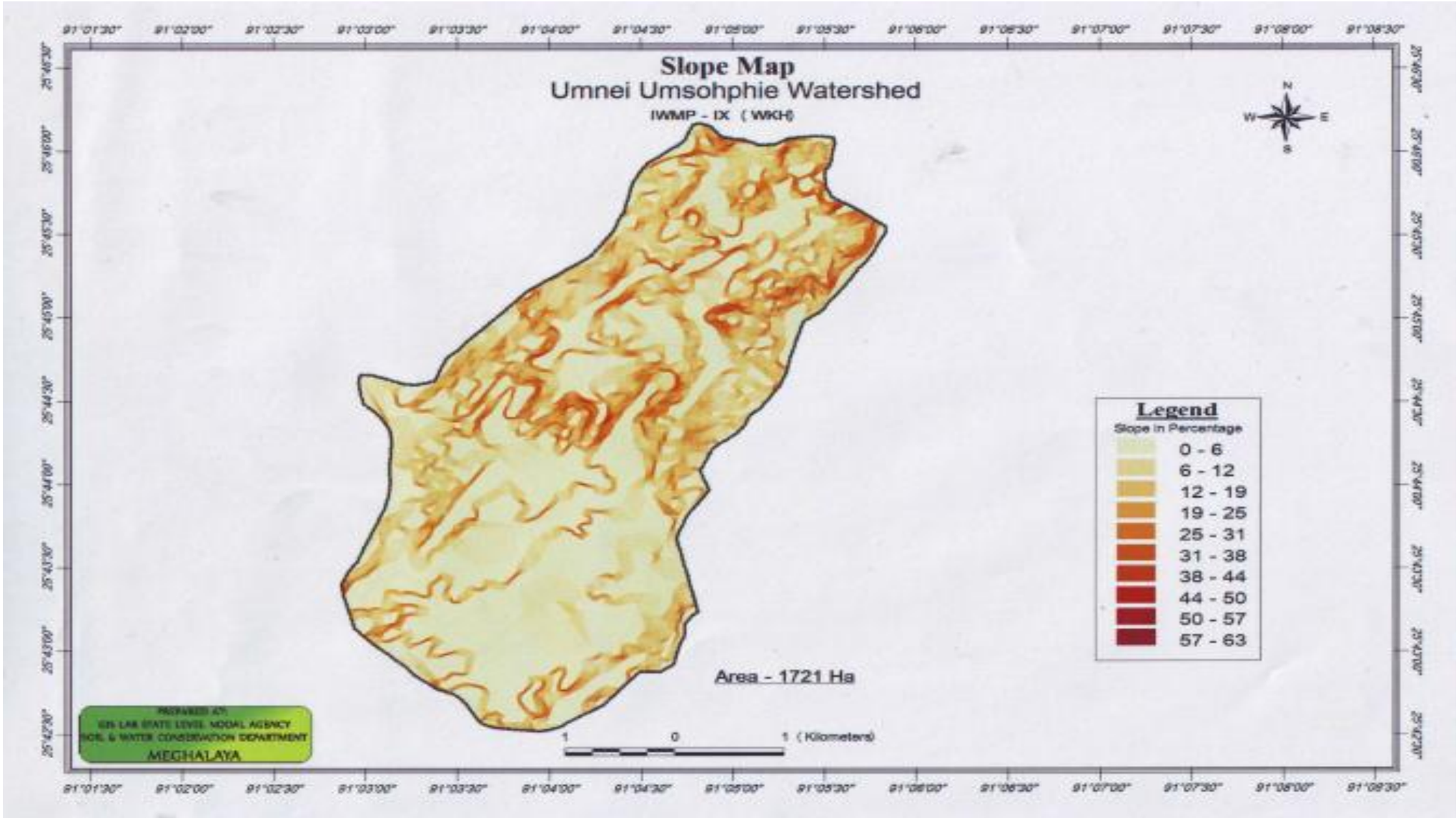
1	2	3	4	5	6	7
District	Name of project	Name of WC	Name of structure/activity	Estimated cost (in lakh)	Expected quantifiable benefits (Rs.)	Benefit cost ratio
West Khasi Hills	W.K.H. IWMP-IX	Umnei-Umsohphie	As per treatment plan	225.00 Lakhs	3814.88378	1.106

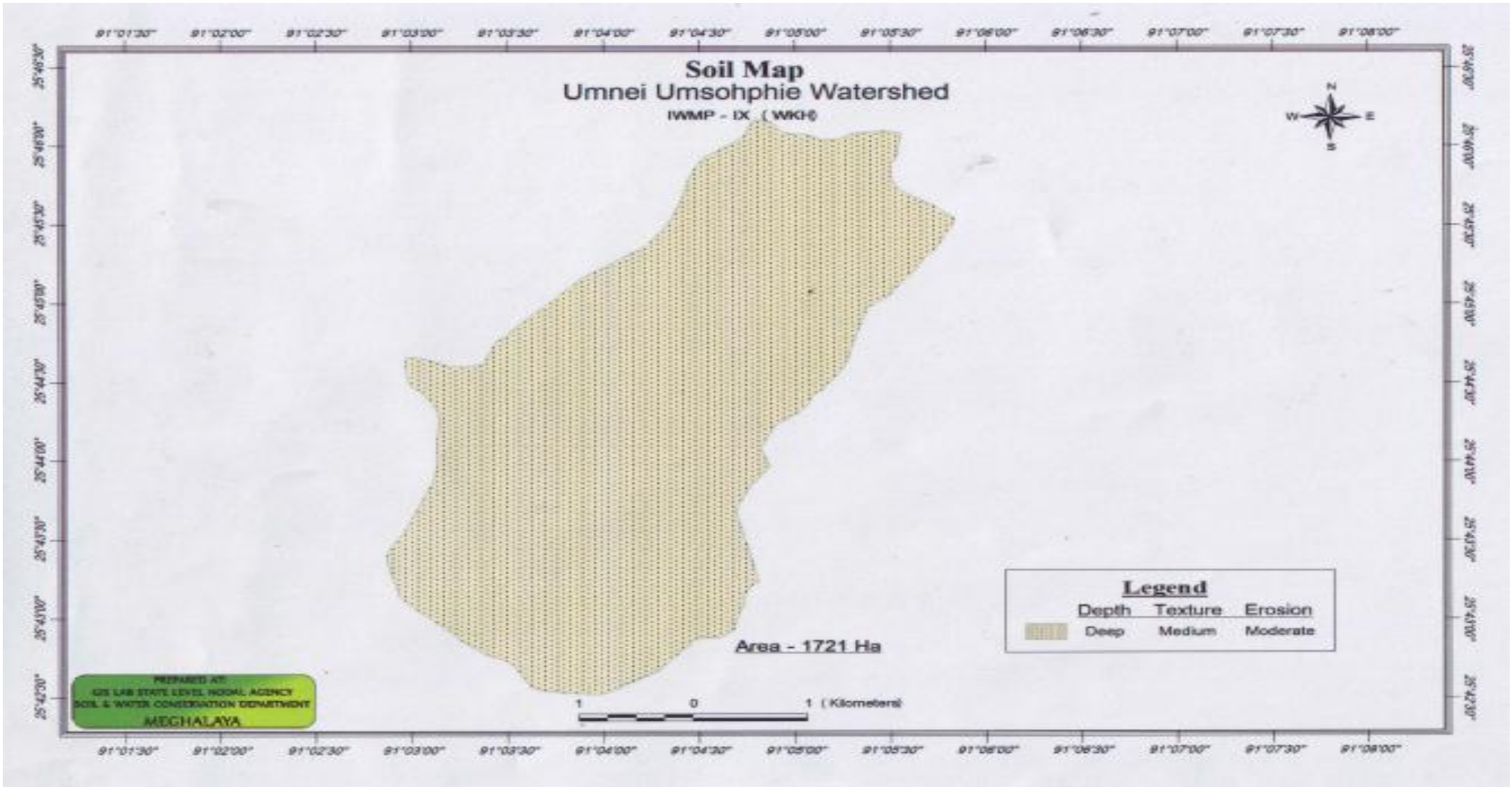
* From column no. 2 total number of State implementing the programme, from column no. 3 total number of District, from column no. 4 total number of projects, from column no. 5 number of WCs, from column no. 6 number of structures/activities, from column no. 7 to 10 category wise# total may be mentioned at the end of the table for the entire country.

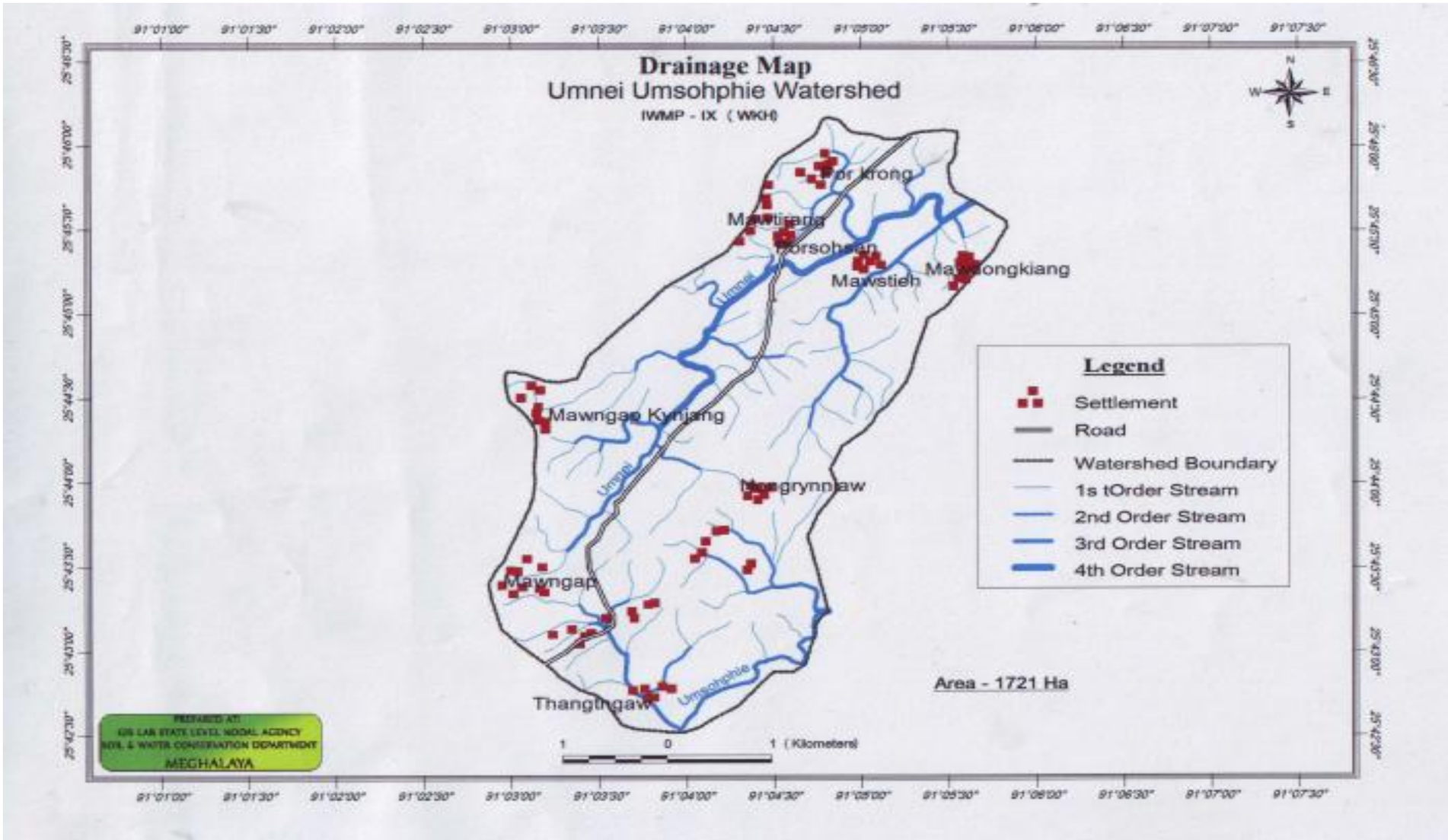
B:C ratio more than 1 – cost effective
Less than 1 – not cost effective

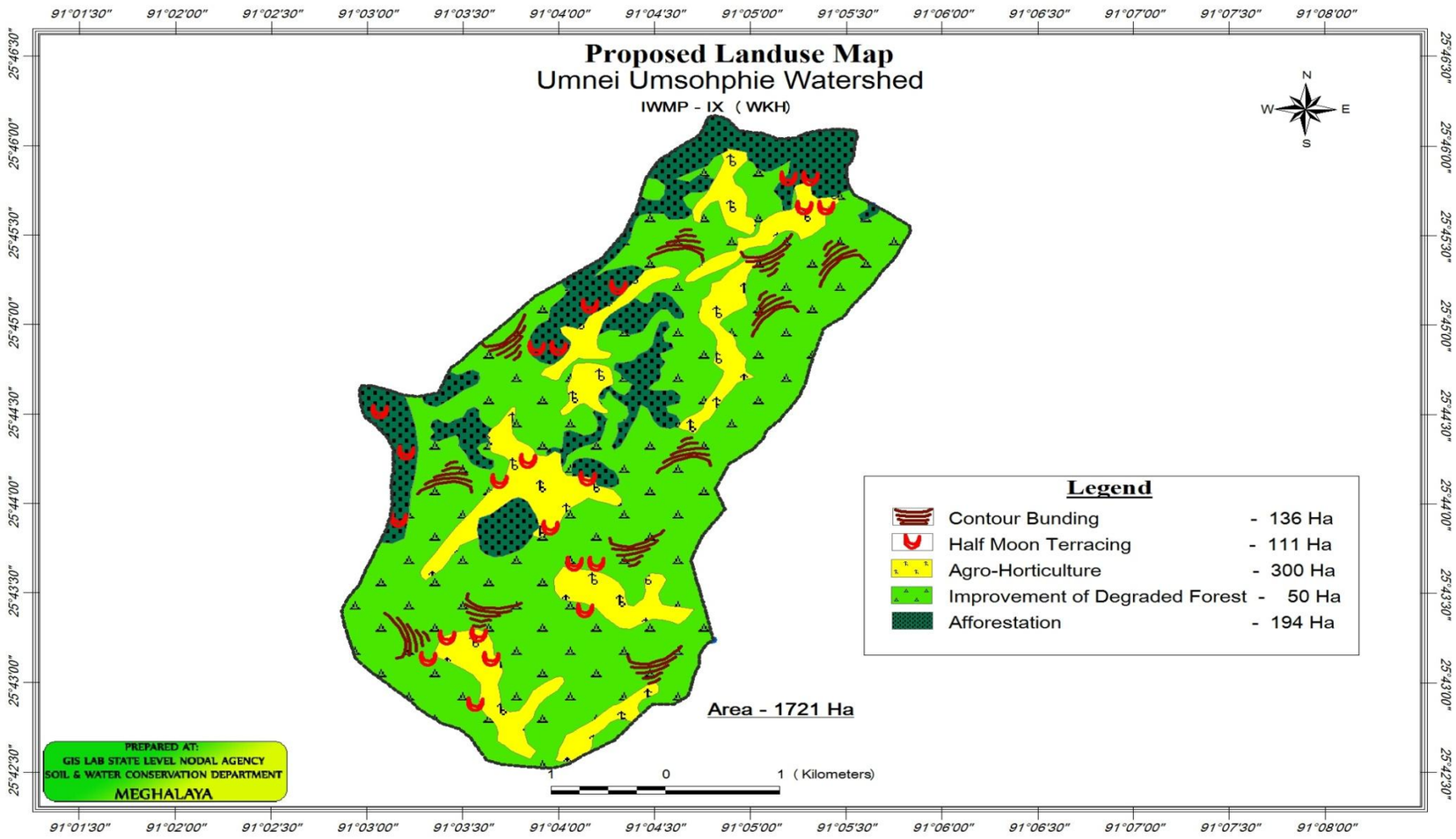
ANEXTURE I MAPS

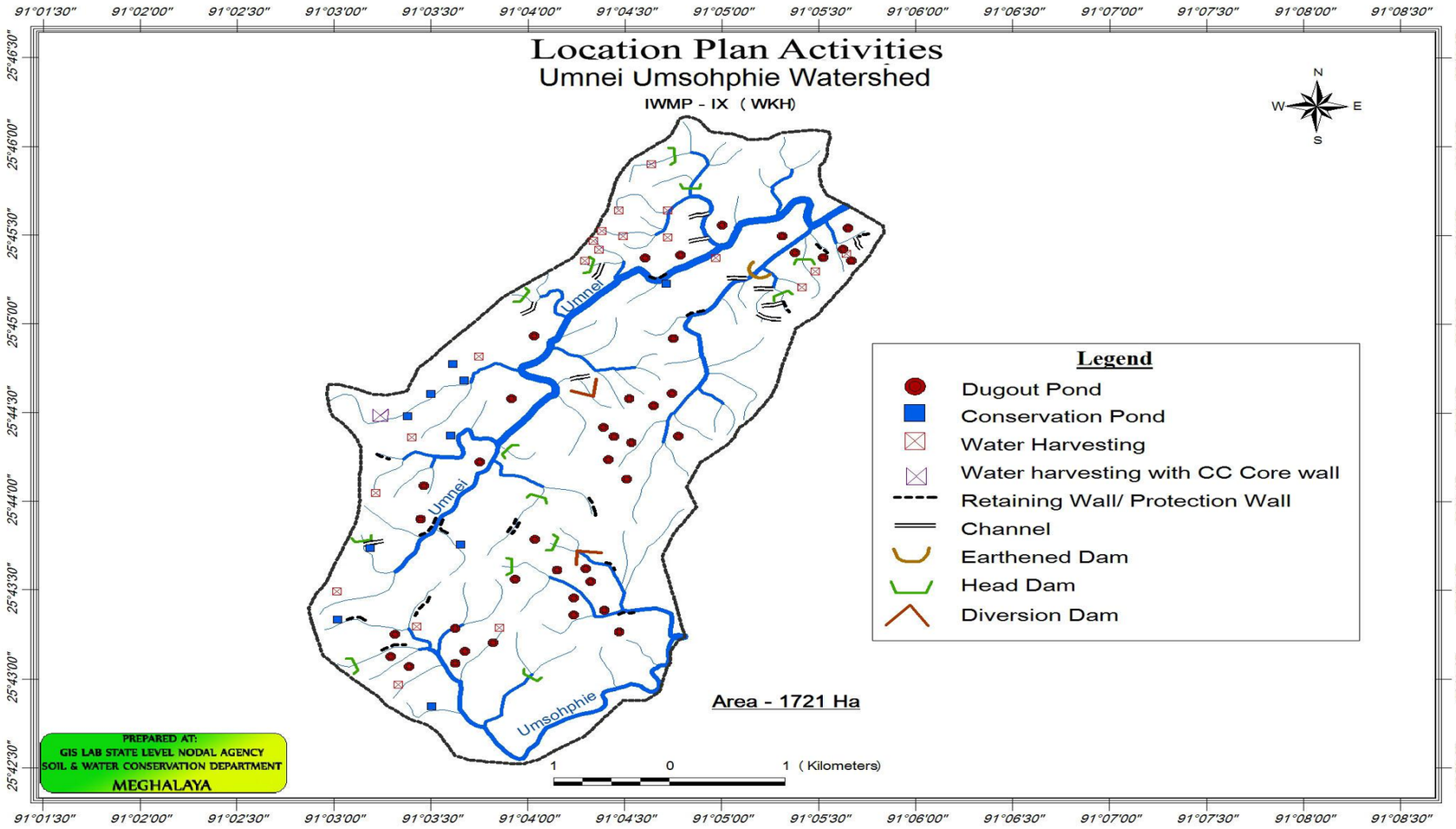

Landuse Landcover
Umnei Umsohphie Watershed
IWMP - IX (WKH)
N
W
E
S
Legend
Builtup Rural - 11 Ha.
Tree Clad Close - 103 Ha.
Tree Clad Open - 1413 Ha.
Shifting Cultivation/ Jhum - 10 Ha.
Wasteland / Open Scrub - 184 Ha.
Streams
Area :1721 Ha.
1 0 1 2 (Kilometers)
PREPARED AT:
GIS LAB STATE LEVEL NODAL AGENCY
SOIL & WATER CONSERVATION DEPARTMENT
MEGHALAYA


Slope Map
Umnei Umsohphie Watershed
IWMP - IX (WKH)
N
W
E
S
Legend
Slope in Percentage
0 - 6
6 - 12
12 - 19
19 - 25
25 - 31
31 - 38
38 - 44
44 - 50
50 - 57
57 - 63
Area - 1721 Ha
1 0 1 (Kilometers)
MEGHALAYA


Soil Map
Umnei Umsohphie Watershed
IWMP - IX (WKH)
N
W
E
S
Legend
Depth Texture Erosion
Deep Medium Moderate
Area - 1721 Ha
1 0 1 (Kilometers)
PREPARED AT:
GIS LAB STATE LEVEL NODAL AGENCY
SOIL & WATER CONSERVATION DEPARTMENT
MEGHALAYA


Drainage Map
Umnei Umsohphie Watershed
IWMP - IX (WKH)
Mawtiang
Mawstieh
Mawlongkiang
Mawngap Kynjang
Mawngap
Thangngaw
Umnei
Umsohphie
Legend
Settlement
Road
Watershed Boundary
1s tOrder Stream
2nd Order Stream
3rd Order Stream
4th Order Stream
Area - 1721 Ha
1 0 1 (Kilometers)
MEGHALAYA


Proposed Landuse Map
Umnei Umsohphie Watershed
IWMP - IX (WKH)
N
W
E
S
Legend
Contour Bunding - 136 Ha
Half Moon Terracing - 111 Ha
Agro-Horticulture - 300 Ha
Improvement of Degraded Forest - 50 Ha
Afforestation - 194 Ha
Area - 1721 Ha
PREPARED AT:
GIS LAB STATE LEVEL NODAL AGENCY
SOIL & WATER CONSERVATION DEPARTMENT
MEGHALAYA
1 0 1 (Kilometers)
91°01'30" 91°02'00" 91°02'30" 91°03'00" 91°03'30" 91°04'00" 91°04'30" 91°05'00" 91°05'30" 91°06'00" 91°06'30" 91°07'00" 91°07'30" 91°08'00"
25°46'30" 25°46'00" 25°45'30" 25°45'00" 25°44'30" 25°44'00" 25°43'30" 25°43'00" 25°42'30"


Location Plan Activities
Umnei Umsohphie Watershed
IWMP - IX (WKH)
N
W
E
S
Legend
Dugout Pond
Conservation Pond
Water Harvesting
Water harvesting with CC Core wall
Retaining Wall/ Protection Wall
Channel
Earthened Dam
Head Dam
Diversion Dam
Umnei
Umnei
Umsohphie
Area - 1721 Ha
1 0 1 (Kilometers)
PREPARED AT:
GIS LAB STATE LEVEL NODAL AGENCY
SOIL & WATER CONSERVATION DEPARTMENT
MEGHALAYA
91°01'30" 91°02'00" 91°02'30" 91°03'00" 91°03'30" 91°04'00" 91°04'30" 91°05'00" 91°05'30" 91°06'00" 91°06'30" 91°07'00" 91°07'30" 91°08'00" 91°08'30"
25°46'30" 25°46'00" 25°45'30" 25°45'00" 25°44'30" 25°44'00" 25°43'30" 25°43'00" 25°42'30"

ANEXTURE II ESTIMATES COST

Estimate for construction of Diversion Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 410.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as irected.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

6.00x1.30x1.00 = 7.80m³

@ Rs. 201/m³ — Rs. 1567.80.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. With new stones.

6.00x0.90x1.00m = 5.40m³

$6.00 \times \frac{0.90+0.75}{2} \times 1.20\text{m} = 5.94\text{m}^3$

= 11.34m³

@ Rs. 1574/m³ — Rs. 17849.16.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.00x2.10x.10x2m = 2.52m³

6.00x0.75x0.10m = 0.45m³

= 2.97m³

@ Rs. 3216/m³ — Rs. 9551.52.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

6.00x2.20x2m = 26.40m²

@ Rs. 308/m² — Rs. 8131.20.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

6.00x1.30x2 = 15.60m²
6.00x0.95m = 5.70m²
= 21.30m²

Prop 1:3; @ Rs. 137/m² Rs. 2918.10.

Total Rs. 40,427.78.

Say Rs. 40,422.00.

(Rupees Forty thousand four hundred twenty two) only.

Submittted

Estimate for construction of Diversion Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 410.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the **foundation** trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as irected.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

6.00x1.30x1.00 = 7.80m³

@ Rs. 201/m³ — Rs. 1567.80.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. With new stones.

6.00x0.90x1.00m = 5.40m³

6.00x $\frac{0.90+0.75}{2}$ x1.20m = 5.94m³

= 11.34m³

@ Rs. 1574/m³ — Rs. 17849.16.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.00x2.10x.10x2m = 2.52m³

6.00x0.75x0.10m = 0.45m³

= 2.97m³

@ Rs. 3216/m³ — Rs. 9551.52.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

6.00x2.20x2m = 26.40m²

@ Rs. 308/m² — Rs. 8131.20.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

6.00x1.30x2 = 15.60m²
6.00x0.95m = 5.70m²
= 21.30m²

Prop 1:3; @ Rs. 137/m² Rs. 2918.10.

Total Rs. 40,427.78.

Say Rs. 40,422.00.

(Rupees Forty thousand four hundred twenty two) only.

Submittted

Estimate for construction of Drinking Well
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 300.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

3.20x3.20x1.50 = 15.36m³

@ Rs. 194/m³ — Rs. 2979.84.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

1.00x3.25x3.50x0.10m = 1.137m³

@ Rs. 3216/m³ — Rs. 3656.59.

4/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

4.00x2.00x0.60x1.20m = 5.76m³

@ Rs. 1574/m³ — Rs. 9066.24.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

3.00x3.00m = 9.00m²

@ Rs. 308/m² — Rs. 2772.00.

6/12.15 Providing hollow cement concrete block wall in proportion 1:1:8 (1cement, 1hydraulic lime, 8sand) complete laid in cement mortar 1:6 (1cement, 6sand) complete as directed, including curing three times a day for 10 (ten) days.

3.00x1.20x2.00m = 7.20m²

a. Thickness @ Rs. 263/m² — Rs. 1893.60.

7/7.1 Providing 12mm thick cement plastering including clearing surface, curing, and carriage of sand within 200m complete (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

b. Proportion 1:3

3.00x2.00x1.20x2 = 14.40m²

2.00x3.25x3.50 = 22.75m²

= 37.15m²

@ Rs. 137/m² Rs. 5089.55.

8/6.15 Supplying fitting and fixing including bending, cranking and placing in position as per approved designed drawing, including supplying of tying wire 20 gauge complete as directed.

b. Torsteel @ 0.8% 0f 1.137cm² C.C. work = .72qtls

@ Rs. 5945/qtl Rs. 4280.40.

Total Rs. 30,038.22.

Say Rs. 30,000.00.

(Rupees Thirty thousand) only.

Submitted

Estimate for construction of Drinking Well
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 300.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

3.20x3.20x1.50 = 15.36m³

@ Rs. 194/m³ — Rs. 2979.84.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

1.00x3.25x3.50x0.10m = 1.137m³

@ Rs. 3216/m³ — Rs. 3656.59.

4/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

4.00x2.00x0.60x1.20m = 5.76m³

@ Rs. 1574/m³ — Rs. 9066.24.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

3.00x3.00m = 9.00m²

@ Rs. 308/m² — Rs. 2772.00.

6/12.15 Providing hollow cement concrete block wall in proportion 1:1:8 (1cement, 1hydraulic lime, 8sand) complete laid in cement mortar 1:6 (1cement, 6sand) complete as directed, including curing three times a day for 10 (ten) days.

3.00x1.20x2.00m = 7.20m²

a. Thickness @ Rs. 263/m² — Rs. 1893.60.

7/7.1 Providing 12mm thick cement plastering including clearing surface, curing, and carriage of sand within 200m complete (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

b. Proportion 1:3

3.00x2.00x1.20x2 = 14.40m²

2.00x3.25x3.50 = 22.75m²

= 37.15m²

@ Rs. 137/m² Rs. 5089.55.

8/6.15 Supplying fitting and fixing including bending, cranking and placing in position as per approved designed drawing, including supplying of tying wire 20 gauge complete as directed.

b. Torsteel @ 0.8% 0f 1.137cm² C.C. work = .72qtls

@ Rs. 5945/qtl Rs. 4280.40.

Total Rs. 30,038.22.

Say Rs. 30,000.00.

(Rupees Thirty thousand) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 800.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

6.00x1.30x1.00 = 7.80m³

@ Rs. 201/m³ — Rs. 1567.80.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. With new stones

6.00x0.90x1.00m = 5.40m³

6.00x $\frac{0.90+0.75}{2}$ x1.20m = 5.94m³

= 11.34m³

@ Rs. 1574/m³ — Rs. 17849.16.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.00x2.10x.10x2m = 2.52m³

6.00x0.75x0.10m = 0.45m³

= 2.97m³

@ Rs. 3216/m³ — Rs. 9551.52.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

6.00x2.20x2m = 26.40m²

@ Rs. 308/m² — Rs. 8131.20.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

6.00x1.30x2 = 15.60m²
6.00x0.95m = 5.70m²
= 21.30m²

Prop 1:3; @ Rs. 137/m² Rs. 2918.10.

Total Rs. 40,817.78.

Say Rs. 40,810.00.

(Rupees Forty thousand eight hundred ten) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 800.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

6.00x1.30x1.00 = 7.80m³

@ Rs. 201/m³ — Rs. 1567.80.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. With new stones

6.00x0.90x1.00m = 5.40m³

6.00x $\frac{0.90+0.75}{2}$ x1.20m = 5.94m³

= 11.34m³

@ Rs. 1574/m³ — Rs. 17849.16.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.00x2.10x.10x2m = 2.52m³

6.00x0.75x0.10m = 0.45m³

= 2.97m³

@ Rs. 3216/m³ — Rs. 9551.52.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

6.00x2.20x2m = 26.40m²

@ Rs. 308/m² — Rs. 8131.20.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

6.00x1.30x2 = 15.60m²
6.00x0.95m = 5.70m²
= 21.30m²

Prop 1:3; @ Rs. 137/m² Rs. 2918.10.

Total Rs. 40,817.78.

Say Rs. 40,810.00.

(Rupees Forty thousand eight hundred ten) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 800.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

6.00x1.30x1.00 = 7.80m³

@ Rs. 201/m³ — Rs. 1567.80.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. With new stones

6.00x0.90x1.00m = 5.40m³

6.00x $\frac{0.90+0.75}{2}$ x1.20m = 5.94m³

= 11.34m³

@ Rs. 1574/m³ — Rs. 17849.16.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.00x2.10x.10x2m = 2.52m³

6.00x0.75x0.10m = 0.45m³

= 2.97m³

@ Rs. 3216/m³ — Rs. 9551.52.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

6.00x2.20x2m = 26.40m²

@ Rs. 308/m² — Rs. 8131.20.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

6.00x1.30x2 = 15.60m²
6.00x0.95m = 5.70m²
= 21.30m²

Prop 1:3; @ Rs. 137/m² Rs. 2918.10.

Total Rs. 40,817.78.

Say Rs. 40,810.00.

(Rupees Forty thousand eight hundred ten) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 800.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

6.00x1.30x1.00 = 7.80m³

@ Rs. 201/m³ — Rs. 1567.80.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. With new stones

6.00x0.90x1.00m = 5.40m³

6.00x $\frac{0.90+0.75}{2}$ x1.20m = 5.94m³

= 11.34m³

@ Rs. 1574/m³ — Rs. 17849.16.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.00x2.10x.10x2m = 2.52m³

6.00x0.75x0.10m = 0.45m³

= 2.97m³

@ Rs. 3216/m³ — Rs. 9551.52.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

6.00x2.20x2m = 26.40m²

@ Rs. 308/m² — Rs. 8131.20.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

6.00x1.30x2 = 15.60m²
6.00x0.95m = 5.70m²
= 21.30m²

Prop 1:3; @ Rs. 137/m² Rs. 2918.10.

Total Rs. 40,817.78.

Say Rs. 40,810.00.

(Rupees Forty thousand eight hundred ten) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 800.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

6.00x1.30x1.00 = 7.80m³

@ Rs. 201/m³ — Rs. 1567.80.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. With new stones

6.00x0.90x1.00m = 5.40m³

6.00x $\frac{0.90+0.75}{2}$ x1.20m = 5.94m³

= 11.34m³

@ Rs. 1574/m³ — Rs. 17849.16.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.00x2.10x.10x2m = 2.52m³

6.00x0.75x0.10m = 0.45m³

= 2.97m³

@ Rs. 3216/m³ — Rs. 9551.52.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

6.00x2.20x2m = 26.40m²

@ Rs. 308/m² — Rs. 8131.20.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

6.00x1.30x2 = 15.60m²
6.00x0.95m = 5.70m²
= 21.30m²

Prop 1:3; @ Rs. 137/m² Rs. 2918.10.

Total Rs. 40,817.78.

Say Rs. 40,810.00.

(Rupees Forty thousand eight hundred ten) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S rate	Rs. 120.00.
2/2.4	Earth work in excavation for foundation of Hume Pipe culvert, slab drain, retaining wall, face wall upto the desired founding level, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift. a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc. 6.85x0.75x0.50m = 2.57m³ @ Rs. 99/m³	Rs. 254.43.
3/4.1	Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches. a. New stones. 6.85x0.65x0.50m = 2.23m³ 6.85x $\frac{0.65+0.55}{2}$ x1.00m = 4.11m³ = 6.34m³ @ Rs. 1045/m³	Rs. 6614.85.
	Total	Rs. 6,989.28.
	Say	Rs. 6,985.00.

(Rupees Six thousand nine hundred eighty five) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

$7.20 \times 0.75 \times 0.50\text{m} = 2.70\text{m}^3$

@ Rs. 194/m^3 Rs. 523.80.

2/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

b. New stones.

$7.20 \times 0.65 \times 0.50\text{m} = 2.340\text{m}^3$

$7.20 \times \frac{0.65+0.55}{2} \times 1.05\text{m} = 4.725\text{m}^3$

$= 7.065\text{m}^3$

@ Rs. 1045/m^3 Rs. 7382.92.

Total Rs. 7,906.72.

Say Rs. 7,900.00.

(Rupees Seven thousand nine hundred) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

$7.20 \times 0.75 \times 0.50\text{m} = 2.70\text{m}^3$

@ Rs. 194/m^3 Rs. 523.80.

2/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

a. New stones.

$7.20 \times 0.65 \times 0.50\text{m} = 2.340\text{m}^3$

$7.20 \times \frac{0.65+0.55}{2} \times 1.05\text{m} = 4.725\text{m}^3$

$= 7.065\text{m}^3$

@ Rs. 1045/m^3 Rs. 7382.92.

Total Rs. 7,906.72.

Say Rs. 7,900.00.

(Rupees Seven thousand nine hundred) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

7.20x0.75x0.50m = 2.70m³

@ Rs. 194/m³ Rs. 523.80.

2/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

a. New stones.

7.20x0.65x0.50m = 2.340m³

$7.20 \times \frac{0.65+0.55}{2} \times 1.05m = 4.725m^3$

= 7.065m³

@ Rs. 1045/m³ Rs. 7382.92.

Total Rs. 7,906.72.

Say Rs. 7,900.00.

(Rupees Seven thousand nine hundred) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

7.20x0.75x0.50m = 2.70m³

@ Rs. 194/m³ Rs. 523.80.

2/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

a. New stones.

7.20x0.65x0.50m = 2.340m³

$7.20 \times \frac{0.65+0.55}{2} \times 1.05m = 4.725m^3$

= 7.065m³

@ Rs. 1045/m³ Rs. 7382.92.

Total Rs. 7,906.72.

Say Rs. 7,900.00.

(Rupees Seven thousand nine hundred) only.

Submitted

Estimate for construction of Washing Place
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 350.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

$4.80 \times 1.00 \times 0.50 = 2.40 m^3$
$4.80 \times 2.40 \times 0.30 = 3.46 m^3$
$= 5.86 m^3$
@ Rs. 201/m^3 — Rs. 1177.86.

3/4.4 Providing regular coursed stone masonry work only in abutment walls, with hammer dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) and with proper key stones not less than 25cm x 25cm x 75cm long in cement mortar 1:3 including carriage of stone within 200m complete filling in trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height of wall in every 1m should be kept exposed till inspected by the Supervising Officer). The work should be taken up only after obtaining approval from S.E.

$4.80 \times 1.00 \times 0.50m = 2.40 m^3$
$4.80 \times 1 + .60 \times 1.50 = 5.76 m^3$
2
$4.80 \times 2.40 \times 0.60m = 6.91 m^3$
$= 15.07 m^3$
(-) less $2.40 \times 1.20 \times 0.30 = 0.86 m^3$
$= 14.21 m^3$
@ Rs. 1771/m^3 — Rs. 25165.91.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$1.80 \times 0.175 \times 0.175 \times 4 = 0.220 m^3$
$4.80 \times 0.175 \times 0.175 \times 2 = 0.294 m^3$
$= 0.514 m^3$
@ Rs. 3216/m^3 — Rs. 1653.02.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

$4.80 \times 2.00 \times 2m = 19.20 m^2$
@ Rs. 308/m^2 — Rs. 5913.60.

6/7.1 Providing 12mm thick cement plastering including clearing surface, curing, and carriage of sand within 200m complete (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

4.80x1.60x2 = 15.36m²
4.80x2.40m = 11.52m²
2.40x0.30x3 = 2.16m²
1.20x0.30x2 = 0.72m²
4.80x0.30 = 1.44m²
1.20x0.175x4x4 = 3.36m²
4.80x0.175x4x2 = 6.72m²
= 41.28m²
@ Rs. 137/m² Rs. 5655.36.

7/6.15 Supplying fitting and fixing including bending, cranking and placing in position as per approved designed drawing, including supplying of tying wire 20 gauge complete as directed.

b. Torsteel @ 0.8% 0f 0.514m³ C.C. work = .35qtls
@ Rs. 5945/qtl Rs. 2080.75.

8/7.7 Painting including supplying of paint of approved quality in all shades with two coats of weather shield (plastic paint) after proper cleaning the surface on cement work and stone masonry work, complete as directed.

4.80x0.175x4x4 = 3.36m²
4.80x0.175x4x2 = 6.72m²
= 10.08m²
@ Rs. 148/m² Rs. 1491.84.

9/10.2 Extra for carriage of earth, sand, stone aggregates, stone chip, building stone, mawthup, blindage etc, beyound the initial lead of 200m including loading and unloading.

ii. On rough roaad other than black-topped roads

A. 1st Km: per Km or part thereof
for 15m³ @ Rs. 159/m³ - Rs. 2385/-
B. In subsequent Km:
i). 0-5 Km @ Rs. 26/m³ - Rs. 1950/-
- Rs. 4335/-

Rs. 4335.00.

10/12.7 Providing 50mm dia G.I. Pipe (ISI Mark) railing including cutting, bending the pipe and sitting fixing with elbow sockets and embedded into RCC Post, stone wall etc where ever necessary with concrete cement in prop 1:2:4 complete as directed.

For 7.00 Rm @ Rs. 490/Rm Rs. 3430.00.

Total Rs. 51,253.34.

Say Rs. 51,248.00.

(Rupees Fifty one thousand two hundred forty eight) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate Rs. 110.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

8.00x.60x.70m = 3.36m³

@ Rs. 201/m³ Rs. 675.36.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$$8.00 \times \frac{0.20+0.175}{2} \times 2.20m = 3.30m^3$$

@ Rs. 3216/m³ Rs. 10,612.80.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

8.00x1.25x2 = 20.00m²

@ Rs. 308/m² Rs. 6,160.00.

5/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top

50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradiation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

8.00x2.40x1.50m	= 28.80m³	
8.00x½x1.50x3.00x2	= 36.00m³	
	= 64.80m³	
(-) less c/wall	= 3.30m³	
	= 61.50m³	
@ Rs. 275/m³		Rs. 16,912.50.

Total Rs. 34,461.66.

Say Rs.34440;00

(Rupees thirty four thousand four hundred forty) only

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate Rs. 110.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

8.00x.60x.70m = 3.36m³

@ Rs. 201/m³ Rs. 675.36.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$$8.00 \times \frac{0.20+0.175}{2} \times 2.20\text{m} = 3.30\text{m}^3$$

@ Rs. 3216/m³ Rs. 10,612.80.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

8.00x1.25x2 = 20.00m²

@ Rs. 308/m² Rs. 6,160.00.

5/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top

50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradiation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

8.00x2.40x1.50m	= 28.80m³	
8.00x½x1.50x3.00x2	= 36.00m³	
	= 64.80m³	
(-) less c/wall	= 3.30m³	
	= 61.50m³	
@ Rs. 275/m³		Rs. 16,912.50.

Total Rs. 34,461.66.

Say Rs.34440;00

(Rupees thirty four thousand four hundred forty) only

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 220.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

$8.20 \times 0.60 \times 0.70\text{m} = 3.44\text{m}^3$

@ Rs. 201/m³ — Rs. 691.44.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$8.20 \times \frac{0.20+0.175}{2} \times 2.20\text{m} = 3.382\text{m}^3$

@ Rs. 3216/m³ — Rs. 10,876.51.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

$8.20 \times 1.20 \times 2 = 19.68\text{m}^2$

@ Rs. 308/m² — Rs. 6,061.44.

5/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top

50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradiation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

8.20x2.50x1.50m	= 30.750m³	
8.20x½x1.50x3.00x2	= 36.900m³	
	= 67.650m³	
(-) less c/wall	= 3.400m³	
	= 64.25m³	
@ Rs. 275/m³		Rs. 17,668.75.

Total Rs. 35,518.14.

Say Rs. 35,500.00.

(Rupees Thirty five thousand five hundred) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 220.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

$8.20 \times 0.60 \times 0.70\text{m} = 3.44\text{m}^3$

@ Rs. 201/m³ — Rs. 691.44.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$8.20 \times \frac{0.20+0.175}{2} \times 2.20\text{m} = 3.382\text{m}^3$

@ Rs. 3216/m³ — Rs. 10,876.51.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

$8.20 \times 1.20 \times 2 = 19.68\text{m}^2$

@ Rs. 308/m² — Rs. 6,061.44.

5/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top 50cm of the embankment should be sandy soil. (only profile will

measure after compaction of embankment be taken for the purpose of making payment). The gradiation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

8.20x2.50x1.50m	= 30.750m³	
8.20x½x1.50x3.00x2	= 36.900m³	
	= 67.650m³	
(-) less c/wall	= 3.400m³	
	= 64.25m³	
@ Rs. 275/m³		Rs. 17,668.75.
	Total	Rs. 35,518.14.
	Say	Rs. 35,500.00.

(Rupees Thirty five thousand five hundred) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 430.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

9.50x0.90x1.00m = 8.55m³
@ Rs. 201/m³ — Rs. 1718.55.

3/4.3 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

9.50x0.80x0.90 = 6.84m³
9.50x $\frac{.80+.70}{2}$ x 1.60m = 11.40m³
= 18.24m³
@ Rs. 1574/m³ — Rs. 28709.76.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

9.50x2.50x.10m = 2.375m³
9.50x0.75x.75m = 0.605m³
= 2.980m³
@ Rs. 3216/m³ — Rs. 9583.68.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

9.50x2.50m = 23.75m²
@ Rs. 308/m² — Rs. 7315.00.

6/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the

shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top 50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradiation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

9.50x2.00x1.80m = 34.20m³
9.50x½x1.80x2.70m = 23.08m³
= 57.28m³
@ Rs. 275/m³ Rs. 15752.00.

Total Rs. 63,508.99.

Say Rs. 63,500.00.

(Rupees Sixty three thousand five hundred) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 430.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

9.50x0.90x1.00m = 8.55m³
@ Rs. 201/m³ — Rs. 1718.55.

3/4.3 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

9.50x0.80x0.90 = 6.84m³
9.50x $\frac{.80+.70}{2}$ x 1.60m = 11.40m³
= 18.24m³
@ Rs. 1574/m³ — Rs. 28709.76.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

9.50x2.50x.10m = 2.375m³
9.50x0.75x.75m = 0.605m³
= 2.980m³
@ Rs. 3216/m³ — Rs. 9583.68.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

9.50x2.50m = 23.75m²
@ Rs. 308/m² — Rs. 7315.00.

6/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the

shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top 50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradiation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

9.50x2.00x1.80m = 34.20m³
9.50x½x1.80x2.70m = 23.08m³
= 57.28m³
@ Rs. 275/m³ Rs. 15752.00.

Total Rs. 63,508.99.

Say Rs. 63,500.00.

(Rupees Sixty three thousand five hundred) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 430.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

9.50x0.90x1.00m = 8.55m³
@ Rs. 201/m³ — Rs. 1718.55.

3/4.3 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

9.50x0.80x0.90 = 6.84m³
9.50x $\frac{.80+.70}{2}$ x 1.60m = 11.40m³
= 18.24m³
@ Rs. 1574/m³ — Rs. 28709.76.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

9.50x2.50x.10m = 2.375m³
9.50x0.75x.75m = 0.605m³
= 2.980m³
@ Rs. 3216/m³ — Rs. 9583.68.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

9.50x2.50m = 23.75m²
@ Rs. 308/m² — Rs. 7315.00.

6/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the

shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top 50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradiation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

9.50x2.00x1.80m = 34.20m³
9.50x½x1.80x2.70m = 23.08m³
= 57.28m³
@ Rs. 275/m³ Rs. 15752.00.

Total Rs. 63,508.99.

Say Rs. 63,500.00.

(Rupees Sixty three thousand five hundred) only.

Submitted

Estimate for construction of Diversion Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 410.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

$5.00 \times 1.20 \times 0.80 = 4.80 m^3$

@ Rs. 201/m^3 — Rs. 964.80.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

$5.00 \times 0.90 \times 0.80m = 3.60 m^3$

$5.00 \times \frac{0.90+0.75}{2} \times 1.15m = 4.743 m^3$

$= 8.343 m^3$

@ Rs. 1574/m^3 — Rs. 13135.03.

Total Rs. 14,509.83.

Say Rs. 14,500.00.

(Rupees Fourteen thousand five hundred) only.

Submitted

Estimate for construction of Diversion Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 410.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

$5.00 \times 1.20 \times 0.80 = 4.80 m^3$

@ Rs. 201/m^3 — Rs. 964.80.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

$5.00 \times 0.90 \times 0.80m = 3.60 m^3$

$5.00 \times \frac{0.90+0.75}{2} \times 1.15m = 4.743 m^3$

$= 8.343 m^3$

@ Rs. 1574/m^3 — Rs. 13135.03.

Total Rs. 14,509.83.

Say Rs. 14,500.00.

(Rupees Fourteen thousand five hundred) only.

Submitted

Estimate for construction of Drinking Well
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S rate	Rs. 200.00.
2/2.2	Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift. a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc. 3.00x1.50x0.50x2 = 4.50m³ 1.50x1.50x0.50x2 = 2.25m³ = 6.75m³ @ Rs. 194/m³	Rs. 1309.50.
3/4.3	Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer) 3.00x1.50x0.40x2 = 3.60m³ 1.50x1.50x0.40x2 = 1.80m³ = 5.40m³ @ Rs. 1574/m³	Rs. 8499.60.
	Total	Rs. 10,009.10.
	Say	Rs. 10,000.00.

(Rupees Ten thousand) only.

Submitted

Estimate for construction of Drinking Well
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S rate	Rs. 200.00.
2/2.2	Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift. a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc. 3.00x1.50x0.50x2 = 4.50m³ 1.50x1.50x0.50x2 = 2.25m³ = 6.75m³ @ Rs. 194/m³	Rs. 1309.50.
3/4.3	Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer) 3.00x1.50x0.40x2 = 3.60m³ 1.50x1.50x0.40x2 = 1.80m³ = 5.40m³ @ Rs. 1574/m³	Rs. 8499.60.
	Total	Rs. 10,009.10.
	Say	Rs. 10,000.00.

(Rupees Ten thousand) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 500.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

4.60x1.20x0.80 = 4.42m³

@ Rs. 201/m³ — Rs. 888.42.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

4.60x0.90x0.80m = 3.312m³

4.60x $\frac{0.90+0.70}{2}$ x0.90m = 3.313m³

= 6.624m³

@ Rs. 1574/m³ — Rs. 10426.17.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed

4.60x1.70x.10x2 = 1.564m³

4.60x0.70x0.10m= 0.322m³

= 1.886m³

@ Rs. 3216/m³ — Rs. 6065.37.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

4.60x1.70x2m = 15.64m²

@ Rs. 308/m² — Rs. 4817.12.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

4.60x1.00x2 = 9.20m²
4.60x0.90m = 4.14m²
= 13.34m²
@ Rs. 137/m² Rs. 1827.58.

Total Rs. 24,524.66.

Say Rs. 24,500.00.

(Rupees Twenty four thousand five hundred) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 500.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

4.60x1.20x0.80 = 4.42m³

@ Rs. 201/m³ — Rs. 888.42.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

4.60x0.90x0.80m = 3.312m³

4.60x $\frac{0.90+0.70}{2}$ x0.90m = 3.313m³

= 6.624m³

@ Rs. 1574/m³ — Rs. 10426.17.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed

4.60x1.70x.10x2 = 1.564m³

4.60x0.70x0.10m= 0.322m³

= 1.886m³

@ Rs. 3216/m³ — Rs. 6065.37.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

4.60x1.70x2m = 15.64m²

@ Rs. 308/m² — Rs. 4817.12.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

4.60x1.00x2 = 9.20m²
4.60x0.90m = 4.14m²
= 13.34m²
@ Rs. 137/m² Rs. 1827.58.

Total Rs. 24,524.66.

Say Rs. 24,500.00.

(Rupees Twenty four thousand five hundred) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 500.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

$4.60 \times 1.20 \times 0.80 = 4.42 m^3$

@ Rs. 201/m^3 — Rs. 888.42.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

$4.60 \times 0.90 \times 0.80m = 3.312 m^3$

$4.60 \times \frac{0.90+0.70}{2} \times 0.90m = 3.313 m^3$

$= 6.624 m^3$

@ Rs. 1574/m^3 — Rs. 10426.17.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed

$4.60 \times 1.70 \times .10 \times 2 = 1.564 m^3$

$4.60 \times 0.70 \times 0.10m = 0.322 m^3$

$= 1.886 m^3$

@ Rs. 3216/m^3 — Rs. 6065.37.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

$4.60 \times 1.70 \times 2m = 15.64 m^2$

@ Rs. 308/m^2 — Rs. 4817.12.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

4.60x1.00x2 = 9.20m²
4.60x0.90m = 4.14m²
= 13.34m²
@ Rs. 137/m² Rs. 1827.58.

Total Rs. 24,524.66.

Say Rs. 24,500.00.

(Rupees Twenty four thousand five hundred) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 550.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

$5.20 \times 1.30 \times 0.80 = 5.40 m^3$

@ Rs. 201/m^3 — Rs. 1085.40.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

$5.20 \times 0.90 \times 1.00m = 4.68 m^3$

$5.20 \times \frac{0.90+0.75}{2} \times 1.00m = 4.29 m^3$

$= 8.97 m^3$

@ Rs. 1574/m^3 — Rs. 14118.78.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$5.20 \times 1.80 \times .10 \times 2 = 1.872 m^3$

$5.20 \times 0.75 \times 0.10m = 0.390 m^3$

$= 2.262 m^3$

@ Rs. 3216/m^3 — Rs. 7274.59.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

$5.20 \times 1.80 \times 2m = 18.72 m^2$

@ Rs. 308/m^2 — Rs. 5765.76.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

5.20x1.10x2 = 11.44m²
5.20x0.95m = 4.94m²
= 16.38m²
@ Rs. 137/m² Rs. 2244.06.

Total Rs. 31,038.59.

Say Rs. 31,000.00.

(Rupees Thirty one thousand) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 550.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

$5.20 \times 1.30 \times 0.80 = 5.40 m^3$

@ Rs. 201/m^3 — Rs. 1085.40.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

$5.20 \times 0.90 \times 1.00m = 4.68 m^3$

$5.20 \times \frac{0.90+0.75}{2} \times 1.00m = 4.29 m^3$

$= 8.97 m^3$

@ Rs. 1574/m^3 — Rs. 14118.78.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$5.20 \times 1.80 \times .10 \times 2 = 1.872 m^3$

$5.20 \times 0.75 \times 0.10m = 0.390 m^3$

$= 2.262 m^3$

@ Rs. 3216/m^3 — Rs. 7274.59.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

$5.20 \times 1.80 \times 2m = 18.72 m^2$

@ Rs. 308/m^2 — Rs. 5765.76.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

5.20x1.10x2 = 11.44m²
5.20x0.95m = 4.94m²
= 16.38m²
@ Rs. 137/m² Rs. 2244.06.

Total Rs. 31,038.59.

Say Rs. 31,000.00.

(Rupees Thirty one thousand) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 550.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

5.20x1.30x0.80 = 5.40m³

@ Rs. 201/m³ — Rs. 1085.40.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

5.20x0.90x1.00m = 4.68m³

5.20x $\frac{0.90+0.75}{2}$ x1.00m = 4.29m³

= 8.97m³

@ Rs. 1574/m³ — Rs. 14118.78.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

5.20x1.80x.10x2 = 1.872m³

5.20x0.75x0.10m = 0.390m³

= 2.262m³

@ Rs. 3216/m³ — Rs. 7274.59.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

5.20x1.80x2m = 18.72m²

@ Rs. 308/m² — Rs. 5765.76.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

5.20x1.10x2 = 11.44m²
5.20x0.95m = 4.94m²
= 16.38m²
@ Rs. 137/m² Rs. 2244.06.

Total Rs. 31,038.59.

Say Rs. 31,000.00.

(Rupees Thirty one thousand) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 550.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

$5.20 \times 1.30 \times 0.80 = 5.40 m^3$

@ Rs. 201/m^3 — Rs. 1085.40.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

$5.20 \times 0.90 \times 1.00m = 4.68 m^3$

$5.20 \times \frac{0.90+0.75}{2} \times 1.00m = 4.29 m^3$

$= 8.97 m^3$

@ Rs. 1574/m^3 — Rs. 14118.78.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$5.20 \times 1.80 \times .10 \times 2 = 1.872 m^3$

$5.20 \times 0.75 \times 0.10m = 0.390 m^3$

$= 2.262 m^3$

@ Rs. 3216/m^3 — Rs. 7274.59.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

$5.20 \times 1.80 \times 2m = 18.72 m^2$

@ Rs. 308/m^2 — Rs. 5765.76.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

5.20x1.10x2 = 11.44m²
5.20x0.95m = 4.94m²
= 16.38m²
@ Rs. 137/m² Rs. 2244.06.

Total Rs. 31,038.59.

Say Rs. 31,000.00.

(Rupees Thirty one thousand) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 550.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

5.20x1.30x0.80 = 5.40m³

@ Rs. 201/m³ — Rs. 1085.40.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

5.20x0.90x1.00m = 4.68m³

5.20x $\frac{0.90+0.75}{2}$ x1.00m = 4.29m³

= 8.97m³

@ Rs. 1574/m³ — Rs. 14118.78.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

5.20x1.80x.10x2 = 1.872m³

5.20x0.75x0.10m = 0.390m³

= 2.262m³

@ Rs. 3216/m³ — Rs. 7274.59.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

5.20x1.80x2m = 18.72m²

@ Rs. 308/m² — Rs. 5765.76.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

5.20x1.10x2 = 11.44m²
5.20x0.95m = 4.94m²
= 16.38m²
@ Rs. 137/m² Rs. 2244.06.

Total Rs. 31,038.59.

Say Rs. 31,000.00.

(Rupees Thirty one thousand) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 200.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

6.70x1.50x1.00 = 10.05m³
1.50x1x0.80x2m = 2.40m³
= 12.45m³

@ Rs. 201/m³ — Rs. 2502.45.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

6.70x1.20x1.00m = 8.040m³
6.70x $\frac{1.20+0.90}{2}$ x1.25m = 8.794m³
1.50x0.90x2.30m = 3.105m³
= 19.939m³

@ Rs. 1574/m³ — Rs. 31383.98.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.70x2.35x.10x2 = 3.149m³
6.70x1.10x0.10 = 0.737m³
1.50x2.30x0.10 = 0.690m³
4.60x1.80x0.10 = 0.828m³
= 5.404m³

@ Rs. 3216/m³ — Rs. 17379.26.

5/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

6.70x2.35x2m = 31.49m²
1.50x2.35x2m = 7.05m²
1.50x1.00x2m = 3.00m²
= 41.54m²

@ Rs. 308/m² — Rs. 12794.32.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

6.70x1.50x2 = 20.10m²
6.70x1.10 = 7.37m²
1.50x1.50x2 = 4.50m²
1.50x0.90x2 = 2.70m²
4.60x1.80 = 8.28m²
= 42.95m²
@ Rs. 137/m² Rs. 5884.15.

Total Rs. 70,144.16.

Say Rs. 70,122.00.

(Rupees Seventy thousand one hundred twenty two) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S Rate	Rs. 410.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

8.60x1.20x0.90m = 9.29m³

@ Rs. 194/m³ Rs. 1802.26.

3/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

c. New stones.

8.60x1.00x0.90m = 7.74m³

$8.60 \times \frac{1.00+0.80}{2} \times 1.20m = 9.29m^3$

= 17.03m³

@ Rs. 1045/m³ Rs. 17796.35.

Total Rs. 20,008.61.

Say Rs. 20,000.00.

(Rupees Twenty thousand) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S Rate	Rs. 410.00.
2/2.2	Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed. a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc. 8.60x1.20x0.90m = 9.29m³ @ Rs. 194/m³	Rs. 1802.26.
3/4.1	Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches. a. New stones. 8.60x1.00x0.90m = 7.74m³ 8.60x $\frac{1.00+0.80}{2}$ x1.20m = 9.29m³ = 17.03m³ @ Rs. 1045/m³	Rs. 17796.35.
	Total	Rs. 20,008.61.
	Say	Rs. 20,000.00.

(Rupees Twenty thousand) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S Rate — Rs. 410.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

8.60x1.20x0.90m = 9.29m³

@ Rs. 194/m³ — Rs. 1802.26.

3/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

a. New stones.

8.60x1.00x0.90m = 7.74m³

$8.60 \times \frac{1.00+0.80}{2} \times 1.20m = 9.29m^3$

= 17.03m³

@ Rs. 1045/m³ — Rs. 17796.35.

Total Rs. 20,008.61.

Say Rs. 20,000.00.

(Rupees Twenty thousand) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S Rate	Rs. 410.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

8.60x1.20x0.90m = 9.29m³

@ Rs. 194/m³ Rs. 1802.26.

3/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

a. New stones.

8.60x1.00x0.90m = 7.74m³

$8.60 \times \frac{1.00+0.80}{2} \times 1.20m = 9.29m^3$

= 17.03m³

@ Rs. 1045/m³ Rs. 17796.35.

Total Rs. 20,008.61.

Say Rs. 20,000.00.

(Rupees Twenty thousand) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S Rate	Rs. 410.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

8.60x1.20x0.90m = 9.29m³

@ Rs. 194/m³ Rs. 1802.26.

3/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

a. New stones.

8.60x1.00x0.90m = 7.74m³

$8.60 \times \frac{1.00+0.80}{2} \times 1.20m = 9.29m^3$

= 17.03m³

@ Rs. 1045/m³ Rs. 17796.35.

Total Rs. 20,008.61.

Say Rs. 20,000.00.

(Rupees Twenty thousand) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S Rate	Rs. 410.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

8.60x1.20x0.90m = 9.29m³

@ Rs. 194/m³ Rs. 1802.26.

3/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

a. New stones.

8.60x1.00x0.90m = 7.74m³

$8.60 \times \frac{1.00+0.80}{2} \times 1.20m = 9.29m^3$

= 17.03m³

@ Rs. 1045/m³ Rs. 17796.35.

Total Rs. 20,008.61.

Say Rs. 20,000.00.

(Rupees Twenty thousand) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S Rate	Rs. 300.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

6.50x1.20x0.90m = 7.02m³

@ Rs. 194/m³ Rs. 1361.88.

3/4.2 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. New stones.

6.50x1.10x0.90m = 6.44m³

$6.50 \times \frac{1.10+0.80}{2} \times 1.10\text{m} = 6.79\text{m}^3$

= 13.23m³

@ Rs. 1479/m³ Rs. 19567.17.

Total Rs. 21,229.05.

Say Rs. 21,214.00.

(Rupees Twenty one thousand two hundred fourteen) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S Rate	Rs. 310.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

6.80x1.20x0.90m = 7.34m³

@ Rs. 194/m³ Rs. 1423.96.

3/4.2 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

d. New stones.

6.80x1.10x0.90m = 6.73m³

$6.80 \times \frac{1.10+0.80}{2} \times 1.10\text{m} = 7.11\text{m}^3$

= 13.84m³

@ Rs. 1479/m³ Rs. 20469.36.

Total Rs. 22,203.32.

Say Rs. 22,200.00.

(Rupees Twenty two thousand two hundred) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S Rate — Rs. 310.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

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3/4.2 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. New stones.

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$6.80 \times \frac{1.10+0.80}{2} \times 1.10\text{m} = 7.11\text{m}^3$

= 13.84m³

@ Rs. 1479/m³ — Rs. 20469.36.

Total Rs. 22,203.32.

Say Rs. 22,200.00.

(Rupees Twenty two thousand two hundred) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S Rate — Rs. 310.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

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3/4.2 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. New stones.

6.80x1.10x0.90m = 6.73m³

$6.80 \times \frac{1.10+0.80}{2} \times 1.10\text{m} = 7.11\text{m}^3$

= 13.84m³

@ Rs. 1479/m³ — Rs. 20469.36.

Total Rs. 22,203.32.

Say Rs. 22,200.00.

(Rupees Twenty two thousand two hundred) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S Rate — Rs. 310.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

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3/4.2 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

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= 13.84m³

@ Rs. 1479/m³ — Rs. 20469.36.

Total Rs. 22,203.32.

Say Rs. 22,200.00.

(Rupees Twenty two thousand two hundred) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S Rate	Rs. 300.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

8.25x1.20x0.90m = 8.91m³

@ Rs. 194/m³ Rs. 1728.54.

3/4.2 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

e. New stones.

8.25x1.10x0.90m = 8.17m³

$8.25 \times \frac{1.10+0.80}{2} \times 1.20m = 9.40m^3$

= 17.57m³

@ Rs. 1479/m³ Rs. 25986.03.

Total Rs. 28,014.37.

Say Rs. 28,000.00.

(Rupees Twenty eight thousand) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S Rate — Rs. 300.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

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3/4.2 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. New stones.

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$8.25 \times \frac{1.10+0.80}{2} \times 1.20m = 9.40m^3$

= 17.57m³

@ Rs. 1479/m³ — Rs. 25986.03.

Total Rs. 28,014.37.

Say Rs. 28,000.00.

(Rupees Twenty eight thousand) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S Rate — Rs. 300.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

8.25x1.20x0.90m = 8.91m³

@ Rs. 194/m³ — Rs. 1728.54.

3/4.2 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. New stones.

8.25x1.10x0.90m = 8.17m³

$8.25 \times \frac{1.10+0.80}{2} \times 1.20m = 9.40m^3$

= 17.57m³

@ Rs. 1479/m³ — Rs. 25986.03.

Total Rs. 28,014.37.

Say Rs. 28,000.00.

(Rupees Twenty eight thousand) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S Rate — Rs. 300.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

8.25x1.20x0.90m = 8.91m³

@ Rs. 194/m³ — Rs. 1728.54.

3/4.2 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. New stones.

8.25x1.10x0.90m = 8.17m³

$8.25 \times \frac{1.10+0.80}{2} \times 1.20\text{m} = 9.40\text{m}^3$

= 17.57m³

@ Rs. 1479/m³ — Rs. 25986.03.

Total Rs. 28,014.37.

Say Rs. 28,000.00.

(Rupees Twenty eight thousand) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1	Site preparation like jungle clearance, etc at L/S Rate	Rs. 300.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

8.25x1.20x0.90m = 8.91m³

@ Rs. 194/m³ Rs. 1728.54.

3/4.2 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

a. New stones.

8.25x1.10x0.90m = 8.17m³

$8.25 \times \frac{1.10+0.80}{2} \times 1.20\text{m} = 9.40\text{m}^3$

= 17.57m³

@ Rs. 1479/m³ Rs. 25986.03.

Total Rs. 28,014.37.

Say Rs. 28,000.00.

(Rupees Twenty eight thousand) only.

Submitted

Estimate for construction of Washing Place
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 270.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

4.80x1.00x0.50 = 2.40m³
4.80x2.40x0.30 = 3.46m³
= 5.86m³
@ Rs. 201/m³ — Rs. 1177.86.

3/4.4 Providing regular coursed stone masonry work only in abutment walls, with hammer dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) and with proper key stones not less than 25cm x 25cm x 75cm long in cement mortar 1:3 including carriage of stone within 200m complete filling in trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height of wall in every 1m should be kept exposed till inspected by the Supervising Officer). The work should be taken up only after obtaining approval from S.E.

4.80x1.00x0.50m = 2.40m³
4.80x1+.60x1.50 = 5.76m³
2
4.80x2.40x0.60m = 6.91m³
= 15.07m³
(-) less 2.40x1.20x0.30 = 0.86m³
= 14.21m³
@ Rs. 1771/m³ — Rs. 25165.91.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

1.80x0.175x0.175x4 = 0.220m³
4.80x0.175x0.175x2 = 0.294m³
= 0.514m³
@ Rs. 3216/m³ — Rs. 1653.02.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

4.80x2.00x2m = 19.20m²
@ Rs. 308/m² — Rs. 5913.60.

6/7.1 Providing 12mm thick cement plastering including clearing surface, curing, and carriage of sand within 200m complete (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

4.80x1.60x2 = 15.36m²
4.80x2.40m = 11.52m²
2.40x0.30x3 = 2.16m²
1.20x0.30x2 = 0.72m²
4.80x0.30 = 1.44m²
1.20x0.175x4x4 = 3.36m²
4.80x0.175x4x2 = 6.72m²
= 41.28m²
@ Rs. 137/m² Rs. 5655.36.

7/6.15 Supplying fitting and fixing including bending, cranking and placing in position as per approved designed drawing, including supplying of tying wire 20 gauge complete as directed.

b. Torsteel @ 0.8% 0f 0.514m³ C.C. work = .35qtls
@ Rs. 5945/qtl Rs. 2080.75.

8/7.7 Painting including supplying of paint of approved quality in all shades with two coats of weather shield (plastic paint) after proper cleaning the surface on cement work and stone masonry work, complete as directed.

4.80x0.175x4x4 = 3.36m²
4.80x0.175x4x2 = 6.72m²
= 10.08m²
@ Rs. 148/m² Rs. 1491.84.

9/10.2 Extra for carriage of earth, sand, stone aggregates, stone chip, building stone, mawthup, blindage etc, beyound the initial lead of 200m including loading and unloading.

ii. On rough roaad other than black-topped roads

A. 1st Km: per Km or part thereof
for 15m³ @ Rs. 159/m³ - Rs. 2385/-
B. In subsequent Km:
i). 0-5 Km @ Rs. 26/m³ - Rs. 1950/-
- Rs. 4335/-

Rs. 4335.00.

10/12.7 Providing 50mm dia G.I. Pipe (ISI Mark) railing including cutting, bending the pipe and sitting fixing with elbow sockets and embedded into RCC Post, stone wall etc where ever necessary with concrete cement in prop 1:2:4 complete as directed.

For 5.00 Rm @ Rs. 490/Rm Rs. 2450.00.

Total Rs. 50,193.34.

Say Rs. 50,188.00.

(Rupees Fifty thousand one hundred eighty eight) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1/2.4 Earth work in excavation for foundation of Hume Pipe culvert, slab drain, retaining wall, face wall upto the desired founding level, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

9.00x1.00x0.40m = 3.60m³
@ Rs. 112/m³ Rs. 403.20.

2/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top 50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

9.00x2.40x1.75m = 37.80m³
9.00x½x1.75x3.50x2m = 55.12m³
= 92.92m³
@ Rs. 275/m³ Rs. 25553.00.

3/3.1 Cutting road side drain including dressing, grading and removal of spoils up to 15.00m completed

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

i). 60cm x 60cm for 18.50 Rm
@ Rs. 57/Rm Rs. 1054.50.

Total Rs. 27,017.70.

Say Rs. 27,010.00.

(Rupees Twenty seven thousand ten) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1/2.4 Earth work in excavation for foundation of Hume Pipe culvert, slab drain, retaining wall, face wall upto the desired founding level, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

9.00x1.00x0.40m = 3.60m³
@ Rs. 112/m³ Rs. 403.20.

2/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top 50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

9.00x2.40x1.75m = 37.80m³
9.00x½x1.75x3.50x2m = 55.12m³
= 92.92m³
@ Rs. 275/m³ Rs. 25553.00.

3/3.1 Cutting road side drain including dressing, grading and removal of spoils up to 15.00m completed

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

i). 60cm x 60cm for 18.50 Rm
@ Rs. 57/Rm Rs. 1054.50.

Total Rs. 27,017.70.

Say Rs. 27,010.00.

(Rupees Twenty seven thousand ten) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 360.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

$12.50 \times 0.60 \times 1.00\text{m} = 7.50\text{m}^3$

@ Rs. 201/m³ — Rs. 1507.50.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$12.50 \times \frac{.25+.20}{2} \times 2.50\text{m} = 7.030\text{m}^3$

@ Rs. 3216/m³ — Rs. 22608.48.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

$12.50 \times 2.50 \times 2\text{m} = 62.50\text{m}^2$

@ Rs. 308/m² — Rs. 19250.00.

5/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top 50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradiation test plasticity proctor test

deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

12.50x3.00x1.80m = 67.50m³
12.50x½x1.80x3.60x2m = 81.00m³
= 148.50m³
Less (-) C.C. = 7.03m³
= 141.47m³
@ Rs. 275/m³ Rs. 38904.25.

6/2.10 Turfing after dressing the slope or bed with good soil available in the vicinity i/c ramming properly the ground and pinning them with small bamboo/wooden pegs and curing the soils within 30m

12.50x3.00m = 37.50m²
12.50x$\sqrt{(1.80)^2+(3.60)^2}$ = 50.00m²
= 87.50m²
@ Rs. 50/m² Rs. 4375.00.

7/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

4.70x1.20x0.30m = 1.692m³
4.70x.50x.40x2m = 1.880m³
= 3.572m³
@ Rs. 1045/m³ Rs. 3732.74.

8/7.1 Providing 12mm thick cement plastering including clearing surface, curing, and carriage of sand within 200m complete (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

4.70x1.20m = 5.64m²
4.70x.50x2 = 4.70m²
= 10.34m²
@ Rs. 137/m² Rs. 1416.58.

Total Rs. 92,154.05.

Say Rs. 92,150.00.

(Rupees Ninety two thousand one hundred fifty) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 360.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

12.50x0.60x1.00m = 7.50m³

@ Rs. 201/m³ — Rs. 1507.50.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$$12.50 \times \frac{.25+.20}{2} \times 2.50\text{m} = 7.030\text{m}^3$$

@ Rs. 3216/m³ — Rs. 22608.48.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

12.50x2.50x2m = 62.50m²

@ Rs. 308/m² — Rs. 19250.00.

5/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top

50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradiation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

12.50x3.00x1.80m = 67.50m³
12.50x½x1.80x3.60x2m = 81.00m³
= 148.50m³
Less (-) C.C. = 7.03m³
= 141.47m³
@ Rs. 275/m³ Rs. 38904.25.

6/2.10 Turfing after dressing the slope or bed with good soil available in the vicinity i/c ramming properly the ground and pinning them with small bamboo/wooden pegs and curing the soils within 30m

12.50x3.00m = 37.50m²
12.50x$\sqrt{(1.80)^2+(3.60)^2}$ = 50.00m²
= 87.50m²
@ Rs. 50/m² Rs. 4375.00.

7/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

4.70x1.20x0.30m = 1.692m³
4.70x.50x.40x2m = 1.880m³
= 3.572m³
@ Rs. 1045/m³ Rs. 3732.74.

8/7.1 Providing 12mm thick cement plastering including clearing surface, curing, and carriage of sand within 200m complete (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

4.70x1.20m = 5.64m²
4.70x.50x2 = 4.70m²
= 10.34m²
@ Rs. 137/m² Rs. 1416.58.

Total Rs. 92,154.05.

Say Rs. 92,150.00.

(Rupees Ninety two thousand one hundred fifty) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 220.00.

2/2.2 Earth work in excavation for foundation of Hume Pipe culvert, slab drain, retaining wall, face wall upto the desired founding level, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

12.50x0.60x1.00m = 7.50m³

@ Rs. 201/m³ — Rs. 1507.50.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$12.50 \times \frac{.25+.20}{2} \times 2.50m = 7.030m^3$

4.70x1.20x0.10m = 0.564m³

4.70x0.50x0.10x2m = 0.470m³

= 8.064m³

@ Rs. 3216/m³ — Rs. 25933.82.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

12.50x2.50x2m = 62.50m²

@ Rs. 308/m² — Rs. 19250.00.

5/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers

will follow after the proper compaction of the previous layer top 50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

12.50x3.00x1.80m = 67.50m³
12.50x½x1.80x3.60x2m = 81.00m³
= 148.50m³
Less (-) C.C. = 7.03m³
@ Rs. 275/m³ Rs. 38904.25.

6/2.10 Turfing after dressing the slope or bed with good soil available in the vicinity i/c ramming properly the ground and pinning them with small bamboo/wooden pegs and curing the soils within 30m

12.50x3.00m = 37.50m²
12.50x$\sqrt{(1.80)^2+(3.60)^2}$ = 50.00m²
= 87.50m²
@ Rs. 50/m² Rs. 4375.00.

7/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

4.70x1.40x0.30m = 1.974m³
4.70x.50x.40x2m = 1.880m³
= 3.854m³
@ Rs. 1045/m³ Rs. 4027.43.

8/7.1 Providing 12mm thick cement plastering including clearing surface, curing, and carriage of sand within 200m complete (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

4.70x1.20m = 5.64m²
4.70x.50x2 = 4.70m²
0.50x.40x4 = 0.80m²
= 11.14m²
@ Rs. 137/m² Rs. 1526.58.

9/4.5 Providing stone pitching with one man size boulders not less than 25cm x 25cm x 30cm long including filling the interstices with spoils and carriage of stone within a distance of 200m complete as directed.

12.50x$\sqrt{1.80^2 \times 3.60^2}$ x 0.30m = 15m³
@ Rs. 559/m³ Rs. 8385.00.

10/3.1 Cutting road side drain including dressing, grading and removal of spoils up to 15.00m complete

i) 60cm x 60m for 120 Rm
@ Rs. 57/Rm Rs. 6840.00.

Total Rs. 1,10,869.58.

Say Rs. 1,10,860.00.

(Rupees One lakh ten thousand eight hundred sixty) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 220.00.

2/2.2 Earth work in excavation for foundation of Hume Pipe culvert, slab drain, retaining wall, face wall upto the desired founding level, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

12.50x0.60x1.00m = 7.50m³

@ Rs. 201/m³ — Rs. 1507.50.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$12.50 \times \frac{.25+.20}{2} \times 2.50m = 7.030m^3$

4.70x1.20x0.10m = 0.564m³

4.70x0.50x0.10x2m = 0.470m³

= 8.064m³

@ Rs. 3216/m³ — Rs. 25933.82.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

12.50x2.50x2m = 62.50m²

@ Rs. 308/m² — Rs. 19250.00.

5/2.8 Earth work in filling in embankment with approved materials obtained from the excavation of road construction or borrow pits or from either sources. The earth shall be moorum, gravels admixture of those as approved by the Engineer in-charge and placing the earth in layers not exceeding 250mm in loose thickness to cover the entire width of the embankment uniformly including finishing operations i/c shaping and dressing the shoulders verge road bed and side slope to confirm to the alignment levels, cross section and dimensions shown in the drawing or as directed by the Engineer in-charge including lead, lift within a lead of 30m and lift 150cm rolling the embankment layers with 8-10 tonnes rollers to run at least 10 passes to attain adequate compactions as recommended in Table 300-I of IRC classification second edition watering etc, including supply of fuel for the roller and higher charge etc, complete. The clods should be broken to 75mm size before placing in the embankment. Subsequent layers will follow after the proper compaction of the previous layer top

50cm of the embankment should be sandy soil. (only profile will measure after compaction of embankment be taken for the purpose of making payment). The gradation test plasticity proctor test deleterious content and moisture content test should be conducted at contractor's own cost for every 8000.00m³ of soil.

12.50x3.00x1.80m = 67.50m³
12.50x½x1.80x3.60x2m = 81.00m³
= 148.50m³
Less (-) C.C. = 7.03m³
@ Rs. 275/m³ Rs. 38904.25.

6/2.10 Turfing after dressing the slope or bed with good soil available in the vicinity i/c ramming properly the ground and pinning them with small bamboo/wooden pegs and curing the soils within 30m

12.50x3.00m = 37.50m²
12.50x$\sqrt{(1.80)^2+(3.60)^2}$ = 50.00m²
= 87.50m²
@ Rs. 50/m² Rs. 4375.00.

7/4.1 Providing regular dry stone masonry wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) with proper key stones each not less than 25cm x 25cm x 75cm long including carriage of stones within 200m and filling trenches.

4.70x1.40x0.30m = 1.974m³
4.70x.50x.40x2m = 1.880m³
= 3.854m³
@ Rs. 1045/m³ Rs. 4027.43.

8/7.1 Providing 12mm thick cement plastering including clearing surface, curing, and carriage of sand within 200m complete (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

4.70x1.20m = 5.64m²
4.70x.50x2 = 4.70m²
0.50x.40x4 = 0.80m²
= 11.14m²
@ Rs. 137/m² Rs. 1526.58.

9/4.5 Providing stone pitching with one man size boulders not less than 25cm x 25cm x 30cm long including filling the interstices with spoils and carriage of stone within a distance of 200m complete as directed.

12.50x$\sqrt{1.80^2 \times 3.60^2}$ x 0.30m = 15m³
@ Rs. 559/m³ Rs. 8385.00.

10/3.1 Cutting road side drain including dressing, grading and removal of spoils up to 15.00m complete

i) 60cm x 60m for 120 Rm
@ Rs. 57/Rm Rs. 6840.00.

Total Rs. 1,10,869.58.

Say Rs. 1,10,860.00.

(Rupees One lakh ten thousand eight hundred sixty) only.

Submitted

Estimate for construction of Diversion Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

$7.80 \times 1.20 \times 0.80 = 7.49 m^3$

@ Rs. 201/m^3 Rs. 1505.49.

2/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

$7.80 \times 0.90 \times 0.80m = 5.62 m^3$

$7.80 \times \frac{0.90+0.80}{2} \times 1.20m = 7.96 m^3$

$= 13.58 m^3$

@ Rs. 1574/m^3 Rs. 21374.92.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

$7.80 \times 2.00 \times 0.10m = 1.56 m^3$

$7.80 \times 0.80 \times 0.10m = 0.62 m^3$

$= 2.18 m^3$

@ Rs. 3216/m^3 Rs. 7010.88.

4/6.12 Providing shuttering shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

$7.80 \times 2.00m = 15.60 m^2$

@ Rs. 308/m^2 Rs. 4804.80.

Total Rs. 34,696.09.
Say Rs. 34,630.00.

(Rupees Thirty four thousand six hundred thirty) only.

Submitted

Estimate for construction of Drinking Well
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequates shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

a. Ordinary soil: - Marshy soil comprising of vegetables or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, soft shale or loose moorum, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

3.20x1.50x0.50x2 = 4.80m³
2.20x1.50x0.50x2 = 3.30m³
= 8.10m³
@ Rs. 194/m³ Rs. 1571.40.

2/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

1.00x3.25x3.50x0.10m = 1.137m³
@ Rs. 3216/m³ Rs. 3656.59.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

2.00x1.20x0.40x4 = 3.84m³
@ Rs. 1574/m³ Rs. 6044.16.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

3.00x3.00m = 9.00m²
@ Rs. 308/m² Rs. 2772.00.

5/12.15 Providing hollow cement concrete block wall in proportion 1:1:8 (1cement, 1hydraulic lime, 8sand) complete laid in cement mortar 1:6 (1cement, 6sand) complete as directed, including curing three times a day for 10 (ten) days.

3.00x1.20x2.00m = 7.20m²
a. Thickness @ Rs. 263/m² Rs. 1893.60.

6/7.1 Providing 12mm thick cement plastering including clearing surface, curing, and carriage of sand within 200m complete (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

b. Proportion 1:3

3.00x2.00x1.20x2 = 14.40m²

2.00x3.25x3.50 = 22.75m²

= 37.15m²

@ Rs. 137/m² Rs. 5089.55.

7/6.15 Supplying fitting and fixing including bending, cranking and placing in position as per approved designed drawing, including supplying of tying wire 20 gauge complete as directed.

b. Torsteel @ 0.8% 0f 1.137cm² C.C. work = .72qtls

@ Rs. 5945/qtl Rs. 4280.40.

Total Rs. 25,307.65.

Say Rs. 25,000.00.

(Rupees Twenty five thousand) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 900.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabalized soil mixed with gravels or small boulders.

6.00x1.30x1.00 = 7.80m³
@ Rs. 201/m³ — Rs. 1567.80.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

6.00x0.90x1.00m = 5.40m³
6.00x $\frac{0.90+0.75}{2}$ x1.20m = 5.94m³
= 11.34m³
@ Rs. 1574/m³ — Rs. 17849.16.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.00x2.10x.10x2m = 2.52m³
6.00x0.75x0.10m = 0.45m³
= 2.97m³
@ Rs. 3216/m³ — Rs. 9551.52.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

6.00x2.20x2m = 26.40m²
@ Rs. 308/m² — Rs. 8131.20.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

6.00x1.30x2 = 15.60m²
6.00x0.95m = 5.70m²
= 21.30m²

Prop 1:3; @ Rs. 137/m² Rs. 2918.10.

Total Rs. 40,917.78.

Say Rs. 40,917.00.

(Rupees Forty thousand nine hundred seventeen) only.

Submitted

Estimate for construction of Head Water Dam
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S rate — Rs. 950.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert up to the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed

b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

6.70x1.50x1.00 = 10.05m³
1.50x1x0.80x2m = 2.40m³
= 12.45m³

@ Rs. 201/m³ — Rs. 2502.45.

3/4.3 Providing regular dry stone masonry in returning wall and wing wall with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long in cement mortar 1:6 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)

6.70x1.20x1.00m = 8.040m³
6.70x $\frac{1.20+0.90}{2}$ x1.25m = 8.794m³
1.50x0.90x2.30m = 3.105m³
= 19.939m³

@ Rs. 1574/m³ — Rs. 31383.98.

4/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.70x2.35x.10x2 = 3.149m³
6.70x1.10x0.10 = 0.739m³
1.50x2.30x0.10 = 0.690m³
4.70x1.80x0.10 = 0.846m³
= 5.424m³

@ Rs. 3216/m³ — Rs. 17443.58.

5/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

6.70x2.35x2m = 31.49m²
1.50x2.35x2m = 7.05m²
1.50x1.00x2m = 3.00m²
= 41.54m²
@ Rs. 308/m² Rs. 12794.32.

6/7.1 Providing 12mm thick cement plastering including cleaning surface, curing, carriage of sand within 200m complete. (No plastering is to be done in abutment, well piers, retaining walls and wing walls).

6.70x1.50x2 = 20.10m²
6.70x1.10 = 7.37m²
1.50x1.50x2 = 4.50m²
1.50x0.90x2 = 2.70m²
4.60x1.80 = 8.28m²
1.50x1.00x2 = 3.00m²
= 45.95m²
@ Rs. 137/m² Rs. 6295.15.

Total Rs. 71,369.48.

Say Rs. 71,365.00.

(Rupees Seventy one thousand three hundred sixty five) only.

Submitted

Estimate for construction of Retaining Wall/Protection Wall
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1 Site preparation like jungle clearance, etc at L/S Rate — Rs. 310.00.

2/2.2 Earth work in excavation for foundation of bridges and culvert upto the founding level including making of coffer dam, dewatering and bailing out and diverting of water, in order to keep the foundation trenches free of water and protecting the side of foundation by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely as directed by E.E. in charge including removal of spoils within a lead of 30m and all lift complete as directed.

a. Hard soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.

7.00x1.20x0.90m = 7.56m³

@ Rs. 201/m³ — Rs. 1519.56.

3/4.4 Providing regular dry stone masonry in abutment wall, with hammer dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) and with proper key stones not less than 25cm x25cm x 75cm long in cement mortar 1:3 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer). The work should be taken up only after obtaining approval from S.E.

a. New stones.

7.00x1.10x0.90m = 6.93m³

$7.00 \times \frac{1.10+0.90}{2} \times 1.10\text{m} = 7.70\text{m}^3$

= 14.63m³

@ Rs. 1574/m³ — Rs. 23027.62.

Total Rs. 24,857.18.

Say Rs. 24,853.00.

(Rupees Twenty four thousand eight hundred fifty three) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1/2.2 Earth work in excavation for foundation of Hume Pipe culvert, slab drain, retaining wall, face wall up to the desired founding level, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequate shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil up to 30m lead and all lift.

9.40x0.90x1.00m = 8.46m³

@ Rs. 201/m³ Rs. 1700.46.

2/4.3 Providing regular dry stone masonry in abutment wall, with hammer dressed stones of heavy section (size not less than 25cm x 25cm x 30cm long) and with proper key stones not less than 25cm x25cm x 75cm long in cement mortar 1:3 including carriage of stones within 200m and filling trenches and providing weep holes 1.2 to 1.5m a part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer). The work should be taken up only after obtaining approval from S.E.

9.40x0.80x0.90m = 6.768m³

9.40x $\frac{.80+.70}{2}$ x 1.60m = 11.280m³

= 18.048m³

@ Rs. 1574/m³ Rs. 28407.55.

3/6.1 Providing cement concrete work in prop 1:3:6 (M_{100}) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

9.40x2.50x0.10m = 2.35m³

9.40x0.75x0.10m = 0.70m³

= 3.05m³

@ Rs. 3216/m³ Rs. 9808.80.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

9.40x2.40m = 22.56m²

@ Rs. 308/m² Rs. 6948.48.

6/2.10 Turfing after dressing the slope or bed with good soil available in the vicinity i/c ramming properly the ground and pinning them with small bamboo/wooden pegs and curing the soils within 30m

9.40x2.00x1.80m = 33.84m³
9.40x½x1.80x2.70 = 22.84m³
= 56.68m³
@ Rs. 275/m³ Rs. 15587.00.

Total Rs. 62,452.29.

Say Rs. 62,353.00.

(Rupees Sixty two thousand three hundred fifty three) only.

Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

1/2.2 Earth work in excavation for foundation of Hume Pipe culvert, slab drain, retaining wall, face wall up to the desired founding level, including dewatering and bailing out of water in order to keep the foundation dry, protecting the sides of foundation by adequate shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil up to 30m lead and all lift.

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9.40x0.75x0.10m = 0.70m³

= 3.05m³

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4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

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= 56.68m³
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Submitted

Estimate for construction of Water Harvesting Farm Structure
at Umnei-Umsohphie IWMP-IX
(As per PWD {Rd} scheduled of rate 2010-11).

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$9.40 \times \frac{.80+.70}{2} \times 1.60\text{m} = 11.280\text{m}^3$

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@ Rs. 3216/m³ Rs. 9808.80.

4/6.12 Providing shuttering in PCC/RCC/Bridge. Works with dressed planks not less than 2mm thick properly jointed, including battens, props to the proper level and removing the same after the concrete hardened complete and as directed by the E.E in-charged.

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= 56.68m³
@ Rs. 275/m³ Rs. 15587.00.

Total Rs. 62,452.29.

Say Rs. 62,353.00.

(Rupees Sixty two thousand three hundred fifty three) only.

Submitted

ANEXTURE III

MoA

Villages Sub Committee Members, etc.