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 : Mawshyrut Block
4. Numbers of Villages : 9 (Nine) Numbers
5. Name of Villages :
   a. Thangtnaw.
   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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<th>Page Range</th>
<th>Section Title</th>
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</tr>
</tbody>
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CHAPTER - 1
INTRODUCTION AND BACKGROUND

1.1 Project Background: -
Umnei-Umsohphie (IWMP-IX) Project 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. Nongrynnia.
5. Porsohsan.
7. Porkrong.
8. Mawstieh.

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.
5. Porsohsan.
7. Porkrong.
8. Mawstieh.

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

<table>
<thead>
<tr>
<th>Elevation (metres)</th>
<th>Slope Range (%)</th>
<th>Order of watershed Sub/Micro-watershed</th>
<th>Major streams</th>
<th>Topography</th>
</tr>
</thead>
<tbody>
<tr>
<td>626 - 880</td>
<td>6% to 63%</td>
<td>1st to 4th order</td>
<td>Umnei Umsohpie</td>
<td>Gentle slope to very deep slope</td>
</tr>
</tbody>
</table>
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:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of States</th>
<th>Name of District</th>
<th>Name of Projects</th>
<th>Cause</th>
<th>Types of erosion</th>
<th>Area affected (Ha)</th>
<th>Run-off (mm/year)</th>
<th>Average soil loss (Tonnes/ha/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Meghalaya</td>
<td>West Khasi Hills</td>
<td>WKH-IWMP IX</td>
<td>Water</td>
<td>Erosion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(a)</td>
<td>Sheet</td>
<td>1721</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b)</td>
<td>Rill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(c)</td>
<td>Gully</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sub Total</td>
<td>Wind Erosion</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of State</th>
<th>Name of the Agro-climatic Zone</th>
<th>Area (in Ha)</th>
<th>Name of the Districts</th>
<th>Name of the Projects</th>
<th>Major soil types</th>
<th>Average rainfall in mm (proceeding 5 years average)</th>
<th>Major crops</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Meghalaya</td>
<td>Mild, Moderate</td>
<td>1721</td>
<td>West Khasi Hills</td>
<td>WKH-IWMP IX</td>
<td>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.</td>
<td>1721</td>
<td>3136.06 mm</td>
</tr>
</tbody>
</table>

Maize. | 10 |
Ginger. | 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>
<thead>
<tr>
<th>Crops</th>
<th>Area (Ha)</th>
<th>Average Yield (Qtl/Ha)</th>
<th>Total Production (Qtl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy</td>
<td>28</td>
<td>17.00 – 19.67</td>
<td>550</td>
</tr>
<tr>
<td>Maize</td>
<td>10</td>
<td>8.6</td>
<td>860</td>
</tr>
<tr>
<td>Ginger</td>
<td>20</td>
<td>75.00 – 87.34</td>
<td>1740</td>
</tr>
</tbody>
</table>

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 unanswerable. 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:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Village</th>
<th>No. of household</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Thangtngaw</td>
<td>47</td>
<td>118</td>
<td>128</td>
<td>246</td>
</tr>
<tr>
<td>2.</td>
<td>Nongrynniaw</td>
<td>57</td>
<td>175</td>
<td>187</td>
<td>362</td>
</tr>
<tr>
<td>3.</td>
<td>Mawngap</td>
<td>17</td>
<td>53</td>
<td>47</td>
<td>100</td>
</tr>
<tr>
<td>Name of District</td>
<td>Name of Project</td>
<td>Parameters</td>
<td>Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Khasi Hills</td>
<td>WKH-IWMP IX</td>
<td>1. Nos. of villages connected to the main road by all weather road</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. No. of village provided with electricity.</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. No. of households with access drinking water.</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. No. of educational institution, Primary(P) Secondary(S) Higher Secondary(HS) Vocational Institute(VI)</td>
<td>9(P), 1(UP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. No. of village with access to PHC</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. No. of village with access veterinary Department.</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. No. of village with access Bank.</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. No. of village with access marketing/mendis.</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. No. of village with access Agro Industries.</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. No. of village with access to Aganwadi.</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. No. of village with access Post Office</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2.5: Infrastructure in the project areas:

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

<table>
<thead>
<tr>
<th>Type of Animal</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piggery</td>
<td>151</td>
</tr>
<tr>
<td>Poultry</td>
<td>1743</td>
</tr>
<tr>
<td>Cattle</td>
<td>529</td>
</tr>
<tr>
<td>Total</td>
<td>2423</td>
</tr>
</tbody>
</table>

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 aorestation, 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:

<table>
<thead>
<tr>
<th>Name of District</th>
<th>Name of Project</th>
<th>Types of Farmer</th>
<th>No. of households</th>
<th>No. of BPL households</th>
<th>Irrigated</th>
<th>Rainfed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Khasi Hills</td>
<td>WKH-IWMP IX</td>
<td>1. Large.</td>
<td>76</td>
<td>N/A</td>
<td>Nil</td>
<td>1721</td>
<td>1721</td>
</tr>
<tr>
<td>Name of District</td>
<td>Name of Project</td>
<td>CPR Particulars</td>
<td>Total Area (Ha) 1721</td>
<td>Area available for treatment (Ha) 1500</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>West Khasi Hills</td>
<td>WKH-IWMP IX</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Pvt. Person</td>
<td>Govt. (specify Deptt.)</td>
<td>PRI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Wasteland degraded land.</td>
<td>184</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Pasture.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>3. Ordind.</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>4. Village woodlot.</td>
<td>1413</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Forest degraded.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>7. Community</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Weekly market.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Permanent market.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. Temple(place worship)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. Any others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13
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.
7. Low marketing facility.
8. Inadequate primary infrastructure.
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 overcome them in future.
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 used. 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:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total no. of Project sanctioned</td>
<td>Scientific criteria/input used</td>
<td>No. of Project in which Scientific criteria were used</td>
</tr>
<tr>
<td>A. Planning:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster Approach -</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Whether technical back – stopping for the Project has been arranged?</td>
<td>Yes</td>
<td>-</td>
</tr>
<tr>
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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.

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<tr>
<td></td>
<td></td>
<td>(iv) Telephone 036954280336</td>
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<td>(v) Fax 036954280336</td>
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<tr>
<td></td>
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<td>(vi) E-mail</td>
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1.3 Institution Building
i) Watershed Committee (WC)
The Watershed Committee of the Umnei-Umsophie 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):

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<th>Name of Project</th>
<th>Name of W/C</th>
<th>Designation</th>
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<th>SC</th>
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<th>MF</th>
<th>LF</th>
<th>Land less</th>
<th>U G</th>
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# 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:

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<td>Name of District</td>
<td>Name of Project</td>
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<td>No. of members</td>
<td>No. of SC/ST in each category</td>
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<td>IWMP IX</td>
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(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:

<table>
<thead>
<tr>
<th>1</th>
<th>Name of District</th>
<th>2</th>
<th>Name of Project</th>
<th>3</th>
<th>Total no. of UGs</th>
<th>4</th>
<th>No. of Members</th>
<th>5</th>
<th>No. of SC/ST in each category</th>
<th>6</th>
<th>No. of BPL in each category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M</td>
<td>Women</td>
<td>Both</td>
<td>Total</td>
<td>Categories</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>West Khasi Hills</td>
<td></td>
<td>IWMP IX</td>
<td></td>
<td>572</td>
<td>286</td>
<td>858</td>
<td>858</td>
<td></td>
<td>572</td>
<td>286</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>572</td>
<td>286</td>
<td>858</td>
<td>858</td>
<td></td>
<td>572</td>
<td>286</td>
</tr>
</tbody>
</table>

( 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.
### 4.1 Preparatory Phase:

#### i) Entry Point Activities (EPA)

<table>
<thead>
<tr>
<th>Names of Project</th>
<th>Amount earmarked for EPA</th>
<th>Entry Point Activities planned</th>
<th>Geographical Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>9.00</td>
<td>IEC (HUB) – 2 nos.</td>
<td>91°-02’30” to 91°-06’00” East Longitude</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drinking Well – 2 nos.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foothbridge – 4 nos.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Washing Platform – 1 no.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchase of chairs and tables – 9 nos.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25°-42’-00” to 25°-46’00” North Longitude</td>
</tr>
</tbody>
</table>

#### ii) Other activities of Preparatory Phase:

<table>
<thead>
<tr>
<th>Initiation of village level institution</th>
<th>Capacity Building</th>
<th>IEC activities</th>
<th>Baseline survey</th>
<th>Hydrological survey</th>
<th>Identifying technical support agencies</th>
<th>Resource agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 No. Watershed Committee</td>
<td>3 nos.</td>
<td>2 nos.</td>
<td></td>
<td></td>
<td></td>
<td>Done</td>
</tr>
<tr>
<td>9 Nos. Sub Watershed Committee</td>
<td></td>
<td></td>
<td>Participatory Rural Appraisals</td>
<td>N.A</td>
<td></td>
<td>Done</td>
</tr>
</tbody>
</table>
### 4.2 Watershed Works Phase:

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

<table>
<thead>
<tr>
<th>Name of Project</th>
<th>Type of structure</th>
<th>Pre Project</th>
<th>Augmentation/repair of existing structures</th>
<th>Proposed Project</th>
<th>Construction of new structures</th>
<th>Total target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>Area irrigated (ha)</td>
<td>Storage capacity</td>
<td>Area irrigated (ha)</td>
<td>Storage capacity</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>1. Tank</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2. Pond</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>3. Lake</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>4. Check Dam</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>5. Protection Wall</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>6. Diversion Channel</td>
<td>10</td>
<td>-</td>
<td>2500</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>7. Any others (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Protection Wall</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Water Harvesting Structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>103 nos. 1619.54 Rmt</td>
<td>16930m³</td>
<td>1619.54 Rmt</td>
<td>16930m³</td>
</tr>
</tbody>
</table>
4.2.2 Activities related to recharging ground water resources in the project areas:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Type of structure</th>
<th>Pre Project</th>
<th>Proposed target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>Area irrigated (ha)</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>1. Open wells</td>
<td>7 m</td>
<td>1.55</td>
</tr>
<tr>
<td></td>
<td>2. Bore wells</td>
<td></td>
<td>3. Any others (please specify)</td>
</tr>
<tr>
<td></td>
<td>i). Dug out pond</td>
<td></td>
<td>ii. Water Harvesting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>74</td>
<td>35.6</td>
</tr>
</tbody>
</table>

4.2.3 Activities executed by User Groups in the project areas:

These groups shall be homogeneous 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:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Ridge area treatment</th>
<th>Drainage line treatment</th>
<th>Nursery raising</th>
<th>Land development</th>
<th>Crop demonstration</th>
<th>Pasture development</th>
<th>Veterinary service</th>
<th>Fishery development</th>
<th>Non-conventional energy</th>
<th>Any other (pl. specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>193 ha</td>
<td>19.594</td>
<td>88 nos.</td>
<td>34.70392</td>
<td>300 ha</td>
<td>25.80</td>
<td>50 ha</td>
<td>2.15</td>
<td>86 units</td>
<td>-</td>
</tr>
</tbody>
</table>

### 4.2.6 Details of engineering structures in watershed works:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Name of structure</th>
<th>Type of treatment</th>
<th>Type of land</th>
<th>No. of units (Pl. specify)</th>
<th>Estimated cost (in lakh)</th>
<th>Expected month &amp; year of completion (mm/yyyy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Staggered trenching</td>
<td>Ridge area (R)</td>
<td>Private</td>
<td>88 nos.</td>
<td>34.70392</td>
<td>2015-16</td>
</tr>
<tr>
<td></td>
<td>Loose boulder Contour bund</td>
<td>Drainage line (D)</td>
<td>Community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Graded bunding</td>
<td>Land Dev. (L)</td>
<td>Others (Pl. specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Protection wall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Earthen check dam</td>
<td>D</td>
<td>P</td>
<td>88 nos.</td>
<td>34.70392</td>
<td>2015-16</td>
</tr>
<tr>
<td></td>
<td>Masonary stop dam</td>
<td>L</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gully plug</td>
<td>P</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gabion structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Underground dykes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fields bund</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any others (Pl. specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Check dam</td>
<td>R</td>
<td>P</td>
<td>30 nos.</td>
<td>11.57124</td>
<td>2015-16</td>
</tr>
</tbody>
</table>
### 4.2.7 Details of activities connected with vegetative cover in watershed works:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Name of structure/work</th>
<th>Type of treatment</th>
<th>Type of land</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ridge area (R)</td>
<td>Drainage line (D)</td>
<td>Land Dev. (L)</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td></td>
<td>194</td>
<td>19.594</td>
<td>2015-16</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Afforestation</td>
<td>194</td>
<td>19.594</td>
<td>2015-16</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Regeneration</td>
<td>88</td>
<td>3.75408</td>
<td></td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Agro-forestry</td>
<td>88</td>
<td>3.75408</td>
<td></td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Fuel wood</td>
<td>300</td>
<td>25.80</td>
<td></td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Fodder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Agro-Horticulture</td>
<td>300</td>
<td>25.80</td>
<td></td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Pasture development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Nursery raising</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Others (Coffee)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# 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:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Name of activities</th>
<th>Type of land</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Private</td>
<td>Community</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Carpentry</td>
<td>10 units</td>
<td>0.80</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Apiculture</td>
<td>42 units</td>
<td>21 units</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Poultry</td>
<td>21 units</td>
<td>21 units</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Compost pit</td>
<td>159 units</td>
<td>159 units</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Kitchen gardening</td>
<td>4.00</td>
<td>4.00</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Agricultural implements</td>
<td>1.06</td>
<td>1.06</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Betel nut processing</td>
<td>55 units</td>
<td>10.75</td>
</tr>
</tbody>
</table>

### 27
### 4.3 Consolidation and withdrawal phase:

Details of activities in the CPRs in the project areas:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Name (s) of village</th>
<th>CPR particular</th>
<th>Activity proposed</th>
<th>Target</th>
<th>Estimated expenditure (Rs.)</th>
<th>Expected no. of beneficiaries</th>
<th>Estimated contribution to WDF (Rs.)</th>
</tr>
</thead>
</table>
## Chapter V

**Project Phasing & Budgeting**

**Watershed Treatment Plan of Umnei-UMsohpie & 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:** Mawsynrout  
**Area Proposed for Treatment:** 2500 Ha  
**NOS. of Village:** 11 Nos.  
**(Physical in Ha/Nos./Rm/Unit) (Rs. In lakhs)**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Activities</th>
<th>Total</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
<th>4th Year</th>
<th>5th Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Physical</td>
<td>Fin</td>
<td>Physical</td>
<td>Fin</td>
<td>Physical</td>
<td>Fin</td>
</tr>
<tr>
<td>I</td>
<td>Administrative Cost</td>
<td>10%</td>
<td>37.50</td>
<td>2%</td>
<td>7.50</td>
<td>5%</td>
<td>18.75</td>
</tr>
<tr>
<td>II</td>
<td>Monitoring &amp; Evaluation</td>
<td>2%</td>
<td>7.50</td>
<td>0.5%</td>
<td>1.875</td>
<td>1%</td>
<td>3.75</td>
</tr>
<tr>
<td></td>
<td>Sub Total (I+II)</td>
<td>12%</td>
<td>45.00</td>
<td>2.5%</td>
<td>9.375</td>
<td>6%</td>
<td>22.50</td>
</tr>
<tr>
<td>III</td>
<td>Preparatory Phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EPA</td>
<td>4%</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i. Drinking Well/Spring tapped chamber</td>
<td>7</td>
<td>3.404</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii. Washing Place</td>
<td>4</td>
<td>4.539</td>
<td>96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii. Footbridge</td>
<td>5</td>
<td>4%</td>
<td>3.195</td>
<td>73</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iv. IEC (HUB)</td>
<td>2</td>
<td>3.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>v. Purchase of chair &amp; table</td>
<td>200</td>
<td>0.42</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DPR</td>
<td>1%</td>
<td>3.75</td>
<td>1%</td>
<td>3.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Institutional &amp; Capacity Building</td>
<td>5%</td>
<td>18.75</td>
<td>1%</td>
<td>3.75</td>
<td>2%</td>
<td>7.50</td>
</tr>
<tr>
<td></td>
<td>Sub Total of III</td>
<td>10%</td>
<td>37.50</td>
<td>218</td>
<td>6%</td>
<td>22.50</td>
<td>2%</td>
</tr>
<tr>
<td>IV</td>
<td>Work Phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Arable Land Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vegetative Barriers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contours Bunds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Graded Bunds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

29
<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>Description</th>
<th>Base 1</th>
<th>Base 2</th>
<th>Base 3</th>
<th>Base 4</th>
<th>Base 5</th>
<th>Base 6</th>
<th>Base 7</th>
<th>Base 8</th>
<th>Base 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loose Boulder Contour Bund</td>
<td></td>
<td></td>
<td>136</td>
<td>10.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.80</td>
</tr>
<tr>
<td>Bench Terracing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wet Terrace</td>
<td></td>
<td></td>
<td>20</td>
<td>1.50</td>
<td>4</td>
<td>1.875</td>
<td>19</td>
<td>975</td>
<td>8</td>
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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-Umsohpie Watershed IWMP-IX (Physical in %) (Rs. In lakhs)

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Divisional Officer
Cum
Project Leader
Project Implementation Agency (IWMP)
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)*

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**Livelihood**

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**Sub Total of C**

- **Tailoring**: 32.215
- **Carpentry/Blacksmithy**: 22.22
- **Agriculture implements**: 5.25
- **Vegetables production/Kitchen Gardening**: 636.40
- **Apiculture**: 8.00
- **Masonry hollow block making**: 27.525
- **Piggery**: 99.47
- **Poultry**: 99.47
- **Vermin-composing**: 27.525
- **Composting (Duckery)**: 168.28
- **Weaving**: 1.92

**Sub Total of C**: 84.727
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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 PROJECT-IX

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<td>Composting (Duckery)</td>
<td>Weaving</td>
<td>Stabilized Mud Block Making</td>
<td>Grocery Shop/Food Stalls</td>
<td>Promotion of Indigenous Medicinal Practitioner</td>
<td>Pisciculture</td>
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</table>

Sub Total of D  **39**  2.538  2.7675  0.918  1.377  2.5245  2.70  2.3085  2.43  55  2.6865

<table>
<thead>
<tr>
<th>Poultry/Piggery</th>
<th>Poultry Farming</th>
<th>Piggery Farming</th>
<th>Food Processing</th>
<th>Floriculture</th>
<th>Pisciculture (including supply of fingerlings)</th>
<th>Betel Nut Soaking tank</th>
<th>Canes &amp; Handicrafts</th>
<th>Rural godown/Cold storage</th>
<th>Cableway taxing</th>
<th>Apiculture/Bee keeping</th>
<th>Grocery shop</th>
<th>Vermin composting</th>
<th>Milk cow rearing</th>
<th>Saloon/Beauty parlor</th>
<th>Mushroom cultivation</th>
<th>Goat rearing</th>
<th>Weaving &amp; Handloom</th>
<th>Stabilized Mud Block Making</th>
<th>Carpenter/Black smithy</th>
<th>Duckery</th>
<th>Sericulture</th>
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<td>0.8415</td>
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<td>1.791</td>
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42
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<th>Value 3</th>
<th>Value 4</th>
<th>Value 5</th>
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<td>Rice mill operation</td>
<td>1</td>
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<td>1</td>
<td>0.9225</td>
<td>1</td>
<td>0.7695</td>
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<td>Improved fuel making (fire cakes, etc)</td>
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<td>1.02</td>
<td>1.53</td>
<td>2.805</td>
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<td>2.565</td>
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<td>V Consolidation Phase</td>
<td>3%</td>
<td>0.846</td>
<td>3%</td>
<td>0.9225</td>
<td>3%</td>
<td>0.306</td>
<td>3%</td>
</tr>
<tr>
<td>Sub Total of V</td>
<td>3%</td>
<td>0.846</td>
<td>3%</td>
<td>0.9225</td>
<td>3%</td>
<td>0.306</td>
<td>3%</td>
</tr>
</tbody>
</table>

| WDT Members                                      |         |         |         |         |         |         |         |
| Community Organisation                           |         |         |         |         |         |         |         |
| WTD Member                                      |         |         |         |         |         |         |         |
| Forestry                                         |         |         |         |         |         |         |         |
| WDT Members                                     |         |         |         |         |         |         |         |
| (Civil Engineer)                                 |         |         |         |         |         |         |         |
| WDT Members                                     |         |         |         |         |         |         |         |
| Agriculture                                      |         |         |         |         |         |         |         |
| Project Leader                                   |         |         |         |         |         |         |         |
| Umnei-Umsohpie Watershed Committee IWMP IX       |         |         |         |         |         |         |         |
Details of the type of areas covered under the IWMP Programme:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Year of sanction</th>
<th>Project Duration (dd/mm/yyyy)</th>
<th>Area of the project to be treated (Treatable area)</th>
<th>Project cost (in lakh)</th>
<th>Name of Micro Watershed &amp; code nos. (as per DoLR’s unique codification)</th>
<th>Treatable Area (As per LULC)</th>
<th>Area details (Ha) falling within the projects (As per ownership)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From</td>
<td>To</td>
<td>From</td>
<td>To</td>
<td>Cultivated rainfed area</td>
<td>Cultivated irrigated area</td>
<td>Uncultivated wasteland</td>
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<tr>
<td>W.K.H. IWMP-IX</td>
<td>2011-12</td>
<td>2011-12</td>
<td>2015-16</td>
<td>1500 Ha</td>
<td>225.00</td>
<td>Umnei-Umsohpie</td>
<td>50 Ha</td>
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Fund provision for the IWMP projects from all sources:

<table>
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<th>Name of project</th>
<th>IWMP Fund</th>
<th>Funds from other sources in addition to IWMP funds</th>
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<tr>
<td></td>
<td>Convergence funds</td>
<td>PPP</td>
</tr>
<tr>
<td></td>
<td>Central share</td>
<td>State share</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>205.50 lakhs</td>
<td>22.50 lakhs</td>
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</table>
### Details of Project Fund Accounts of District Agency and Watershed Committee:

<table>
<thead>
<tr>
<th>Name of projects</th>
<th>District Agency’s Project Account details</th>
<th>Watershed Committee (WC) Account details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the Bank &amp; Branch where project account has been opened</td>
<td>Account Number (to be obtained confidentially)</td>
<td>Name and Designation of authorized persons who operate the account</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>State Bank of India Nongstoin</td>
<td>Saving</td>
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</table>

### Details of Convergence of IWMP with other schemes:

<table>
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<th>Sl. No.</th>
<th>District</th>
<th>Name of project</th>
<th>Name of Departments with schemes converging with IWMP</th>
<th>Available to IWMP due to convergence (in lakh)</th>
<th>Name of activity/task/structure undertaken with converged funds</th>
<th>Reference No. of activity/task/structure in DPR*</th>
<th>Level at which decision for convergence was taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>West Khasi Hills District</td>
<td>W.K.H. IWMP-IX</td>
<td>Community Rural Development Department NREGS</td>
<td>21.32668</td>
<td>1. Dug out pond 49 nos.</td>
<td>As per convergence Action Plan</td>
<td>Block Level and District Level</td>
</tr>
</tbody>
</table>

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

<table>
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<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Construction of small dug out pond</td>
<td>17 nos.</td>
<td>7.399</td>
<td>-</td>
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<tr>
<td></td>
<td>-do-</td>
<td>16 nos.</td>
<td>-</td>
<td>6.96384</td>
<td>-</td>
<td>6.96384</td>
</tr>
<tr>
<td></td>
<td>-do-</td>
<td>16 nos.</td>
<td>-</td>
<td>-</td>
<td>6.96384</td>
<td>6.96384</td>
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<tr>
<td></td>
<td></td>
<td>49 nos.</td>
<td>7.399</td>
<td>6.96384</td>
<td>6.96384</td>
<td>21.32668</td>
</tr>
</tbody>
</table>

(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 stakeholders 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:

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

*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).
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).

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<th>3</th>
<th>4</th>
<th>5</th>
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<td>Project</td>
<td>Type of Training / Capacity Building</td>
<td>Agency / Institution to provide training</td>
<td>No. of trainings targeted during each financial year</td>
<td>Total</td>
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<tr>
<td></td>
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<td>1st Year</td>
<td>2nd Year</td>
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<tr>
<td>WDTs</td>
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</tr>
<tr>
<td>UGs</td>
<td>Entrepreneurship Maintenance of assets</td>
<td>P.I.A. &amp; R.R.T.C.</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>SHGs</td>
<td>Entrepreneurship Maintenance of books</td>
<td>R.R.T.C.</td>
<td>30</td>
<td>75</td>
</tr>
<tr>
<td>WCs</td>
<td>Capacity Building</td>
<td>P.I.A.</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>GPs</td>
<td>Community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (Pl. specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 6.3: Information, Education & Communication (IEC) activities for the year 2011-12 as on 31/11/2011 (dd/mm/yyyy)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Activity</th>
<th>Executing Agency</th>
<th>Estimated expenditure (Rs. )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Awareness</td>
<td>S&amp;W Division</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PRA Exercises</td>
<td>S&amp;W Division</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Capacity Building</td>
<td>S&amp;W Division</td>
<td>2.25</td>
</tr>
<tr>
<td></td>
<td>Preparation of pamphlets, booklets, banners, posters</td>
<td>S&amp;W Division</td>
<td></td>
</tr>
</tbody>
</table>
## Chapter VII

### Expected Outcome

Table 7.1: Employment related outcomes:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of villages</th>
<th>Wage employment</th>
<th>Self employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of man days</td>
<td>No. of beneficiaries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SC</td>
<td>ST</td>
</tr>
<tr>
<td>1.</td>
<td>Thangtngaw</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>2.</td>
<td>Nongrynniaw</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>3.</td>
<td>Mawngap Kynjang</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>4.</td>
<td>Mawngap</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>5.</td>
<td>Mawstieh</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>6.</td>
<td>Mawdongkiang</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>7.</td>
<td>Porsohsan</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>8.</td>
<td>Porkrong</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>9.</td>
<td>Mawtirang</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
**Table 7.2: Migration details:**

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

*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:**

<table>
<thead>
<tr>
<th>Availability of drinking water</th>
<th>Quality of drinking water</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre – Project</td>
<td>Post – Project</td>
<td>Change in availability</td>
</tr>
<tr>
<td>Insufficient</td>
<td>Sufficient</td>
<td>7 – 9 months</td>
</tr>
</tbody>
</table>

- 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.

51
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:

<table>
<thead>
<tr>
<th>Name of Project</th>
<th>Name of Crops</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre-Project</td>
<td>Mid-Term</td>
<td>Post-Project</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Area (Ha)</td>
<td>Area (Ha)</td>
<td>Area (Ha)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average yield (Qtl/Ha)</td>
<td>Average yield (Qtl/Ha)</td>
<td>Average yield (Qtl/Ha)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Production (Qtl)</td>
<td>Total Production (Qtl)</td>
<td>Total Production (Qtl)</td>
<td></td>
</tr>
</tbody>
</table>

W.K.H. IWMP-IX

<table>
<thead>
<tr>
<th>Name of Crops</th>
<th>Irri</th>
<th>Rf</th>
<th>Irri</th>
<th>Rf</th>
<th>Irri</th>
<th>Rf</th>
<th>Irri</th>
<th>Rf</th>
<th>Irri</th>
<th>Rf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy</td>
<td>30</td>
<td>30</td>
<td>17</td>
<td>-</td>
<td>510</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maize</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>400</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ginger</td>
<td>-</td>
<td>20</td>
<td>-</td>
<td>75</td>
<td>-</td>
<td>1500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

* 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:

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

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:

<table>
<thead>
<tr>
<th>Name of Project</th>
<th>Name of Crops</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Area (Ha)</td>
<td>Average yield (Qtl/Ha)</td>
<td>Total Production (Qtl)</td>
<td>Area (Ha)</td>
<td>Average yield (Qtl/Ha)</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Maize</td>
<td>Irri</td>
<td>24.63</td>
<td>6</td>
<td>147</td>
<td>Irri</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Duration of project</th>
<th>Source/Name of report</th>
<th>Year of reference</th>
<th>Area already under fodder</th>
<th>Area under fodder proposed to be covered through IWMP</th>
<th>Area under fodder actually covered through IWMP</th>
<th>Change in area under fodder</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>5 years</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

* 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:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Duration of project</th>
<th>Existing area tree cover (ha)</th>
<th>Expected outcome (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Source/Name of report</td>
<td>Year of reference</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>5 years</td>
<td>LULC Map, NESAC Umiam</td>
<td>2005-06</td>
</tr>
</tbody>
</table>

* 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:

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Duration of Project</th>
<th>Pre Project Area (ha)</th>
<th>Expected outcome (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Source/Name of report</td>
<td>Year of reference</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>5 years</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 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:

<table>
<thead>
<tr>
<th>Name of Project</th>
<th>Duration of Project</th>
<th>Pre Project Area (ha)</th>
<th>Post Project Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Source/Name of report</td>
<td>Year of reference</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>5 years</td>
<td>LULC Map, NESAC Umiam</td>
<td>2005-06</td>
</tr>
</tbody>
</table>

* 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.
### Livelihood related outcomes:

#### Details of livestock in the project areas

(for fluids please mention in liters, for solids please mention in kgs and income in Rs.)

<table>
<thead>
<tr>
<th>Name of project</th>
<th>Type of animal</th>
<th>Pre Project</th>
<th>Mid Term</th>
<th>Post Project</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>Yield</td>
<td>Income</td>
<td>No.</td>
</tr>
<tr>
<td>W.K.H. IWMP-IX</td>
<td>Cattle</td>
<td>529</td>
<td>-</td>
<td>26.452</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poultry</td>
<td>1743</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Piggery</td>
<td>151</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total for all projects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 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)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>District</td>
<td>Name of project</td>
<td>Name of WC</td>
<td>Estimated cost (in lakh)</td>
<td>Expected quantifiable</td>
<td>Benefit cost ratio</td>
</tr>
<tr>
<td></td>
<td>West Khasi Hills</td>
<td>W.K.H. IWMP-IX</td>
<td>Umnei-Umsolphie</td>
<td>As per treatment plan</td>
<td>225.00 Lakhs</td>
<td>3814.88378</td>
</tr>
</tbody>
</table>

* 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
ANEXTURE II ESTIMATES COST
Estimate for construction of Diversion Dam at Umnei-Umsohpie 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 stabilized soil mixed with gravels or small boulders.
      
      \[ 6.00 \times 1.30 \times 1.00 = 7.80 \text{m}^3 \]
      \[ @ \text{Rs. 201/m}^3 \]
      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.
      \[ 6.00 \times 0.90 \times 1.00 \text{m} = 5.40 \text{m}^3 \]
      \[ 6.00 \times 0.90+0.75 \times 1.20 \text{m} = 5.94 \text{m}^3 \]
      \[ \frac{2}{2} = 11.34 \text{m}^3 \]
      \[ @ \text{Rs. 1574/m}^3 \]
      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.

   \[ 6.00 \times 2.10 \times 1.00 \text{m} = 2.52 \text{m}^3 \]
   \[ 6.00 \times 0.75 \times 0.10 \text{m} = 0.45 \text{m}^3 \]
   \[ = 2.97 \text{m}^3 \]
   \[ @ \text{Rs. 3216/m}^3 \]
   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.

   \[ 6.00 \times 2.20 \times 2 \text{m} = 26.40 \text{m}^2 \]
   \[ @ \text{Rs. 308/m}^2 \]
   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).

\[
\begin{align*}
6.00 \times 1.30 \times 2 & = 15.60 \text{m}^2 \\
6.00 \times 0.95 & = 5.70 \text{m}^2 \\
\text{Prop 1:3; @ Rs. 137/m}^2 & = 21.30 \text{m}^2
\end{align*}
\]

Total Rs. 40,427.78.

Say Rs. 40,422.00.

(Rupees Forty thousand four hundred twenty two) only.

Submitted
Estimate for construction of Diversion Dam at Umnei-Umsohpie 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 inserted.

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 0.90+0.75 x1.20m = 5.94m³
\[ \frac{5.94}{2} = 11.34 \text{m}^3 \]
@ Rs. 1574/m³ Rs. 17849.16.

4/6.1 Providing cement concrete work in prop 1:3:6 (M100) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.00x2.10x1.00m = 2.52m³
6.00x0.75x0.10m = 0.45m³
\[ = 2.97 \text{m}^3 \]
@ 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).

\[
\begin{align*}
6.00 \times 1.30 \times 2 &= 15.60 \text{m}^2 \\
6.00 \times 0.95 &= 5.70 \text{m}^2 \\
&= 21.30 \text{m}^2
\end{align*}
\]

Prop 1:3; \quad @ \text{Rs. 137/m}^2 \quad \text{Rs. 2918.10.}

Total \quad \text{Rs. 40,427.78.}

Say \quad \text{Rs. 40,422.00.}

(Rupees Forty thousand four hundred twenty two) only.

Submitted
Estimate for construction of Drinking Well at Umnei-Umsohpie 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 up to 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 (M100) 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
\[
\begin{align*}
3.00 \times 2.00 \times 1.20 \times 2 & = 14.40 \text{m}^2 \\
2.00 \times 3.25 \times 3.50 & = 22.75 \text{m}^2 \\
\sum & = 37.15 \text{m}^2
\end{align*}
\]

\[ @ \text{ Rs. 137/m}^2 \]

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% of 1.137cm² C.C. work = .72qtls

\[ @ \text{ Rs. 5945/qtl} \]

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-Umsohpie 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 up to 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.

\[3.20 \times 3.20 \times 1.50 = 15.36 \text{ m}^3\]
\[@ \text{Rs. 194/m}^3\]
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.

\[1.00 \times 3.25 \times 3.50 \times 0.10 \text{m} = 1.137 \text{ m}^3\]
\[@ \text{Rs. 3216/m}^3\]
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)

\[4.00 \times 2.00 \times 0.60 \times 1.20 \text{m} = 5.76 \text{ m}^3\]
\[@ \text{Rs. 1574/m}^3\]
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.

\[3.00 \times 3.00 \text{m} = 9.00 \text{m}^2\]
\[@ \text{Rs. 308/m}^2\]
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.

\[3.00 \times 1.20 \times 2.00 \text{m} = 7.20 \text{m}^2\]
\[@ \text{Rs. 263/m}^2\]
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
\[
\begin{align*}
3.00 \times 2.00 \times 1.20 \times 2 &= 14.40 \text{m}^2 \\
2.00 \times 3.25 \times 3.50 &= 22.75 \text{m}^2 \\
\hline
&= 37.15 \text{m}^2
\end{align*}
\]
@ 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% of 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-Umsophie 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.

   \[
   6.00 \times 1.30 \times 1.00 = 7.80 \text{m}^3
   \]

   \[
   \text{@ Rs. 201/m}^3
   \]

   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

   \[
   \begin{align*}
   6.00 \times 0.90 \times 1.00 &= 5.40 \text{m}^3 \\
   \frac{(6.00 \times 0.90 + 0.75 \times 1.20)}{2} &= 11.34 \text{m}^3 \\
   \text{@ Rs. 1574/m}^3
   \end{align*}
   \]

   Rs. 17849.16.

4/6.1 Providing cement concrete work in prop 1:3:6 (M100) with hard broken stone aggregates 40mm downgrade including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

   \[
   \begin{align*}
   6.00 \times 2.10 \times 1.00 &= 12.60 \text{m}^3 \\
   6.00 \times 0.75 \times 0.01 &= 0.45 \text{m}^3 \\
   &= 2.97 \text{m}^3 \\
   \text{@ Rs. 3216/m}^3
   \end{align*}
   \]

   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.

   \[
   6.00 \times 2.20 \times 2.00 = 26.40 \text{m}^2
   \]

   \[
   \text{@ Rs. 308/m}^2
   \]

   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).

\[
\begin{align*}
6.00 \times 1.30 \times 2 &= 15.60 \text{m}^2 \\
6.00 \times 0.95 &= 5.70 \text{m}^2
\end{align*}
\]

\[
= 21.30 \text{m}^2
\]

Prop 1:3; @ Rs. 137/m²

\begin{align*}
\text{Total} &\quad \text{Rs. 2918.10.} \\
\text{Say} &\quad \text{Rs. 40,810.00.}
\end{align*}

(Rupees Forty thousand eight hundred ten) only.

Submitted
Estimate for construction of Head Water Dam at Umnei-Umsophie 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. 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. 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(0.90+0.75)x1.20m = 5.94m³
      2
      = 11.34m³
      @ Rs. 1574/m³
      Rs. 17849.16.

4/6. Providing cement concrete work in prop 1:3:6 (M₁₀₀) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

   6.00x2.10x2m = 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.
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).

\[
\begin{align*}
6.00 \times 1.30 \times 2 &= 15.60 \text{m}^2 \\
6.00 \times 0.95 &= 5.70 \text{m}^2 \\
&= 21.30 \text{m}^2
\end{align*}
\]

Prop 1:3; \quad @ \text{Rs. } 137/\text{m}^2 \quad \text{Rs. } 2918.10.

Total \quad \text{Rs. } 40,817.78.

Say \quad \text{Rs. } 40,810.00.

(Rupees Forty thousand eight hundred ten) only.

Submitted
Estimate for construction of Head Water Dam at Umnei-Umsophie 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.

   \[
   6.00 \times 1.30 \times 1.00 = 7.80 \text{m}^3 \\
   @ \text{Rs. 201/m}^3 \\
   \text{Rs. 1567.80.}
   \]

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

   \[
   \frac{6.00 \times 0.90 \times 1.00}{2} = 5.40 \text{m}^3 \\
   \frac{6.00 \times 0.90 + 0.75 \times 1.20}{2} = 5.94 \text{m}^3 \\
   \text{Total} = 11.34 \text{m}^3 \\
   @ \text{Rs. 1574/m}^3 \\
   \text{Rs. 17849.16.}
   \]

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.

   \[
   6.00 \times 2.10 \times 2.0 = 2.52 \text{m}^3 \\
   6.00 \times 0.75 \times 0.10 = 0.45 \text{m}^3 \\
   = 2.97 \text{m}^3 \\
   @ \text{Rs. 3216/m}^3 \\
   \text{Rs. 9551.52.}
   \]

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.

   \[
   6.00 \times 2.20 \times 2.0 = 26.40 \text{m}^2 \\
   @ \text{Rs. 308/m}^2 \\
   \text{Rs. 8131.20.}
   \]
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).

\[
\begin{align*}
6.00 \times 1.30 \times 2 &= 15.60 \text{m}^2 \\
6.00 \times 0.95 &= 5.70 \text{m}^2 \\
&= 21.30 \text{m}^2
\end{align*}
\]

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-Umsophie 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 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.

   \[ 6.00 \times 1.30 \times 1.00 = 7.80 \text{m}^3 \]
   \[ @ \text{Rs. 201/m}^3 \]
   \[ \text{Rs. 1567.80} \]

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

   \[ 6.00 \times 0.90 \times 1.00 \text{m} = 5.40 \text{m}^3 \]
   \[ 6.00 \times (0.90+0.75) \times 1.20 \text{m} = 5.94 \text{m}^3 \]
   \[ \frac{2}{2} = 11.34 \text{m}^3 \]
   \[ @ \text{Rs. 1574/m}^3 \]
   \[ \text{Rs. 17849.16} \]

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.

   \[ 6.00 \times 2.10 \times 2 \text{m} = 2.52 \text{m}^3 \]
   \[ 6.00 \times 0.75 \times 0.10 \text{m} = 0.45 \text{m}^3 \]
   \[ = 2.97 \text{m}^3 \]
   \[ @ \text{Rs. 3216/m}^3 \]
   \[ \text{Rs. 9551.52} \]

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.

   \[ 6.00 \times 2.20 \times 2 \text{m} = 26.40 \text{m}^2 \]
   \[ @ \text{Rs. 308/m}^2 \]
   \[ \text{Rs. 8131.20} \]
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).

\[
\begin{align*}
6.00 \times 1.30 \times 2 &= 15.60 \text{m}^2 \\
6.00 \times 0.95 &= 5.70 \text{m}^2 \\
&= 21.30 \text{m}^2
\end{align*}
\]

Prop 1:3; @ Rs. 137/m²

| 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-Umsophie IWMP-IX

(As per PWD [Rd] scheduled of rate 2010-11)

<table>
<thead>
<tr>
<th>Description</th>
<th>Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Site preparation like jungle clearance, etc at L/S rate</td>
<td>800.00</td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>b. Hard Soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.</td>
<td></td>
</tr>
<tr>
<td>6.00x1.30x1.00 = 7.80m³ @ Rs. 201/m³</td>
<td>1567.80</td>
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<td>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 6.00x0.90+0.75 x1.20m = 5.94m³</td>
<td>17849.16</td>
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<tr>
<td>2 = 11.34m³ @ Rs. 1574/m³</td>
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</tr>
<tr>
<td>4/6.1 Providing cement concrete work in prop 1:3:6 (M₁₀₀) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.</td>
<td></td>
</tr>
<tr>
<td>6.00x2.10x1.0x2m = 2.52m³ 6.00x0.75x0.10m = 0.45m³ = 2.97m³ @ Rs. 3216/m³</td>
<td>9551.52</td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>6.00x2.20x2m = 26.40m² @ Rs. 308/m²</td>
<td>8131.20</td>
</tr>
</tbody>
</table>
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).

\[
\begin{align*}
6.00\times1.30\times2 &= 15.60\text{m}^2 \\
6.00\times0.95\times2 &= 5.70\text{m}^2 \\
&= 21.30\text{m}^2 \\
\text{Prop 1:3; } @ \text{ Rs. 137/m}^2 &\text{ Rs. 2918.10.}
\end{align*}
\]

Total Rs. 40,817.78.

Say Rs. 40,810.00.

(Rupees Forty thousand eight hundred ten) only.

Submitted
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 adequate 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.
   
   \[
   \text{Volume} = 6.85 \times 0.75 \times 0.50 = 2.57 \text{m}^3
   \]
   @ 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.
   
   \[
   \text{Volume} = \frac{6.85 \times 0.65 \times 0.50}{2} = 2.23 \text{m}^3
   \]
   \[
   \text{Volume} = 6.85 \times 0.65 + 0.55 \times 1.00 = 4.11 \text{m}^3
   \]
   \[
   \text{Total Volume} = 6.34 \text{m}^3
   \]
   @ 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
1/2.2 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.

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.

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

\[@ \text{Rs. 194/m}^3\]

\[\text{Rs. 523.80}.\]

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.

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

\[7.20 \times 0.65+0.55 \times 1.05 \text{m} = 4.725 \text{m}^3\]

\[= 7.065 \text{m}^3\]

\[@ \text{Rs. 1045/m}^3\]

\[\text{Rs. 7382.92}.\]

Total \[\text{Rs. 7,906.72}].\]

Say \[\text{Rs. 7,900.00}].\]

(Rupees Seven thousand nine hundred) only.

Submitted
Estimate for construction of Retaining Wall/Protection Wall at Umnei-Umsophie 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, 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.
      \[ 7.20 \times 0.75 \times 0.50 = 2.70 \text{m}^3 \]
      @ 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.
      \[ 7.20 \times 0.65 \times 0.50 = 2.340 \text{m}^3 \]
      \[ 7.20 \times (0.65+0.55) \times 1.05 = 4.725 \text{m}^3 \]
      \[ 2 = 7.065 \text{m}^3 \]
      @ Rs. 1045/m³
      Rs. 7382.92.

Total Rs. 7,906.72.
Say Rs. 7,900.00.
(Rupees Seven thousand nine hundred) only.

Submitted
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.

\[
\begin{align*}
7.20 \times 0.65 \times 0.50m &= 2.340m^3 \\
7.20 \times 0.65 + 0.55 \times 1.05m &= 4.725m^3 \\
\frac{2}{2} &= 7.065m^3 \\
@ Rs. 1045/m^3 &= Rs. 7382.92.
\end{align*}
\]

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-Umsophie 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.

\[7.20 \times 0.75 \times 0.50 m = 2.70 m^3\]

@ 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.

\[\frac{7.20 \times 0.65 \times 0.50 m}{2} = 2.340 m^3\]

\[7.20 \times 0.65 + 0.55 \times 1.05 m = 4.725 m^3\]

\[\frac{4.725 + 2.340}{2} = 7.065 m^3\]

@ 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-Umsophie 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 stabilized soil mixed with gravels or small boulders.

\[
\begin{align*}
4.80 \times 1.00 \times 0.50 &= 2.40 \text{m}^3 \\
4.80 \times 2.40 \times 0.30 &= 3.46 \text{m}^3 \\
&= 5.86 \text{m}^3 \\
@ \text{Rs. 201/m}^3 \\
&= 1177.86.
\end{align*}
\]

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.

\[
\begin{align*}
4.80 \times 1.00 \times 0.50 &= 2.40 \text{m}^3 \\
4.80 \times 1+0.60 \times 1.50 &= 5.76 \text{m}^3 \\
2 \\
4.80 \times 2.40 \times 0.60 &= 6.91 \text{m}^3 \\
(-) \text{less } 2.40 \times 1.20 \times 0.30 &= 0.86 \text{m}^3 \\
&= 14.21 \text{m}^3 \\
@ \text{Rs. 1771/m}^3 \\
&= 25165.91.
\end{align*}
\]

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.

\[
\begin{align*}
1.80 \times 0.175 \times 0.175 \times 4 &= 0.220 \text{m}^3 \\
4.80 \times 0.175 \times 0.175 \times 2 &= 0.294 \text{m}^3 \\
&= 0.514 \text{m}^3 \\
@ \text{Rs. 3216/m}^3 \\
&= 1653.02.
\end{align*}
\]

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.

\[
\begin{align*}
4.80 \times 2.00 \times 2 &= 19.20 \text{m}^2 \\
@ \text{Rs. 308/m}^2 \\
&= 5913.60.
\end{align*}
\]
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).

\[
\begin{align*}
4.80\times1.60\times2 &= 15.36\text{m}^2 \\
4.80\times2.40 &= 11.52\text{m}^2 \\
2.40\times0.30\times3 &= 2.16\text{m}^2 \\
1.20\times0.30\times2 &= 0.72\text{m}^2 \\
4.80\times0.30 &= 1.44\text{m}^2 \\
1.20\times0.175\times4\times4 &= 3.36\text{m}^2 \\
4.80\times0.175\times4\times2 &= 6.72\text{m}^2 \\
\end{align*}
\]
\[= 41.28\text{m}^2 \]
@ 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% of 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.

\[
\begin{align*}
4.80\times0.175\times4\times4 &= 3.36\text{m}^2 \\
4.80\times0.175\times4\times2 &= 6.72\text{m}^2 \\
\end{align*}
\]
\[= 10.08\text{m}^2 \]
@ 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 road 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-Umsohpie 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.

\[8.00 \times 6.00 \times 0.70 = 3.36 \text{m}^3\]
@ 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.

\[8.00 \times 0.20 + 0.175 \times 2.20 = 3.30 \text{m}^3\]
\[\frac{2}{2} \times \text{Rs. 3216/m}^3\]  
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.

\[8.00 \times 1.25 \times 2 = 20.00 \text{m}^2\]
@ 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, gravel 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.

\[
\begin{align*}
8.00\times2.40\times1.50m &= 28.80m^3 \\
8.00\times2\times1.50\times3.00\times2 &= 36.00m^3 \\
\setminus &= 64.80m^3 \\
(\setminus) \text{ less c/wall} &= 3.30m^3 \\
\text{= 61.50m}^3
\end{align*}
\]

\[\times \text{ Rs. 275/m}^3 \quad \text{Rs. 16,912.50}.
\]

Total \quad \text{Rs. 34,461.66.}

Say \quad \text{Rs. 34,440;00}

(Rupees thirty four thousand four hundred forty) only

Submitted
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.

\[ 8.00 \times 0.60 \times 0.70 = 3.36 \text{ m}^3 \]
\[ @ \text{ Rs. 201/m}^3 \]
\[ \text{Rs. 675.36.} \]

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.

\[ 8.00 \times 0.20 + 0.175 \times 2.20 = 3.30 \text{ m}^3 \]
\[ @ \text{ Rs. 3216/m}^3 \]
\[ \text{Rs. 10,612.80.} \]

4/6.2 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.

\[ 8.00 \times 1.25 \times 2 = 20.00 \text{ m}^2 \]
\[ @ \text{ Rs. 308/m}^2 \]
\[ \text{Rs. 6,160.00.} \]

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.

\[
\begin{align*}
8.00 \times 2.40 \times 1.50 m & = 28.80 m^3 \\
8.00 \times 2 \times 1.50 \times 3.00 \times 2 & = 64.80 m^3 \\
(-) \text{ less c/wall} & = 3.30 m^3 \\
& = 61.50 m^3
\end{align*}
\]

@ 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.

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

@ 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.

\[
8.20 \times 0.20 + 0.175 \times 2.20 = 3.382 \text{m}^3
\]

\[
\frac{3.382}{2} @ \text{Rs. 3216/m}^3 \text{ Rs. 10,876.51.}
\]

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 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.

\[
\begin{align*}
8.20 \times 2.50 \times 1.50m & = 30.750m^3 \\
8.20 \times 2x1.50 \times 3.00 \times 2 & = 36.900m^3 \\
& = 67.650m^3 \\
( - ) \text{ less c/wall} & = 3.400m^3 \\
& = 64.250m^3 \\
@ \text{ Rs. 275/m}^3 & = \text{Rs. 17,668.75.}
\end{align*}
\]

Total \text{ Rs. 35,518.14.}

Say \text{ 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. 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.

\[ 8.20 \times 0.60 \times 0.70 = 3.44 \text{m}^3 \]
\[ @ \text{Rs. } 201/\text{m}^3 \]
\[ \text{Rs. } 691.44. \]

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.

\[ \frac{8.20 \times 0.20 + 0.175 \times 2.20}{2} = 3.382 \text{m}^3 \]
\[ @ \text{Rs. } 3216/\text{m}^3 \]
\[ \text{Rs. } 10,876.51. \]

4. 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.

\[ 8.20 \times 1.20 \times 2 = 19.68 \text{m}^2 \]
\[ @ \text{Rs. } 308/\text{m}^2 \]
\[ \text{Rs. } 6,061.44. \]

5. 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.

\[
\begin{align*}
8.20 \times 2.50 \times 1.50 & = 30.750 \text{m}^3 \\
8.20 \times 1.50 \times 3.00 \times 2 & = 36.900 \text{m}^3 \\
\text{Less c/wall} & = 3.400 \text{m}^3 \\
\text{Total} & = 64.25 \text{m}^3
\end{align*}
\]

\[
\text{Rate} \times \text{Volume} = \text{Amount}
\]

\[
\begin{align*}
8.20 \times 2.50 \times 1.50 \times 30.750 \times 275 & = 17,668.75. \\
\text{Total} & = 35,518.14. \\
\text{Say} & = 35,500.00.
\end{align*}
\]

(Rupees Thirty five thousand five hundred) only.

Submitted
Estimate for construction of Water Harvesting Farm Structure at Umnei-Umsohpie 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.

\[ 9.50 \times 0.90 \times 1.00m = 8.55m^3 \]
\[ @ \ Rs. 201/m^3 \]
\[ Rs. 1718.55. \]

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.

\[ 9.50 \times 0.80 \times 0.90 = 6.84m^3 \]
\[ 9.50 \times \frac{0.80 + 0.70 \times 1.60m}{2} = 11.40m^3 \]
\[ = 18.24m^3 \]
\[ @ \ Rs. 1574/m^3 \]
\[ Rs. 28709.76. \]

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.

\[ 9.50 \times 2.50 \times 1.0m = 2.375m^3 \]
\[ 9.50 \times 0.75 \times 0.75m = 0.605m^3 \]
\[ = 2.980m^3 \]
\[ @ \ Rs. 3216/m^3 \]
\[ Rs. 9583.68. \]

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.

\[ 9.50 \times 2.50m = 23.75m^2 \]
\[ @ \ Rs. 308/m^2 \]
\[ Rs. 7315.00. \]

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 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.

\[
\begin{align*}
9.50\times2.00\times1.80\text{m} & = 34.20\text{m}^3 \\
9.50\times0.5\times1.80\times2.70\text{m} & = 23.08\text{m}^3 \\
& = 57.28\text{m}^3 \\
\text{@ Rs. 275/m}^3 & \text{ Rs. 15752.00.}
\end{align*}
\]

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.

\[ 9.50 \times 0.90 \times 1.00 \text{m} = 8.55 \text{m}^3 \]
\[ @ \text{Rs. 201/m}^3 \]
\[ \text{Rs. 1718.55.} \]

3/4.3 Providing cement concrete work in prop 1:3:6 (M100) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

\[ 9.50 \times 0.80 \times 0.90 \text{m} = 6.84 \text{m}^3 \]
\[ \frac{9.50 \times 0.80 \times 0.90}{2} = 11.40 \text{m}^3 \]
\[ @ \text{Rs. 1574/m}^3 \]
\[ \text{Rs. 28709.76.} \]

4/6.1 Providing cement concrete work in prop 1:3:6 (M100) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

\[ 9.50 \times 2.50 \times 0.10 \text{m} = 2.375 \text{m}^3 \]
\[ 9.50 \times 0.75 \times 0.75 \text{m} = 0.605 \text{m}^3 \]
\[ = 2.980 \text{m}^3 \]
\[ @ \text{Rs. 3216/m}^3 \]
\[ \text{Rs. 9583.68.} \]

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.

\[ 9.50 \times 2.50 \text{m} = 23.75 \text{m}^2 \]
\[ @ \text{Rs. 308/m}^2 \]
\[ \text{Rs. 7315.00.} \]

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 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.

\[
\begin{align*}
9.50\times2.00\times1.80m & = 34.20m^3 \\
9.50\times\frac{1}{2}\times1.80\times2.70m & = 23.08m^3 \\
& = 57.28m^3 \\
\text{@ Rs. 275/m}^3 & \text{ Rs. 15752.00.}
\end{align*}
\]

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-Umphohie 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.

\[
9.50 \times 0.90 \times 1.00 = 8.55\, m^3
\]
\[
@ \text{ Rs. } 201/m^3
\]
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.

\[
\frac{9.50 \times 0.80 \times 0.90}{2} = 6.84\, m^3
\]
\[
\frac{9.50 \times 0.80 \times 1.60 - 0.70 \times 1.60}{2} = 1.14\, m^3
\]
\[
= 18.24\, m^3
\]
\[
@ \text{ Rs. } 1574/m^3
\]
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.

\[
9.50 \times 2.50 \times 0.10 = 2.375\, m^3
\]
\[
9.50 \times 0.75 \times 0.75 = 0.605\, m^3
\]
\[
= 2.980\, m^3
\]
\[
@ \text{ Rs. } 3216/m^3
\]
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.

\[
9.50 \times 2.50 = 23.75\, m^2
\]
\[
@ \text{ Rs. } 308/m^2
\]
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 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.

\[
\begin{align*}
9.50 \times 2.00 \times 1.80 & \text{m} = 34.20 \text{m}^3 \\
9.50 \times 1.2 \times 1.80 \times 2.70 & = 23.08 \text{m}^3 \\
\text{Total} & = 57.28 \text{m}^3 \\
@ \text{Rs. 275/m}^3 & \text{ Rs. 15752.00.}
\end{align*}
\]

\[
\text{Total Rs. 63,508.99.}
\]

\[
\text{Say Rs. 63,500.00.}
\]

(Rupees Sixty three thousand five hundred) only.

Submitted
Estimate for construction of Diversion Dam at Umnei-Umsohpie 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 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.

\[
5.00 \times 1.20 \times 0.80 = 4.80 \text{m}^3 \\
\text{@ Rs. 201/m}^3 \\
\text{Rs. 964.80.}
\]

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)

\[
\begin{align*}
5.00 \times 0.90 \times 0.80m & = 3.60m^3 \\
5.00 \times 0.90+0.75 \times 1.15m & = 4.743m^3 \\
\frac{2}{2} & = 8.343m^3 \\
\text{@ Rs. 1574/m}^3 & \\
\text{Rs. 13135.03.}
\end{align*}
\]

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.

\[
5.00 \times 1.20 \times 0.80 = 4.80 \text{m}^3
\]

@ Rs. 201/m³

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)

\[
\begin{align*}
5.00 \times 0.90 \times 0.80 & = 3.60 \text{m}^3 \\
5.00 \times 0.90 & + 0.75 \times 1.15 & = 4.743 \text{m}^3 \\
\frac{2}{2} & = 8.343 \text{m}^3
\end{align*}
\]

@ Rs. 1574/m³

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-Umsophie 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.

   \[
   \begin{align*}
   3.00 \times 1.50 \times 0.50 \times 2 &= 4.50 \text{m}^3 \\
   1.50 \times 1.50 \times 0.50 \times 2 &= 2.25 \text{m}^3 \\
   &= 6.75 \text{m}^3
   \end{align*}
   \]

   @ 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)

   \[
   \begin{align*}
   3.00 \times 1.50 \times 0.40 \times 2 &= 3.60 \text{m}^3 \\
   1.50 \times 1.50 \times 0.40 \times 2 &= 1.80 \text{m}^3 \\
   &= 5.40 \text{m}^3
   \end{align*}
   \]

   @ 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-Umsophie 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 adequate 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.
      
      $\frac{3.00 \times 1.50 \times 0.50 \times 2}{1.50 \times 1.50 \times 0.50 \times 2} = 2.25m^3$  
      
      $\frac{6.75m^3}{200} = Rs. 194/m^3$  

   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)

      $3.00 \times 1.50 \times 0.40 \times 2 = 3.60m^3$  
      $1.50 \times 1.50 \times 0.40 \times 2 = 1.80m^3$  

   $5.40m^3$  

   @ 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 stabilized soil mixed with gravels or small boulders.

\[ 4.60 \times 1.20 \times 0.80 = 4.42 \text{m}^3 \]
\[ @ \ Rs. 201/\text{m}^3 \]
\[ Rs. 888.42. \]

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)

\[ \frac{4.60 \times 0.90 \times 0.80}{2} = 3.312 \text{m}^3 \]
\[ \frac{4.60 \times 0.90 + 0.70 \times 0.90}{2} = 3.313 \text{m}^3 \]
\[ @ \ Rs. 1574/\text{m}^3 \]
\[ Rs. 10426.17. \]

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

\[ 4.60 \times 1.70 \times 10 \times 2 = 1.564 \text{m}^3 \]
\[ 4.60 \times 0.70 \times 10 \times 0.10 = 0.322 \text{m}^3 \]
\[ = 1.886 \text{m}^3 \]
\[ @ \ Rs. 3216/\text{m}^3 \]
\[ Rs. 6065.37. \]

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.

\[ 4.60 \times 1.70 \times 2 = 15.64 \text{m}^2 \]
\[ @ \ Rs. 308/\text{m}^2 \]
\[ Rs. 4817.12. \]
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).

\[
\begin{align*}
4.60 \times 1.00 \times 2 &= 9.20 \text{m}^2 \\
4.60 \times 0.90 &= 4.14 \text{m}^2 \\
\text{Total} &= 13.34 \text{m}^2 \\
\text{@ Rs. 137/m}^2 &= \text{Rs. 1827.58.}
\end{align*}
\]

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-Umsohpie 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 stabilized soil mixed with gravels or small boulders.

\[ 4.60 \times 1.20 \times 0.80 = 4.42 \text{m}^3 \]
\[ @ \text{Rs. 201/m}^3 \]
\[ \text{Rs. 888.42} \]

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).

\[ 4.60 \times 0.90 \times 0.80 = 3.312 \text{m}^3 \]
\[ 4.60 \times 0.90 \times 0.70 \times 0.90 = 3.313 \text{m}^3 \]
\[ \frac{4.60 \times 0.90 \times 0.80 + 4.60 \times 0.90 \times 0.70 \times 0.90}{2} = 6.624 \text{m}^3 \]
\[ @ \text{Rs. 1574/m}^3 \]
\[ \text{Rs. 10426.17} \]

4/6.1 Providing cement concrete work in prop 1:3:6 (M100) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

\[ 4.60 \times 1.70 \times 1.0 \times 2 = 1.564 \text{m}^3 \]
\[ 4.60 \times 0.70 \times 0.10 = 0.322 \text{m}^3 \]
\[ = 1.886 \text{m}^3 \]
\[ @ \text{Rs. 3216/m}^3 \]
\[ \text{Rs. 6065.37} \]

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.

\[ 4.60 \times 1.70 \times 2 = 15.64 \text{m}^2 \]
\[ @ \text{Rs. 308/m}^2 \]
\[ \text{Rs. 4817.12} \]
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).

\[
\begin{align*}
4.60 \times 1.00 \times 2 &= 9.20 \text{m}^2 \\
4.60 \times 0.90 &= 4.14 \text{m}^2 \\
&= 13.34 \text{m}^2 \\
@ \text{Rs. 137/m}^2 &\quad \text{Rs. 1827.58.}
\end{align*}
\]

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-Umsophie 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 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.

\[
4.60 \times 1.20 \times 0.80 = 4.42 \text{m}^3
\]
\[
@ \text{Rs. 201/m}^3
\]
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)

\[
\frac{4.60 \times 0.90 \times 0.80}{2} = 3.312 \text{m}^3
\]
\[
\frac{4.60 \times 0.90 + 0.70 \times 0.90}{2} = 3.313 \text{m}^3
\]
\[
@ \text{Rs. 1574/m}^3
\]
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

\[
4.60 \times 1.70 \times 0.10 \times 2 = 1.564 \text{m}^3
\]
\[
4.60 \times 0.70 \times 0.10 = 0.322 \text{m}^3
\]
\[
= 1.886 \text{m}^3
\]
\[
@ \text{Rs. 3216/m}^3
\]
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.

\[
4.60 \times 1.70 \times 2 = 15.64 \text{m}^2
\]
\[
@ \text{Rs. 308/m}^2
\]
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).

\[
\begin{align*}
4.60 \times 1.00 \times 2 &= 9.20 \, m^2 \\
4.60 \times 0.90 m &= 4.14 \, m^2 \\
&= 13.34 \, m^2 \\
\text{@ Rs. 137/m}^2 &\quad \text{Rs. 1827.58.}
\end{align*}
\]

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-Umsophie 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.

\[
5.20 \times 1.30 \times 0.80 = 5.40 \text{m}^3
\]
\[
\text{@ Rs. } 201/\text{m}^3
\]
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 in part, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer).

\[
5.20 \times 0.90 \times 1.00 \times 2 = 4.68 \text{m}^3
\]
\[
5.20 \times 0.90 + 0.75 \times 1.00 \times 2 = 8.97 \text{m}^3
\]
\[
\text{@ Rs. } 1574/\text{m}^3
\]
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.

\[
5.20 \times 1.80 \times 1.00 \times 2 = 1.872 \text{m}^3
\]
\[
5.20 \times 0.75 \times 0.10 = 0.390 \text{m}^3
\]
\[
= 2.262 \text{m}^3
\]
\[
\text{@ Rs. } 3216/\text{m}^3
\]
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.

\[
5.20 \times 1.80 \times 2 = 18.72 \text{m}^2
\]
\[
\text{@ Rs. } 308/\text{m}^2
\]
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).

\[
\begin{align*}
5.20 \times 1.10 \times 2 &= 11.44 \text{m}^2 \\
5.20 \times 0.95 &= 4.94 \text{m}^2 \\
5.20 \times 0.95 &= 16.38 \text{m}^2 \\
\text{R} \times 137/\text{m}^2 &= \text{Rs. 2244.06.}
\end{align*}
\]

Total Rs. 31,038.59.

Say Rs. 31,000.00.

(Rupees Thirty one thousand) only.

Submitted
Estimate for construction of Head Water Dam at Ummei-Umsophie 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 stabilized soil mixed with gravels or small boulders.

      \[
      \begin{align*}
      5.20 \times 1.30 \times 0.80 &= 5.40 \text{m}^3 \\
      \text{@ Rs. 201/m}^3 &= 1085.40.
      \end{align*}
      \]

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)

   \[
   \begin{align*}
   5.20 \times 0.90 \times 1.00 &= 4.68 \text{m}^3 \\
   5.20 \times 0.90+0.75 \times 1.00 &= 4.29 \text{m}^3 \\
   2 &= 8.97 \text{m}^3 \\
   \text{@ Rs. 1574/m}^3 &= 14118.78.
   \end{align*}
   \]

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.

   \[
   \begin{align*}
   5.20 \times 1.80 \times 10 &= 1.87 \text{m}^3 \\
   5.20 \times 0.75 \times 0.10 &= 0.39 \text{m}^3 \\
   &= 2.262 \text{m}^3 \\
   \text{@ Rs. 3216/m}^3 &= 7274.59.
   \end{align*}
   \]

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.

   \[
   \begin{align*}
   5.20 \times 1.80 \times 2 &= 18.72 \text{m}^2 \\
   \text{@ Rs. 308/m}^2 &= 5765.76.
   \end{align*}
   \]
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).

\[
\begin{align*}
5.20 \times 1.10 \times 2 &= 11.44 \text{m}^2 \\
5.20 \times 0.95 &= 4.94 \text{m}^2 \\
&= 16.38 \text{m}^2 \\
&\text{Rs. 2244.06.}
\end{align*}
\]

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-Umsohpie 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 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.

\[
\text{ Volume } = 5.20 \times 1.30 \times 0.80 = 5.40 \text{ m}^3
\]

@ 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)

\[
\begin{align*}
5.20 \times 0.90 \times 1.00 & = 4.68 \text{ m}^3 \\
5.20 \times 0.90 + 0.75 \times 1.00 & = 4.29 \text{ m}^3 \\
\frac{2}{2} & = 8.97 \text{ m}^3
\end{align*}
\]

@ Rs. 1574/m³ Rs. 14118.78.

4/6.1 Providing cement concrete work in prop 1:3:6 (M100) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

\[
\begin{align*}
5.20 \times 1.80 \times 0.10 \times 2 & = 1.872 \text{ m}^3 \\
5.20 \times 0.75 \times 0.10 & = 0.390 \text{ m}^3 \\
& = 2.262 \text{ m}^3
\end{align*}
\]

@ 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.

\[
5.20 \times 1.80 \times 2 = 18.72 \text{ m}^2
\]

@ 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).

\[
\begin{align*}
5.20 \times 1.10 \times 2 & = 11.44 \text{m}^2 \\
5.20 \times 0.95 & = 4.94 \text{m}^2 \\
& = 16.38 \text{m}^2 \\
@ \text{Rs. 137/m}^2 & \quad \text{Rs. 2244.06.}
\end{align*}
\]

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-Umsophie 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 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.

\[
5.20 \times 1.30 \times 0.80 = 5.40 \text{m}^3 \\
\text{at Rs. 201/m}^3 \\
\text{Rs. 1085.40.}
\]

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)

\[
5.20 \times 0.90 \times 1.00 = 4.68 \text{m}^3 \\
5.20 \times 0.90 + 0.75 \times 1.00 = 4.29 \text{m}^3 \\
\frac{5.20 \times 0.90 + 0.75 \times 1.00}{2} = 4.26 \text{m}^3 \\
\text{at Rs. 1574/m}^3 \\
\text{Rs. 14118.78.}
\]

4/6.1 Providing cement concrete work in prop 1:3:6 (M100) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

\[
5.20 \times 1.80 \times 0.10 = 1.872 \text{m}^3 \\
5.20 \times 0.75 \times 0.10 = 0.390 \text{m}^3 \\
= 2.262 \text{m}^3 \\
\text{at Rs. 3216/m}^3 \\
\text{Rs. 7274.59.}
\]

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.

\[
5.20 \times 1.80 \times 2 = 18.72 \text{m}^2 \\
\text{at Rs. 308/m}^2 \\
\text{Rs. 5765.76.}
\]
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).

\[
\begin{align*}
5.20 \times 1.10 \times 2 &= 11.44 \text{m}^2 \\
5.20 \times 0.95 &= 4.94 \text{m}^2 \\
5.20 \times 0.95 &= 16.38 \text{m}^2 \\
@ \text{Rs. } 137/\text{m}^2 &= \text{Rs. } 2244.06.
\end{align*}
\]

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-Umsophie 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 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.

   
   $$5.20 \times 1.30 \times 0.80 = 5.40 \text{m}^3$$
   
   @ 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)

   $$5.20 \times 0.90 \times 1.00 \text{m} = 4.68 \text{m}^3$$

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

   \[\frac{2}{2} = 8.97 \text{m}^3\]

   @ Rs. 1574/m$^3$

   Rs. 14118.78.

4/6.1  Providing cement concrete work in prop 1:3:6 (M100) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

   $$5.20 \times 1.80 \times 2 \text{m} = 1.872 \text{m}^3$$

   $$5.20 \times 0.75 \times 0.10 \text{m} = 0.390 \text{m}^3$$

   = 2.262m$^3$

   @ 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.

   $$5.20 \times 1.80 \times 2 \text{m} = 18.72 \text{m}^2$$

   @ 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).

\[
\begin{align*}
5.20\times1.10\times2 &= 11.44\text{m}^2 \\
5.20\times0.95\times2 &= 4.94\text{m}^2 \\
&= 16.38\text{m}^2 \\
@ \text{Rs. 137/m}^2 &\quad \text{Rs. 2244.06.}
\end{align*}
\]

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-Umsolphie 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, 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.

6.70 x 1.50 x 1.00 = 10.05m³
1.50 x 1.00 x 0.80 x 2.00 = 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)

6.70 x 1.20 x 1.00 = 8.040m³
6.70 x 1.20 + 0.90 x 1.25 = 8.794m³
2
1.50 x 0.90 x 2.30 = 3.105m³
= 19.939m³
@ Rs. 1574/m³
Rs. 31383.98.

4/6.1 Providing cement concrete work in prop 1:3:6 (M₁₀₀) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

6.70 x 2.35 x 1.00 x 2 = 3.149m³
6.70 x 1.10 x 0.10 = 0.737m³
1.50 x 2.30 x 0.10 = 0.690m³
4.60 x 1.80 x 0.10 = 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.

6.70 x 2.35 x 2.00 = 31.49m²
1.50 x 2.35 x 2.00 = 7.05m²
1.50 x 1.00 x 2.00 = 3.00m²
= 41.54m²
@ Rs. 308/m²
Rs. 12794.32.
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).

\[
\begin{align*}
6.70 \times 1.50 \times 2 &= 20.10 \text{m}^2 \\
6.70 \times 1.10 &= 7.37 \text{m}^2 \\
1.50 \times 1.50 \times 2 &= 4.50 \text{m}^2 \\
1.50 \times 0.90 \times 2 &= 2.70 \text{m}^2 \\
4.60 \times 1.80 &= 8.28 \text{m}^2 \\
&\text{Total } = 42.95 \text{m}^2 \\
\text{@ Rs. 137/m}^2 &\text{ Rs. 5884.15.}
\end{align*}
\]

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-Umsophie 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.

\[
8.60 \times 1.20 \times 0.90 = 9.29 \text{m}^3
\]
\[
@ \text{ Rs. } 194/\text{m}^3
\]
\[
= 1802.26
\]

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.

\[
8.60 \times 1.00 \times 0.90 = 7.74 \text{m}^3
\]
\[
8.60 \times 1.00 + 0.80 \times 1.20 = 9.29 \text{m}^3
\]
\[
= 17.03 \text{m}^3
\]
\[
@ \text{ Rs. } 1045/\text{m}^3
\]
\[
= 17796.35
\]

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.
      \[
      8.60 \times 1.20 \times 0.90m = 9.29m^3
      \]
      @ 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.
      \[
      \begin{align*}
      8.60 \times 1.00 \times 0.90m &= 7.74m^3 \\
      \frac{8.60 \times 1.00+0.80 \times 1.20m}{2} &= 9.29m^3 \\
      &= 17.03m^3
      \end{align*}
      \]
      @ 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-Umsophie 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.
      \[
      8.60 \times 1.20 \times 0.90 = 9.29 \text{ m}^3
      \]
      @ 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.
      \[
      \frac{8.60 \times 1.00 \times 0.90}{2} = 7.74 \text{ m}^3
      \]
      \[
      \frac{8.60 \times 1.00 + 0.80 \times 1.20}{2} = 9.29 \text{ m}^3
      \]
      \[
      = 17.03 \text{ m}^3
      \]
      @ 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-Umsophie 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.
   \[8.60 \times 1.20 \times 0.90 = 9.29 \text{m}^3\]
   @ 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.
   \[8.60 \times 1.00 \times 0.90 = 7.74 \text{m}^3\]
   \[8.60 \times (1.00+0.80) \times 1.20 = 9.29 \text{m}^3\]
   \[= 17.03 \text{m}^3\]
   @ 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 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.
   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.
      $8.60 \times 1.20 \times 0.90 = 9.29 \text{m}^3$
      @ 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.
      $8.60 \times 1.00 \times 0.90 = 7.74 \text{m}^3$
      $8.60 \times (1.00+0.80) \times 1.20 = 9.29 \text{m}^3$
      $\frac{2}{2} = 17.03 \text{m}^3$
      @ 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-Umsophie 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 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.
   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.
      \[
      \text{8.60} \times 1.20 \times 0.90m = 9.29m^3
      \]
      @ 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.
      \[
      \frac{8.60 \times 1.00 \times 0.90m}{2} = 7.74m^3
      \]
      \[
      8.60 \times (1.00+0.80) \times 1.20m = 9.29m^3
      \]
      \[
      \frac{17.03m^3}{2} = 17.03m^3
      \]
      @ 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-Umsohpie 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.

   \[
   6.50 \times 1.20 \times 0.90 \text{m}^3 = 7.02 \text{m}^3
   \]

   @ 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.

   \[
   \begin{align*}
   6.50 \times 1.10 \times 0.90 \text{m}^3 &= 6.44 \text{m}^3 \\
   6.50 \times (1.10+0.80) \times 1.10 \text{m}^3 &= 6.79 \text{m}^3 \\
   &= 13.23 \text{m}^3
   \end{align*}
   \]

   @ 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-Umsophie 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.

   \[
   6.80 \times 1.20 \times 0.90 = 7.34 \text{m}^3
   \]
   \[
   @ \text{Rs.}\ 194/\text{m}^3
   \]
   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 apart, staggered complete (a height wall of wall for every one metre should be kept exposed till inspected by the supervising officer)
   d. New stones.

   \[
   6.80 \times 1.10 \times 0.90 = 6.73 \text{m}^3
   \\
   6.80 \times 1.10 + 0.80 \times 1.10 = 7.11 \text{m}^3
   \\
   \frac{13.84}{2} = 13.84 \text{m}^3
   \]
   \[
   @ \text{Rs.}\ 1479/\text{m}^3
   \]
   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-Umsophie 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.

\[
6.80 \times 1.20 \times 0.90 = 7.34 \text{m}^3
\]

@ 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)

a. New stones.

\[
\begin{align*}
6.80 \times 1.10 \times 0.90 & = 6.73 \text{m}^3 \\
6.80 \times (1.10 + 0.80) \times 1.10 & = 7.11 \text{m}^3 \\
\frac{2}{2} & = 13.84 \text{m}^3
\end{align*}
\]

@ 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-Umsophie 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 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.

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.

\[6.80 \times 1.20 \times 0.90 = 7.34 \text{m}^3\]  
@ 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)

a. New stones.

\[6.80 \times 1.10 \times 0.90 = 6.73 \text{m}^3\]  
\[6.80 \times 1.10 + 0.80 \times 1.10 = 7.11 \text{m}^3\]  
\[\frac{13.84 \text{m}^3}{2} = 6.92 \text{m}^3\]  
@ 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-Umsophie 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.

\[
6.80 \times 1.20 \times 0.90 = 7.34 \text{ m}^3
\]

@ 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)

a. New stones.

\[
\frac{6.80 \times 1.10 \times 0.90}{2} = 6.73 \text{ m}^3
\]

\[
6.80 \times 1.10 + 0.80 \times 1.10 = 7.11 \text{ m}^3
\]

\[
= 13.84 \text{ m}^3
\]

@ 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-Umsophie 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, 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.
      \[
      8.25 \times 1.20 \times 0.90 = 8.91 \text{ m}^3
      \]
      @ 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.
      \[
      \frac{8.25 \times 1.10 \times 0.90}{2} = 8.17 \text{ m}^3
      \]
      \[
      8.25 \times (1.10 + 0.80) \times 1.20 = 9.40 \text{ m}^3
      \]
      \[
      = 17.57 \text{ m}^3
      \]
      @ 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 Umrei-Umsolphie 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, 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.

<table>
<thead>
<tr>
<th>Volume (m³)</th>
<th>Rate (Rs/m³)</th>
<th>Total (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.25x1.20x0.90m</td>
<td>194</td>
<td>1728.54</td>
</tr>
</tbody>
</table>

b. New stones.

<table>
<thead>
<tr>
<th>Volume (m³)</th>
<th>Rate (Rs/m³)</th>
<th>Total (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.25x1.10x0.90m</td>
<td>1479</td>
<td>12316.03</td>
</tr>
<tr>
<td>8.25x1.10x0.80x1.20m</td>
<td>1479</td>
<td>23467.03</td>
</tr>
</tbody>
</table>

= 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-Umsophie 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, 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
      8.25x1.10+0.80 x1.20m = 9.40m³
      \[ \frac{2}{2} = 17.57m³ \]
      @ 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-Umsophie 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.

\[
\frac{8.25 \times 1.10 \times 0.90}{2} = 8.17625m³
\]
\[
\frac{8.25 \times (1.10+0.80) \times 1.20}{2} = 9.40m³
\]
\[
\frac{8.17625 + 9.40}{2} = 17.5725m³
\]
   @ 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-Umsohpie 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 moom or, red soil, mixture of these similar materials which yields to the ordinary application/ordinary digging implement etc.

\[
8.25 \times 1.20 \times 0.90 \text{m} = 8.91 \text{m}^3
\]

@ 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.

\[
8.25 \times 1.10 \times 0.90 \text{m} = 8.17 \text{m}^3
\]

\[
8.25 \times (1.10+0.80) \times 1.20 \text{m} = 9.40 \text{m}^3
\]

\[
\frac{2}{2} = 17.57 \text{m}^3
\]

@ 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-Umsohpie 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 adequate 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.

\[
\begin{align*}
4.80 \times 1.00 \times 0.50 &= 2.40 \text{m}^3 \\
4.80 \times 2.40 \times 0.30 &= 3.46 \text{m}^3 \\
&= 5.86 \text{m}^3 \\
@ \text{Rs. 201/m}^3 &\text{ Rs. 1177.86.}
\end{align*}
\]

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.

\[
\begin{align*}
4.80 \times 1.00 \times 0.50 &= 2.40 \text{m}^3 \\
4.80 \times 1.60 \times 1.50 &= 5.76 \text{m}^3 \\
2 \\
4.80 \times 2.40 \times 0.60 &= 6.91 \text{m}^3 \\
(-) less 2.40 \times 1.20 \times 0.30 &= 0.86 \text{m}^3 \\
&= 14.21 \text{m}^3 \\
@ \text{Rs. 1771/m}^3 &\text{ Rs. 25165.91.}
\end{align*}
\]

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.

\[
\begin{align*}
1.80 \times 0.175 \times 0.175 \times 4 &= 0.220 \text{m}^3 \\
4.80 \times 0.175 \times 0.175 \times 2 &= 0.294 \text{m}^3 \\
&= 0.514 \text{m}^3 \\
@ \text{Rs. 3216/m}^3 &\text{ Rs. 1653.02.}
\end{align*}
\]

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.

\[
\begin{align*}
4.80 \times 2.00 \times 2m &= 19.20 \text{m}^2 \\
@ \text{Rs. 308/m}^2 &\text{ Rs. 5913.60.}
\end{align*}
\]
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).

\[
\begin{align*}
4.80 \times 1.60 \times 2 &= 15.36 \text{m}^2 \\
4.80 \times 2.40 &= 11.52 \text{m}^2 \\
2.40 \times 0.30 \times 3 &= 2.16 \text{m}^2 \\
1.20 \times 0.30 \times 2 &= 0.72 \text{m}^2 \\
4.80 \times 0.30 &= 1.44 \text{m}^2 \\
1.20 \times 0.175 \times 4 \times 4 &= 3.36 \text{m}^2 \\
4.80 \times 0.175 \times 4 \times 2 &= 6.72 \text{m}^2 \\
\end{align*}
\]

\[= 41.28 \text{m}^2 \]

\[@ \text{Rs. } 137/\text{m}^2 \]

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% of 0.514m³ C.C. work = .35qtls

\[@ \text{Rs. } 5945/qtl \]

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.

\[
\begin{align*}
4.80 \times 0.175 \times 4 \times 4 &= 3.36 \text{m}^2 \\
4.80 \times 0.175 \times 4 \times 2 &= 6.72 \text{m}^2 \\
\end{align*}
\]

\[= 10.08 \text{m}^2 \]

\[@ \text{Rs. } 148/\text{m}^2 \]

Rs. 1491.84.

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

ii. On rough road other than black-topped roads

A. 1^a 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-Umsohpie 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 adequate 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.

\[9.00 \times 1.00 \times 0.40 = 3.60 \text{m}^3\]
\[@ Rs. 112/\text{m}^3\]
\[Rs. 403.20.\]

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.

\[9.00 \times 2.40 \times 1.75 = 37.80 \text{m}^3\]
\[9.00 \times 1.5 \times 3.5 \times 2 = 55.12 \text{m}^3\]
\[9.00 \times \frac{1}{2} \times 1.75 \times 3.5 \times 2 = 92.92 \text{m}^3\]
\[@ Rs. 275/\text{m}^3\]
\[Rs. 25553.00.\]

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.

\[
9.00 \times 1.00 \times 0.40 = 3.60 \text{m}^3 \\
\text{@ Rs. 112/m}^3 \\
\text{Rs. 403.20.}
\]

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.

\[
9.00 \times 2.40 \times 1.75m = 37.80 \text{m}^3 \\
9.00 \times 1.75 \times 3.50 \times 2 = 55.12 \text{m}^3 \\
\text{@ Rs. 275/m}^3 \\
\text{Rs. 25553.00.}
\]

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
\[
\text{@ Rs. 57/Rm}
\]

\[
\text{Total Rs. 27,017.70.}
\]

Say Rs. 27,010.00.

(Rupees Twenty seven thousand ten) only.

Submitted
Estimate for construction of Water Harvesting Farm Structure at Umni-Umsophie 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.

\[
\text{Volume} = 12.50 \times 0.60 \times 1.00 = 7.50 \text{m}^3
\]

\[
\text{Rate} = \text{Rs.} \ 201/\text{m}^3
\]

\[
\text{Total Cost} = 7.50 \times 201 = \text{Rs.} \ 1507.50
\]

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.

\[
\text{Volume} = \frac{12.50 \times 25 + 20 \times 2.50}{2} = 7.030 \text{m}^3
\]

\[
\text{Rate} = \text{Rs.} \ 3216/\text{m}^3
\]

\[
\text{Total Cost} = 7.03 \times 3216 = \text{Rs.} \ 22608.48
\]

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.

\[
\text{Area} = 12.50 \times 2.50 \times 2 = 62.50 \text{m}^2
\]

\[
\text{Rate} = \text{Rs.} \ 308/\text{m}^2
\]

\[
\text{Total Cost} = 62.50 \times 308 = \text{Rs.} \ 19250.00
\]

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 8000.00 m³ of soil.

\[
\begin{align*}
12.50 \times 3.00 \times 1.80 & = 67.50 \text{m}^3 \\
12.50 \times \frac{1}{2} \times 1.80 \times 3.60 \times 2 & = 81.00 \text{m}^3 \\
& = 148.50 \text{m}^3 \\
\text{Less (-) C.C.} & = 7.03 \text{m}^3 \\
& = 141.47 \text{m}^3 \\
\text{@ Rs. 275/m}^3 & = \text{Rs. 38904.25.}
\end{align*}
\]

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

\[
\begin{align*}
12.50 \times 3.00 & = 37.50 \text{m}^2 \\
12.50 \times \sqrt{(1.80)^2 + (3.60)^2} & = 50.00 \text{m}^2 \\
& = 87.50 \text{m}^2 \\
\text{@ Rs. 50/m}^2 & = \text{Rs. 4375.00.}
\end{align*}
\]

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.

\[
\begin{align*}
4.70 \times 1.20 \times 0.30 & = 1.692 \text{m}^3 \\
4.70 \times 0.50 \times 2 & = 1.880 \text{m}^3 \\
& = 3.572 \text{m}^3 \\
\text{@ Rs. 1045/m}^3 & = \text{Rs. 3732.74.}
\end{align*}
\]

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).

\[
\begin{align*}
4.70 \times 1.20 & = 5.64 \text{m}^2 \\
4.70 \times 0.50 \times 2 & = 4.70 \text{m}^2 \\
& = 10.34 \text{m}^2 \\
\text{@ Rs. 137/m}^2 & = \text{Rs. 1416.58.}
\end{align*}
\]

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. 

\[
12.50 \times 0.60 \times 1.00\text{m} = 7.50\text{m}^3
\] @ 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.

\[
12.50 \times 2.50 \times 2.0\text{m} = 62.50\text{m}^2
\] @ 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 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.

\[
\begin{align*}
&12.50 \times 3.00 \times 1.80 \text{m}^3 = 67.50 \text{m}^3 \\
&12.50 \times \sqrt{1.80^2 + 3.60^2} \times 2 \text{m} = 81.00 \text{m}^3 \\
&= 148.50 \text{m}^3 \\
&\text{Less (-) C.C.} = 7.03 \text{m}^3 \\
&\text{= 141.47} \text{m}^3 \\
&@ Rs. 275/\text{m}^3 \\
&\text{Rs. 38904.25.}
\end{align*}
\]

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

\[
\begin{align*}
&12.50 \times 3.00 \text{m} = 37.50 \text{m}^2 \\
&12.50 \times \sqrt{(1.80)^2 + (3.60)^2} \times 2 \text{m} = 50.00 \text{m}^2 \\
&= 87.50 \text{m}^2 \\
&@ Rs. 50/\text{m}^2 \\
&\text{Rs. 4375.00.}
\end{align*}
\]

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.

\[
\begin{align*}
&4.70 \times 1.20 \times 0.30 \text{m} = 1.692 \text{m}^3 \\
&4.70 \times 0.50 \times 2 \text{m} = 1.880 \text{m}^3 \\
&= 3.572 \text{m}^3 \\
&@ Rs. 1045/\text{m}^3 \\
&\text{Rs. 3732.74.}
\end{align*}
\]

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).

\[
\begin{align*}
&4.70 \times 1.20 \text{m} = 5.64 \text{m}^2 \\
&4.70 \times 0.50 \times 2 \text{m} = 4.70 \text{m}^2 \\
&= 10.34 \text{m}^2 \\
&@ Rs. 137/\text{m}^2 \\
&\text{Rs. 1416.58.}
\end{align*}
\]

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 adequate shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

$12.50 \times 0.60 \times 1.00m = 7.50m^3$

@ 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.

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

$4.70 \times 1.20 \times 0.10m = 0.564m^3$

$4.70 \times 0.50 \times 0.10 \times 2m = 0.470m^3$

$= 8.064m^3$

@ 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.

$12.50 \times 2.50 \times 2m = 62.50m^2$

@ 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 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.

\[
\begin{align*}
12.50 \times 3.00 \times 1.80m & = 75.70m^3 \\
12.50 \times 1/2 \times 3.00 \times 3.60 \times 2m & = 81.00m^3 \\
\text{Less ( - ) C.C.} & = 7.03m^3 \\
\text{ @ Rs. 275/m}^3 & = 38904.25.
\end{align*}
\]

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

\[
\begin{align*}
12.50 \times 3.00m & = 37.50m^2 \\
12.50 \times \sqrt{1.80^2 + (3.60)^2} & = 50.00m^2 \\
\text{ @ Rs. 50/m}^2 & = 4375.00.
\end{align*}
\]

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.

\[
\begin{align*}
4.70 \times 1.40 \times 0.30m & = 1.974m^3 \\
4.70 \times 0.50 \times 2m & = 1.880m^3 \\
\text{ @ Rs. 1045/m}^3 & = 4027.43.
\end{align*}
\]

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).

\[
\begin{align*}
4.70 \times 1.20m & = 5.64m^2 \\
4.70 \times 0.50m & = 4.70m^2 \\
0.50 \times 0.40m & = 0.80m^2 \\
\text{ @ Rs. 137/m}^2 & = 1526.58.
\end{align*}
\]

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.

\[
\begin{align*}
12.50 \sqrt{1.80^2 \times 3.60^2 \times 0.30m} & = 15m^3 \\
\text{ @ Rs. 559/m}^3 & = 8385.00.
\end{align*}
\]

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

\[
\begin{align*}
i) 60cm \times 60m \text{ for 120 Rm} & \text{ @ Rs. 57/Rm} \\
\text{Total} & = \text{Rs. 6840.00.} \\
\text{Say} & = \text{Rs. 1,10,860.00.}
\end{align*}
\]

(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 adequate shoring, scaffolding including levelling the foundation longitudinally and transversely complete as directed including removal of spoil upto 30m lead and all lift.

\[
12.50 \times 0.60 \times 1.00 \text{m} = 7.50 \text{m}^3
\]
\[
\text{@ Rs. } 201/\text{m}^3
\]
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.

\[
12.50 \times \frac{25+20}{2} \times 2.50 \text{m} = 7.030 \text{m}^3
\]
\[
4.70 \times 1.20 \times 0.10 \text{m} = 0.564 \text{m}^3
\]
\[
4.70 \times 0.50 \times 0.10 \times 2 \text{m} = 0.470 \text{m}^3
\]
\[
= 8.064 \text{m}^3
\]
\[
\text{@ Rs. } 3216/\text{m}^3
\]
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.

\[
12.50 \times 2.50 \times 2 \text{m} = 62.50 \text{m}^2
\]
\[
\text{@ Rs. } 308/\text{m}^2
\]
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.

\[
\begin{align*}
12.50\times3.00\times1.80m & = 70.50m^3 \\
12.50\times2\times1.80\times3.60\times2m & = 81.00m^3 \\
\text{Less ( - ) C.C.} & = 7.03m^3 \\
\text{@ Rs. 275/m}^3 & = 3890.43.
\end{align*}
\]

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

\[
\begin{align*}
12.50\times3.00m & = 37.50m^2 \\
12.50\times\sqrt{1.80^2 + (3.60)^2} & = 50.00m^2 \\
\text{@ Rs. 50/m}^2 & = 2500.00.
\end{align*}
\]

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.

\[
\begin{align*}
4.70\times1.40\times0.30m & = 1.974m^3 \\
4.70\times0.50\times4.20m & = 1.880m^3 \\
0.50\times0.40\times4 & = 0.80m^3 \\
\text{@ Rs. 1045/m}^3 & = 4027.43.
\end{align*}
\]

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).

\[
\begin{align*}
4.70\times1.20m & = 5.64m^2 \\
4.70\times0.50x2 & = 4.70m^2 \\
0.50\times0.40\times4 & = 0.80m^2 \\
\text{@ Rs. 137/m}^2 & = 1526.58.
\end{align*}
\]

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.

\[
\begin{align*}
12.50\times\sqrt{1.80^2 \times 3.60^2 \times 0.30m} & = 15m^3 \\
\text{@ Rs. 559/m}^3 & = 8385.00.
\end{align*}
\]

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

\[
\begin{align*}
\text{@ Rs. 57/Rm} & = 6840.00.
\end{align*}
\]

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-Umsohpie 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, 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.

\[
\text{Volume} = 7.80 \times 1.20 \times 0.80 = 7.49\text{m}^3
\]
\[
\text{Rate} = Rs. 201/\text{m}^3
\]
\[
\text{Cost} = 7.49 \times 201 = Rs. 1505.49.
\]

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)

\[
\text{Volume} = 7.80 \times 0.90 \times 0.80 = 5.62\text{m}^3
\]
\[
\text{Volume} = 7.80 \times 0.90 + 0.80 \times 1.20 = 7.96\text{m}^3
\]
\[
\text{Volume} = 7.96 \times 2 = 15.92\text{m}^3
\]
\[
\text{Rate} = Rs. 1574/\text{m}^3
\]
\[
\text{Cost} = 15.92 \times 1574 = Rs. 21374.92.
\]

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.

\[
\text{Volume} = 7.80 \times 2.00 \times 0.10 = 1.56\text{m}^3
\]
\[
\text{Volume} = 7.80 \times 0.80 \times 0.10 = 0.62\text{m}^3
\]
\[
\text{Volume} = 2.18\text{m}^3
\]
\[
\text{Rate} = Rs. 3216/\text{m}^3
\]
\[
\text{Cost} = 2.18 \times 3216 = Rs. 7010.88.
\]

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.

\[
\text{Area} = 7.80 \times 2.00 = 15.60\text{m}^2
\]
\[
\text{Rate} = Rs. 308/\text{m}^2
\]
\[
\text{Cost} = 15.60 \times 308 = Rs. 4804.80.
\]

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-Umsophie 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.

\[
\begin{align*}
3.20 \times 1.50 \times 0.50 \times 2 &= 4.80 \text{m}^3 \\
2.20 \times 1.50 \times 0.50 \times 2 &= 3.30 \text{m}^3 \\
\sum &= 8.10 \text{m}^3 \\
\text{Rate} &= \text{Rs.} 194/\text{m}^3 \\
\text{Total Cost} &= \text{Rs.} 1571.40.
\end{align*}
\]

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.

\[
\begin{align*}
1.00 \times 3.25 \times 3.50 \times 0.10 &= 1.137 \text{m}^3 \\
\text{Rate} &= \text{Rs.} 3216/\text{m}^3 \\
\text{Total Cost} &= \text{Rs.} 3656.59.
\end{align*}
\]

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)

\[
\begin{align*}
2.00 \times 1.20 \times 0.40 \times 4 &= 3.84 \text{m}^3 \\
\text{Rate} &= \text{Rs.} 1574/\text{m}^3 \\
\text{Total Cost} &= \text{Rs.} 6044.16.
\end{align*}
\]

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.

\[
\begin{align*}
3.00 \times 3.00 &= 9.00 \text{m}^2 \\
\text{Rate} &= \text{Rs.} 308/\text{m}^2 \\
\text{Total Cost} &= \text{Rs.} 2772.00.
\end{align*}
\]

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.

\[
\begin{align*}
3.00 \times 1.20 \times 2.00 &= 7.20 \text{m}^2 \\
a. \text{Thickness} &= \text{Rs.} 263/\text{m}^2 \\
\text{Total Cost} &= \text{Rs.} 1893.60.
\end{align*}
\]
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
   \[
   \frac{3.00 \times 2.00 \times 1.20 \times 2}{2.00 \times 3.25 \times 3.50} = 14.40 \text{m}^2 \\
   \frac{22.75 \text{m}^2}{37.15 \text{m}^2} @ \text{Rs. 137/m}^2 = \text{Rs. 5089.55.}
   \]

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% of 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
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 stabilized soil mixed with gravels or small boulders.

   \[ 6.00 \times 1.30 \times 1.00 = 7.80 \text{m}^3 \]
   @ 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)

   \[ 6.00 \times 0.90 \times 1.00 = 5.40 \text{m}^3 \]
   \[ 6.00 \times 0.90 + 0.75 \times 1.20 = 5.94 \text{m}^3 \]
   \[ \frac{6.00 \times 0.90 + 0.75 \times 1.20}{2} = 5.94 \text{m}^3 \]
   @ 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.

   \[ 6.00 \times 2.10 \times 1.00 = 12.60 \text{m}^3 \]
   \[ 6.00 \times 0.75 \times 0.10 = 0.45 \text{m}^3 \]
   \[ \frac{6.00 \times 2.10 \times 1.00 + 6.00 \times 0.75 \times 0.10}{2} = 6.525 \text{m}^3 \]
   @ 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.

   \[ 6.00 \times 2.20 \times 2 = 26.40 \text{m}^2 \]
   @ 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).

\[
\begin{align*}
&6.00 \times 1.30 \times 2 = 15.60 \text{m}^2 \\
&6.00 \times 0.95 = 5.70 \text{m}^2 \\
&= 21.30 \text{m}^2
\end{align*}
\]
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-Umsophie 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.

\[
\begin{align*}
6.70 \times 1.50 \times 1.00 & = 10.05\text{m}^3 \\
1.50 \times 1.00 \times 2.00 & = 3.00\text{m}^3 \\
& = 12.45\text{m}^3
\end{align*}
\]

@ 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)

\[
\begin{align*}
6.70 \times 1.20 \times 1.00 & = 8.040\text{m}^3 \\
6.70 \times \frac{1.20 + 0.90 \times 1.25}{2} & = 8.794\text{m}^3 \\
1.50 \times 0.90 \times 2.30 & = 3.105\text{m}^3 \\
4.70 \times 1.80 \times 0.10 & = 0.846\text{m}^3 \\
& = 19.939\text{m}^3
\end{align*}
\]

@ Rs. 1574/m³ Rs. 31383.98.

4/6.1 Providing cement concrete work in prop 1:3:6 (M100) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

\[
\begin{align*}
6.70 \times 2.35 \times 1.00 & = 3.149\text{m}^3 \\
6.70 \times 1.10 \times 0.10 & = 0.739\text{m}^3 \\
1.50 \times 2.30 \times 0.10 & = 0.690\text{m}^3 \\
4.70 \times 1.80 \times 0.10 & = 0.846\text{m}^3 \\
& = 5.424\text{m}^3
\end{align*}
\]

@ 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.

\[
\begin{align*}
6.70 \times 2.35 \times 2m & = 31.49m^2 \\
1.50 \times 2.35 \times 2m & = 7.05m^2 \\
1.50 \times 1.00 \times 2m & = 3.00m^2 \\
\text{Total} & = 41.54m^2 \\
@ \text{Rs. 308/m}^2 & = \text{Rs. 12794.32.}
\end{align*}
\]

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).

\[
\begin{align*}
6.70 \times 1.50 \times 2 & = 20.10m^2 \\
6.70 \times 1.10 & = 7.37m^2 \\
1.50 \times 1.50 \times 2 & = 4.50m^2 \\
1.50 \times 0.90 \times 2 & = 2.70m^2 \\
4.60 \times 1.80 & = 8.28m^2 \\
1.50 \times 1.00 \times 2 & = 3.00m^2 \\
\text{Total} & = 45.95m^2 \\
@ \text{Rs. 137/m}^2 & = \text{Rs. 6295.15.}
\end{align*}
\]

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-Umsophie 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 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.
   a. Hard soil: - Comprising of stiff heavy clay, hard shale, compact moorum or stabilized soil mixed with gravels or small boulders.
      \[7.00 \times 1.20 \times 0.90 = 7.56 \text{m}^3\]
      @ 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 apart, 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.
      \[7.00 \times 1.10 \times 0.90 = 6.93 \text{m}^3\]
      \[7.00 \times 1.10 + 0.90 \times 1.10 = 7.70 \text{m}^3\]
      \[2 = 14.63 \text{m}^3\]
      @ 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-Umsophie 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.

\[9.40\times0.90\times1.00 = 8.46m^3\]
\[@\ Rs. \ 201/m^3\]
\[Rs. \ 1700.46.\]

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 x 25cm 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.

\[9.40\times0.80\times0.90m = 6.768m^3\]
\[9.40\times0.80+0.70\times1.60 = 11.280m^3\]
\[\frac{2}{2} = 18.048m^3\]
\[@\ Rs. \ 1574/m^3\]
\[Rs. \ 28407.55.\]

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.

\[9.40\times2.50\times0.10 = 2.35m^3\]
\[9.40\times0.75\times0.10 = 0.70m^3\]
\[= 3.05m^3\]
\[@\ Rs. \ 3216/m^3\]
\[Rs. \ 9808.80.\]

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.

\[9.40\times2.40m = 22.56m^2\]
\[@\ Rs. \ 308/m^2\]
\[Rs. \ 6948.48.\]
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

\[
\begin{align*}
9.40 \times 2.00 \times 1.80 & = 33.84 \text{m}^3 \\
9.40 \times 0.5 \times 1.80 \times 2.70 & = 22.84 \text{m}^3 \\
\text{Total} & = 56.68 \text{m}^3
\end{align*}
\]

@ 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.

\[ 9.40 \times 0.90 \times 1.00 = 8.46m^3 \]

@ 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.

\[ 9.40 \times 0.80 \times 0.90 = 6.768m^3 \]
\[ 9.40 \times 0.80 + 0.70 \times 1.60 = 11.280m^3 \]
\[ \frac{18.048}{2} = 18.048m^3 \]

@ Rs. 1574/m³  
Rs. 28407.55.

3/6.1 Providing cement concrete work in prop 1:3:6 (M100) with hard broken stone aggregates 40mm downgraded including necessary curing and carriage of stone and sand within a distance of 200m complete as directed.

\[ 9.40 \times 2.50 \times 0.10 = 2.35m^3 \]
\[ 9.40 \times 0.75 \times 0.10 = 0.70m^3 \]
\[ = 3.05m^3 \]

@ 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.

\[ 9.40 \times 2.40 = 22.56m^2 \]

@ 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

\[
\begin{align*}
9.40\times2.00\times1.80\ &= \ 33.84m^3 \\
9.40\times\frac{1}{2}\times1.80\times2.70 &\ = 22.84m^3 \\
\ &= 56.68m^3 \\
@ \ Rs. \ 275/m^3 &\ = \ Rs. \ 15587.00.
\end{align*}
\]

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-Umsolphie 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.

\[9.40 \times 0.90 \times 1.00 = 8.46 \text{m}^3\]
\[@ Rs. 201/\text{m}^3\]
\[Rs. 1700.46.\]

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.

\[9.40 \times 0.80 \times 0.90 = 6.768 \text{m}^3\]
\[9.40 \times 0.80 + 0.70 \times 1.60 = 11.280 \text{m}^3\]
\[\frac{11.280}{2} = 18.048 \text{m}^3\]
\[@ Rs. 1574/\text{m}^3\]
\[Rs. 28407.55.\]

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.

\[9.40 \times 2.50 \times 0.10 = 2.35 \text{m}^3\]
\[9.40 \times 0.75 \times 0.10 = 0.70 \text{m}^3\]

\[\frac{2.35 + 0.70}{2} = 3.05 \text{m}^3\]
\[@ Rs. 3216/\text{m}^3\]
\[Rs. 9808.80.\]

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.

\[9.40 \times 2.40 = 22.56 \text{m}^2\]
\[@ Rs. 308/\text{m}^2\]
\[Rs. 6948.48.\]
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

\[
\begin{align*}
9.40 \times 2.00 \times 1.80 m & = 33.84 m^3 \\
9.40 \times 0.5 \times 1.80 \times 2.70 & = 22.84 m^3 \\
& = 56.68 m^3 \\
\text{@ Rs. 275/m}^3 & \quad \text{Rs. 15587.00.}
\end{align*}
\]

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.