



**Government of Andhra Pradesh**

**A.P. Revised Standard Data**  
**(With Schedule of Rates 2016-17)**  
**(Effective from 01-06-2016)**

**Part – 1**

**For IRRIGATION & CAD WORKS**

**and**

**LEADS & LIFTS (Common to all Departments)**

**BOARD OF CHIEF ENGINEERS**

**Office of the Engineer-in-Chief(I.W)  
Water Resources Dept., Errummanzil, Hyderabad**

**Procs.No.ENC/IW/P&M/EE.1/DEE-2/AEE/ SoR 2016-17/Vol.2 dt: 26.07.2016**

**Sub:** A.P.Revised Standard Data with SoR 2016-17 for Water Resources Department works (Part-I) -approved-Printing & communication of Standard Data –Reg.,

**Ref:** 1)G.O.Ms.No.49,I&CAD (PW:Reforms)Dept., dt:2.3.2009

2)Minutes of BOCEs meeting for Schedule of Rates dt:23.07.2016.

3) SoR Procs.No.ENC/IW/P&M/EE.1/DEE-2/AEE/ SoR 2016-17/Vol.2 dt: 26.07.2016

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The annual Board of Chief Engineers meeting for finalization of Schedule of Rates (SoR) for WR Dept. (Part-I), Road & Bridges (Part-II) and Public Health Items (Part-IV) was held on 16.07.2016 @ 3.00 PM and approved the SoR . Based on the approval of BoCEs, the SoR for WR Dept. (basic input required for arriving unit item rate as per A.P. Revised Standard data), R&B and Public Health Department items were communicated vide this office proceedings 3<sup>rd</sup> cited.

By incorporating approved Labour, Material and Hire Charges for SoR 2016-17 & Percentage Provision of 13.615% towards Contractor's profit and overhead charges in the items, the A.P. Revised Standard Data (unit rate for work items) for the year 2016-17 is finalized. Any additions, modifications or deletions in the existing data must be approved by BoCEs. One soft copy is herewith enclosed.

**Encl:** Soft copy of A.P. Revised Standard Data for WR Department for the year 2016-17

Sd/-M.V.Ravi Kumar,dt:26.07.2016,

Engineer-in-Chief(I.W.)

Chairman, BOCE(SoR)

I) Copy communicated to the Principal Secretary to Govt.,WR Dept.,J-Block,A.P.Secretariat Buildings,Hyderabad.

II) Copy Communicated to the following Heads of Departments along with Enclosures for information.

1) Engineer-in-Chief (Admn & SR), Roads & Buildings Department.

2) Chief Engineer (P.H.), Public Health Department.

3) Engineer-in-Chief (P.R.), Panchayath Raj Department.

4) Chief Engineer (RWS) R W S, Department.

5) Engineer-in-Chief (Buildings), R&B Department.

6) Copies of Schedule of Rates 2016-17 & Standard data, part-1 (WR Dept. works) are communicated to the respective E-mail ids of all the Engineers-in-Chief, Chief Engineers and Regional Superintending Engineers of Irrigation circles of Vijayawada, Guntur, Dowlaiswaram and Chittoor of Water Resources Department for taking necessary action.

Sd/-M.V.Ravi Kumar,dt:26.07.2016,

Engineer-in-Chief(I.W.)

Chairman, BOCE(SoR)

**GOVERNMENT OF ANDHRA PRADESH**  
**ABSTRACT**

Irrigation & CAD Department - Adoption of Revision and Updating of Andhra Pradesh Standard data in all Engineering/Public Works Department and other organisations - Orders - Issued.

**IRRIGATION & CAD (PW- REFORMS) DEPARTMENT**

G.O.Ms. No.49

Dated: the 2nd March, 2009  
Read the following:-

1. G.O.Rt.No.7326 , GA (GPM/AR) Department dated 26.10.2005
2. From the Director General D.O.Letter.No.CGG/AP Standard Data/2006-07, dated 8.12.2006
3. Govt.Memo.No.36710/Reforms/I&CAD(PW) Dept., dated 22.6.2007
4. U.O.Note.No.36710/Reforms/2005, I&CAD (PW) Dpt., dt,29.6.2007
5. Govt.Memo.No.36710/Reforms/2005, I&CAD Dept., dated 10.3.2008
6. From ENC (AW)/IW I&CAD Dept., Letter.No.ENC/IW/P&M/EE.1/DEE.8 /19200-98, dated 21.4.2008

**ORDER:**

The basic components for preparing any estimate are Standard Specifications, Standard Data, and Schedule of Rates for construction materials, skilled and un-skilled labour and hire charges of machinery utilized on works. To get the work done, as per the standard specifications, required quantities of recommended materials, requirement of specific need based manpower, deployment of proper utility based machinery and duration of its utilization are to be observed and quantified for each unit of work, and this is called Standard Data. Thus, the Standard Data gives the details of various inputs in terms of quantities required for one Unit of any work. Schedule of rates for material, skilled and unskilled labour are fixed and revised by the Board of Chief Engineers' once in a year and these are called Standard Schedule of Rates. When the Standard Schedule of Rates and Hire charges of machinery are incorporated in the inputs of Standard Data and Standard Schedule of Rates it will have direct bearing on the preparation of project Estimates and consequent finalization of Tenders.

(P.T.O.)

2. The existing AP Standard Data for various construction items were based on observations made several decades back mostly by utilizing manpower for execution of all items of works, and deployment of machinery was at the barest minimum. The advent of latest machinery and their extensive use has changed the structure and methodology of data formulation and rate structure. There is a need to revise the present "Standard Data" for all items of works dealing with Public works. Realizing the urgency and importance to have realistic data, Government in the GO.Rt.No.7326 G.A (GPM & AR) Department dated 26-10-2005 constituted a High Level Committee under the chairmanship of Special Chief Secretary, General Administration (GPM&AR) Department, to advise on "Updating and Revising the A.P.Standard Data". A project for Standard Data (revision) and Schedule of Rates was conceived and entrusted to the Centre for Good Governance. Keeping in view the strategy, factors considered and classification of works, a number of High Level Committee meetings and review meetings were conducted at Centre for Good Governance/ A.P.Secretariat and in the offices of concerned Engineers-in-Chief I&CAD, Public Health, Panchayati Raj and Roads & Buildings Departments etc. Their specific views, suggestions and recommendations were taken into account, besides collecting the data from various sources while finalizing the Draft AP standard Data and Standard Schedule of Rates. This has been cleared by the Board of Chief Engineers' and finally by the High level Committee. The Standard Data has been revised and updated in four parts considering nature of work, location of work and magnitude of work as indicated below.

1. PART - I : Irrigation & Command Area Development.
2. PART- II : Roads & Bridges.
3. PART-III : Buildings
4. PART-IV : Drinking Water Supply Schemes.

3. The revision of Standard Data and Schedule of Rates in respect of works items of Irrigation Department, has been taken up by the SPIU (Irrigation) and completed as per the C.W.C guidelines and B.I.S standards and also observations and recommendations made by the High Level Committee. In respect of other Departments, MORTH data is adopted for Roads & Bridges, where higher capacity machinery can be deployed and MORD data is adopted for Roads & Bridges in Rural areas. For other works data as per MORTH, MORD, and C.P.W.D. etc., is adopted. The comparative estimates have been prepared by the T.R. &B Dept. , Engineering-in-Chief (Irrigation) and MA & UD Department for various types of works of a magnitude of Rs.15-20 crores, based upon the earlier data and the newly revised and proposed data .

4. After detailed deliberations and discussion on the above issue, the Govt. accept the recommendations of Board of Chief Engineers and High level Committee and accordingly issue the orders for adoption of the Revised and Updated Standard data in all Engineering/ Public works Department and other organisations in four parts considering nature of work, location of work and magnitude of work as indicated below. The four parts of Standard Data

booklets are forwarded to Engineer-in-Chief (AW), who in turn will publish the authenticated version and circulate a copy to all works Departments.

1. PART - I : Irrigation & Command Area Development.
2. PART- II : Roads & Bridges.
3. PART-III : Buildings
4. PART-IV : Drinking Water Supply Schemes.

5. The Revised Data now approved is to be adopted by all Engineering Departments/ all Public Works Department and other organisations, duly superseding all the earlier orders issued on the subject.

6. These orders shall come into force from the date of issue.

7. This order issues with the concurrence of Finance Department vide their U.O.No.5532/520/Exp.PW.I Dept/08, dated 13-5-2008.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

RAJIV RANJAN MISHRA  
SECRETARY TO GOVERNMENT

To

All the Engineer-in-Chief of Irrigation & CAD Department.  
All the Chief Engineers of Irrigation & CAD Department.  
The Commissioner, Commissioner of Tenders,  
The Engineer-in-Chief, PR & RD Department, Hyderabad.  
The Engineer-in-Chief (R&B) Admn., Dept., Hyderabad.  
The Engineer-in-Chief (PH) Hyderabad.

Copy to:

All the Collectors & Dist. Magistrate of Andhra Pradesh  
All Sections in Irrgn. & CAD (PW/Irrgn.) Dept.  
The Accountant General Andhra Pradesh Hyderabad.  
The G.A. (Cabinet) Dept. w.r.t. U.O.No.79/2009, dated 17-2-2009.  
The G.A. (GPM&AR) Dept.  
The Finance (W&P) Dept.  
The P.S. to Ministers (PR & RD/ MA & UD/ T.R. & B / Housing )  
The P.S. to Prl. Secy. (SKJ)/ P.S. to Secretary (AD)/ P.S. to Secretary (RRM)  
The P.S. to Prl. Secretary, Housing/P.S. to Prl. Secy, M.A. & U.D. / P.S. to  
Secretary, T.R.& B / P.S. to Prl. Secretary, PR & RD./P.S. to Secretary ,  
Housing.  
All the Advisors of Irrgn. & CAD Dept. (Telangana)  
SF/SC.

// FORWARDED:::BY ORDER//

J. Narasimha Rao  
SECTION OFFICER

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## **A.P. REVISED STANDARD DATA**

### **PREAMBLE**

The AP Revised Standard data for various construction items has come into existence as per the Government orders G.O.Ms.No.49, I & CAD (PW: Reforms) Dept., dt:2-3-2009.

The background for adoption of A.P. Revised Standard Data is:

1. Government, in GO 7326 (GAD-GPM& AR), Dated 26-10-2005, has observed that the age old "Standard data" requires revision and updation with reference to the latest machinery and contemporary practices and has constituted a **High Level Committee** to advise on updating and revision of standard data and schedule of rates. The work has been taken up by CGG and SPIU-irrigation. The secretary (Irrigation) is the member- convener of the committee

Accordingly the data has been revised adopting the procedures and guidelines given by *CWC, Report on "committee on cost control of river valley Projects, BIS specifications, NHAI, MORTH, MORD, CPWD and Government of Karnataka and revised data* and formulated schedule of rates for all infrastructure Departments (I&CAD, R&B, PR and PH). The team of senior engineers interacted with the S.R Committee of Karnataka on implementation and improvements needed. For irrigation works, the data pattern as adopted by Karnataka has been considered and for other Departments, the data adopted by MORTH,MORD and NHAI etc. is adopted

2. Sequence followed in revision of standard data is,
  - (a) The first step is the revision and formulation of standard data for each work component.
  - (b) The second step is to work out the details of inputs. This enables to generate the unit work item rates, by incorporating the use rates of machinery, materials, labour charges and other supplementary parameters.
  - (c) The third step is to develop software tool to generate unit rate using the software (completed for irrigation works by the SPI Unit of Irrigation)

3. The Detailed draft data was communicated to all the HOD's and interacted through many seminars and discussions and incorporated the relevant features. The Board of chief engineers in their meetings have recommended for acceptance to the data formulated and schedule of rates. It was proposed to examine the recommendations on important parameters, to refer to high level committee, for their specific recommendations for adoption, as they are common to all departments.

The committee made in depth study on the methodology and systems followed by the reputed National organizations and other States and made detailed deliberations with HOD's and representatives of Builders Association of India and made recommendations to the Government, on adoption of such parameters in A.P.

4. The Chief Secretary held a detailed discussions on 04-07-2007,with the Secretaries of the Departments and Heads of Departments.

## **GUIDELINES**

**1)** The Revised Standard Data is formulated under four Parts, which are applicable to all the Engineering Departments and other Organisations.

PART -1: Irrigation& CAD (Dam and Allied Works, Canals and Allied Works, Canal C.D. Works, Tunnels and Allied Works, Preliminary and Maintenance Works, Hydraulic Gates and allied works and Leads and Lifts applicable to all Departments

PART -2: Roads and Bridges

PART -3: Buildings including Electrical Works

PART -4: Drinking Water Supply and Public Health (ONLY FOR WORKS  
DONE BY MANUAL MEANS)

**2) Brief description of item of work. :**

Brief description of the item of work to cover all important aspects of the work included in the in the Data . On reading the item description, the user should be in a position to assess the various cost components involved in the work.

**3) Data for assessing quantities:**

The data reflects various assessments / assumptions made in arriving at the quantities of materials, machinery, labour and other in-puts. In case of plants and equipment the output of main plant is worked out and the requirement of all other inputs and assessed to match the output of the main plant. Cycle time of operations is the criteria for assessing the output of equipment. Generally the equipment manufacturers furnish the output of machinery under ideal conditions of working. Suitable job and management efficiency factors are considered while working out the average output of machinery under field conditions. In case of combination of machinery and manpower, the assessment of manpower shall match the output of machinery.

Though cycle time of operations is the criteria for hourly / daily out-put of machinery work-force ,the actual progress of work depends on several other factors such as power interruptions, minor break-downs, time for meals and other needs of work-force, stray rains etc. Therefore, it is the general practice to consider 50 minutes as the actual working time per hour for working out the hourly / daily out-put of machinery / work-force. CWC / BIS guide-lines stipulate the actual working hours for the purpose of

equipment planning and utilisation. The daily out-put is computed duly considering the actual available working time and feed back from the field.

- For gate and hoist works, it is the general practice to specify the quantity of work in terms of number of sets of embedded parts / gates. The requirement of machinery and work-force for cutting, bending, fabrication, erection, painting etc., is assessed to commensurate with the task involved.
- The data for gates and E.M. Parts is arrived per Ton quantity.
- The data for Hoists and Gantry Cranes is worked out on the basis of capacity in tonnage

**4) The lead and lift charges** provided in PART-I (B) are generally applicable **and** common to all Departments. Any item is not covered in this part, the rates as provided in the data of the relevant works may be adopted in preparation of estimates.

**5) The basic material** inputs needed for all works are listed and incorporated in the data. The requirements are analyzed and the specifications adopted shall confirm to Standards published by the BIS.

- The labour and material rates will be communicated by the Board of Chief engineers.
- Unless otherwise specified, all material rates shall be inclusive of all taxes, duties, levies, transportation and handling costs up to project area.
- For sand, gravel , murum, stones , course aggregates etc, the rates are to be fixed for delivery at Quarry, adding loading charges by machinery / manual means and idle hire charges of machinery (as per table under chapter "conveyance or lead and lift charges"), as applicable.
- For steel, Cement, AC sheets, GI sheets, Hume pipes, wood and stone slabs, the rates are to be taken prevailing at major commercial centre near project area. The lead charges, as applicable are to be added in preparing estimates.
- The specifications of the aggregates for sizes and gradation and its adoption shall be as per IS 383.

**6) The labour** component in the data is mentioned for unit work.

- No allowance towards labour importation and labour amenities added extra as they are included in the recommended overheads.
- On Labour Component: Certain additional allowances are added extra to the wages of labour (i.e. only on labour component in the work item) in the form of percentage, as recommended by the Government/Board of chief engineers due to statutory and other provisions.
- However, If more than one area allowances, such as those for (1) Municipalities (2) Agency / Tribal areas (3) Industrial areas are applicable for a particular situation, only the maximum out of the allowable percentages is to be allowed.

**7) HIRE CHARGES OF MACHINERY:** The machinery and /or group of machinery

for items of works and their output has been worked based on the availability of machinery generally in the market and working in the field successfully, duly considering cycle time, idle time, operator efficiency, type of work etc.

- The hire charge of a machinery / equipment is worked out based on the guidelines published by CWC and BIS codes.
- For the other machinery not covered by the list, the R&B and other users may adopt hire charges as recommended by the MORTH.

**8) Lead Charges**

- The high level committee has recommended to adopt, for conveyance by head load, a minimum lead of 50 meters and additional lead up to 150 meters in the intervals of 50 meters. Beyond 150 meters lead, only machinery rates are to be adopted.
- The basic work item rates provided in the Standard Data & Schedule of rates include 50 m or 1 km as initial lead and no lead charges shall be allowed where the source of material is within the initial lead specified in item rate. Additional lead charges shall be allowed for the lead exceeding initial lead specified in the

item rate. The Guidelines may be followed regarding adding Lead charges as given against each chapter.

- The lead charges per unit quantity for conveyance of the materials are worked out, and included in the schedule of rates in increment of 50 m for head load and in increment of 1 km for mechanical mode.
- The rates for lead charges by head load up to 150 meters and by machinery up to 5 km, shall be cumulative and inclusive of lead charges for preceding lead. For lead beyond 5 km, the lead charges shall be worked out on per km basis.

## **9) Loading and Unloading charges for Materials**

The following features are considered:

1. Loading and unloading charges are not payable for conveyance by head load.
2. Loading and unloading charges are not payable for conveyance by mechanical means, for disposal of excavated material unless specified.
3. The rates for unloading of materials except earth, sand, gravel, coarse aggregate, rubble, size stone and cut stone, are inclusive of stacking wherever applicable.

## **10) LIFT CHARGES :**

- The data includes initial lift charges of 3 meters ,for materials conveyance by head load, Additional leads in the interval of 1.0 meters are worked out, as additional labour input and incorporated in the chapter on "Lead and lifts".
- Where the conveyance / lifting of material is done by mechanical means, lift charges shall not be considered, as the cycle time of operation of the machine includes lifts involved.
- The data and rates for lift charges is cumulative and are inclusive of rates for preceding lifts also.

## **11) Wastage of Materials**

- I) Cement:** No wastage allowance is recommended towards the quantity of cement used in works, as the wastage is already included in the input and in major works , bulk quantities are used.

**II) steel:** The wastage of steel @ 2.5% is allowed for gates and allied structures. For RCC works the wastage is @2.5% for the reinforcement rods above 36mm dia. and @ 5% for rods below 36mm dia. including overlaps, if they are not welded. If welding is adopted for the reinforcement rods even for below 36mm dia, 2.5% of wastage is only recommended.

**12) Provision for rate for water:-**

The Committee has recommended not to consider the water charges in the Irrigation Project works. But, it may be considered in specific cases as per the site conditions.

**13)** In respect of RCC works the rate for cement concrete for 1 cum is worked separately for all grades based on Indian Standards. The rate for ton is calculated separately and to be added separately in the estimates of RCC works as a separate item.

**14) Soil classification:** The Committee recommended to allow uniform classification of soils for all Departments and data is worked out accordingly.

1. all soils
2. Marshy soil
3. ordinary rock ( not requiring blasting).
4. hard rock
  - a. hard rock (requiring blasting)
  - b. hard rock (controlled blasting)
  - c. removable by chiseling(blasting prohibited)

**15) Use of Super Plasticizers and Admixtures:**

Concrete admixtures such as Air-Entraining Agent ( AEA ) / Water reducing agent can be used advantageously for better quality concrete. The high level committee has recommended to adopt for super plasticizers and admixtures at 0.4% on cement for concrete work as per MORTH standards for batching plants.

**16) Contractors overheads, profit and other provisions:**

- High Level Committee has recommended adding 14% towards contractor overheads and profit including labour importation and amenities etc., as given below which includes various items recommended in MORTH.
- The provision for VAT at 5% or as fixed by the Government from time to time should be made separately in Part-B of the estimate. In the agreements it should be mentioned that it will be reimbursed as per actual. The provisions allowed in G.O.Ms.No.94, I&CAD, dt: 01.07.03, need not be added separately for the items covered in the contractor overhead charges.
- The provision for labour Cess at 1% or as fixed by the Government from time to time should be made separately in Part-B of the estimate.

**The overhead charges include the following elements:**

- Site accommodation, setting up plant, access road, water supply, electricity and general site arrangements.
- Office furniture, equipment and communications
- Expenditure on:
  - Corporate office of contractor
  - site supervision
  - Documentation and "as built" drawings
  - Mobilisation/ de-mobilisation of resources
  - Labour camps with minimum amenities and transportation to work sites.
  - Light vehicles for site supervision including administrative and managerial requirements.
  - Laboratory equipment and quality control including field and laboratory testing.
  - Minor T & P and survey instruments and setting outworks, including verification of line, dimensions, trial pits and bore holes, where required.
  - Watch and ward
  - Traffic management during construction
  - Expenditure on safeguarding environment
  - Sundries
  - Financing Expenditure
  - Sales/ Turn overtax

- Work Insurance/ compensation

#### **17) EXCISE DUTY ON SUPPLIES :**

In respect of gates, hoists and allied works, excise duty is applicable on the value of fabricated components supplied to site. Excise duty is not applicable on erection charges. Further, the excise duty shall not be considered in the rate analysis on material component, as basic material rates are inclusive of excise duty.

Therefore, excise duty is considered in the rate analysis only on machinery and labour components required for fabrication of gates and hoists at the central fabrication yard. It is difficult to determine the machinery and labour components separately for fabrication and erection.

For the purpose of computation of excise duty to be included in the rate analysis the machinery and labour components may apportioned at 75 % for central fabrication yard and 25 % for field erection and commissioning. Therefore, 75 % of the machinery and labour components may be considered for assessing the extent of excise duty to be added in the rate analysis.

#### **18) DEWATERING & DESILTING:**

The High level committee considering the local conditions of rainfall / seepage has recommended towards de-watering and de-silting at 3 percent on the relevant work component for which dewatering is required.

It is also proposed as per CWC guidelines, to keep a condition in the agreements shall be incorporated, to fix a ceiling of 5% in extreme cases, with the specific approval of chief engineer/Government.

#### **19) Computerization Of Data :**

- A software program is developed by the SPI Unit(Irrigation), which facilitates automatic changes and generation of unit rates, based on basic input rates of Labour, materials and capital cost of machinery.
  - A soft ware tool is also developed for auto preparation of estimates based on input quantities.
  - Other Departments are also advised to develop such program.
- 20)** For each chapter separate additional details are incorporated for clarity.

## **USER GUIDELINES OF REVISED STANDARD DATA**

- 1. Please select the item of work, as given in Index Code, and view the relevant data.**
  
- 2. The common data items like, lead, lift, conveyance and manual excavation (without involving contracting agencies ) is applicable to all Departments (Volume-1)**
  
- 3. The departments have to adopt the relevant data from other Departments, if such works are executed by them.**
  
- 4. The unit rate /hire charges, of machinery not covered in the Irrigation data, the MORTH data may be taken with the approval of Board of Chief Engineers.**
  
- 5. For “Drinking water Supply works”(PART-IV), the data incorporated is generally applicable only for manual means of execution. The rates deploying machinery have to be worked out by the Board of Chief engineers and approved for adoption.**

## **5. ROLE OF CENTRAL COMPETENT AGENCY FOR SCHEDULE OF RATES**

### **( BOARD OF CHIEF ENGINEERS)**

a) The Board of Chief Engineers under the chairmanship of Engineer-in-chief, (administration) I&CAD Department is the competent authority to finalise and recommend the Schedule of Rates applicable for all engineering Departments. The board has to assess and incorporate only the three basic inputs required to generate unit work item rates as below.

#### **Basic rates of labour:**

Wages of labour commonly required in execution of works has to be arrived and incorporated in the schedule of rates (**Basic Input Of Labour Wages**), without adding extra towards area allowances (like municipality allowance, tribal area and ghat road allowances etc, which shall be added to the rates where applicable in the form of separate percentage as explained in the preceding paras. The rates shall be the prevailing daily rates in the State and shall not be less than the minimum wages fixed by the Government from time to time.

#### **Materials rates:**

The basic input material rates common to all departmental works are listed out and incorporated (in the chapter "Basic inputs") The material specifications adopted shall conform to Standards published by the BIS.

The Prevailing market rates for all basic input materials shall be obtained from the major commercial centers near the project areas. Average of the rates, ignoring freak rates, shall be reckoned as the prevailing market rate.

Unless otherwise specified, all material rates shall be inclusive of all taxes, duties, levies, royalty, transportation and handling costs up to project area.

For sand, gravel, murram, stones, aggregates etc, the rates are for delivery at Quarry including loading charges and idle hire charges. For steel, Cement, AC sheets,

GI sheets, Hume pipes, wood and stone slabs, the rates prevailing at major commercial centre near project area has to be adopted.

**Use rate of machinery:**

The third parameter for incorporation in the Basic Inputs, is the use rate of machinery. To arrive at the use rate of machinery, the inputs to be incorporated are

- The list and capital cost of machinery required to be used in the construction activity, The rate has to be obtained from major manufacturers and outlet sources and the rate shall be the current market price inclusive of all taxes, duties and freight charges.
  - The prevailing fuel charges of petrol and diesel are ascertained and average rate adopted
  - Borrow rate of interest as fixed by the Government/competent authority be indicated.
  - For the other machinery not covered by the list, the R&B and other users may adopt hire charges as recommended by the MORTH
- b) The Chairman, Board of Chief Engineers or competent authority appointed by the Government, based on the approved basic inputs, load the above three basic parameters in the software program. The unit rate of all works including hire charges of all machinery will be generated automatically for adoption.

**He shall communicate the uniform Schedule of rates arrived from Standard Data, to all users for uniform and direct adoption in all infrastructure Departments, as applicable**

**WORK ITEM RATES  
FOR THE YEAR -2016-17**

\* Add Leads and Lifts, Area Allowance and VAT as applicable in the estimate  
 \*\* Area Allowance includes profit component also  
 \*\*\* Unit Rates arrived without Seigniorage Charges

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
<b>Chapter I</b>					
<b>IRR-DAW</b>		<b>DAM AND ALLIED WORKS</b>			
<b>IRR-DAW-1</b>		<b>EXCAVATION &amp; FOUNDATION TREATMENT WORKS:</b>			
IRR-DAW-1-1	1	Excavation for foundation in all kinds of soil including boulders upto 0.30 m diameter for dam, spillway, intake structure and other appurtenant works and placing the excavated soil neatly in dump area or disposing off the same as directed etc., complete with initial lead upto 1 km and all lifts.	cum	121.30	
		Labour Component (including contractor's profit and Overheads)	cum	26.10	
IRR-DAW-1-2	2	Excavation for foundation in ordinary rock (including HDR) without blasting including boulders above 0.3 m upto 0.6 m dia for dam, spillway, intake structure and other appurtenant works and placing the excavated material neatly in dump area or disposing off the same as directed etc., complete with initial lead upto 1 km and all lifts.	cum	160.60	
		Labour Component (including contractor's profit and Overheads)	cum	34.00	
IRR-DAW-1-3	3	Excavation for foundation in hard rock (including F&F) requiring blasting including boulders above 0.6 m upto 1.2 m dia. for dam, spillway, intake structure and other appurtenant works and placing the excavated material neatly in dump area or disposing off the same as directed etc., complete with initial lead upto 1 km and all lifts.	cum	239.20	
		Labour Component (including contractor's profit and Overheads)	cum	60.20	
IRR-DAW-1-3-A New Item2015-16-1	4	Excavation for foundation in hard rock (including F&F rock) including boulders above 0.6 m upto 1.2 m dia. by controlled blasting and controlling fly rock by muffling arrangements for dam, spillway, intake structure and other appurtenant works and other open foundation works and placing the excavated material neatly in dump area or disposing off the same as directed etc., complete with initial lead upto 1 km and all leads	cum	366.60	
		Labour Component (including contractor's profit and Overheads)	cum	71.10	
IRR-DAW-1-4(a)	5	Excavation for foundation in hard rock of all toughness by blasting including boulders above 1.2 m dia. for dam, spillway, intake structure and other appurtenant works and placing the excavated rock neatly in dump area or stack yard including levelling as directed etc., complete with initial lead upto 1 km and all lifts.	cum	422.90	
		Labour Component (including contractor's profit and Overheads)	cum	116.20	
IRR-DAW-1-5(b)	6	Excavation for foundation in hard rock of all toughness including boulders above 1.2 m dia. by controlled blasting method and controlling fly-rock by muffling arrangements for dam, spillway, intake structure and other appurtenant structures etc., including placing and levelling the excavated rock neatly in dump area or other place as directed etc., complete with lead upto upto 1 km and all lifts.	cum	665.40	
		Labour Component (including contractor's profit and Overheads)	cum	127.90	
IRR-DAW-1-6(c)	7	Excavation for foundation in hard rock of all toughness including boulders above 1.2 m dia. by line drilling and smooth blasting and controlling fly-rock by muffling arrangements for dam, spillway, intake structure and other appurtenant structures etc., including dressing sides and bed to required level / profile, placing and levelling the excavated rock neatly in dump area or other place as directed etc., complete with lead upto 1 km and all lifts.  i ) For the purpose of payment 1 m width of excavation along boundary of excavation shall be treated as excavation by line drilling and smooth blasting and remaining portion shall be treated as excavation by normal / controlled blasting as the case may be. ii ) The rate includes controlling fly-rock wherever required. iii ) The rate under this item shall be paid only on ascertaining that the excavated face has come off neatly as per specifications or atleast 50 percent of smooth blast holes are visible for inspection and are spaced at specified interval. iv ) In case, where the above criteria is not fulfilled payment shall be restricted to rate provided for excavation by normal blasting or controlled blasting as the case may be.	cum	898.30	
		Labour Component (including contractor's profit and Overheads)	cum	335.70	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-DAW-1-7	8	Preparing <b>foundation bed for masonry or concrete</b> by benching, stepping, removing all loose material by wedging / chiselling and disposing off the same as directed and cleaning the surface with air and water jet etc., complete <b>with initial lead upto 50 m and all lifts.</b>	sqm	36.80	
		Labour Component (including contractor's profit and Overheads)			30.90
IRR-DAW-1-8	9	Preparing <b>foundation bed for cut-off trench filling</b> in rock portion by removing all loose materials by wedging / chiselling and disposing off the same as directed etc., complete <b>with initial lead upto 50 m and all lifts.</b>	sqm	26.10	
		Labour Component (including contractor's profit and Overheads)			26.10
IRR-DAW-1-9	10	<b>Drilling 45 to 50 mm dia holes</b> vertical or inclined upto 10 degrees to vertical in <b>rock /masonry / concrete by percussion drilling</b> using waggon drill or any other suitable equipment including cost of all materials, machinery, labour, redrilling through partially set grout wherever required etc., complete <b>for drilling upto 6 m depth from surface.</b>	Rm	195.30	
		The item rate for drilling through rock / masonry / concrete includes redrilling through partially set grout, if any, in the portion of the hole drilled and grouted.			
		Beyond 6 m upto 12 m from surface :			Rm 214.80
		Beyond 12 m upto 18 m from surface :			Rm 236.30
		Beyond 18 m upto 24 m from surface			Rm 259.90
		Beyond 24 m upto 30 m from surface			Rm 285.90
		Beyond 30 m upto 36 m from surface			Rm 314.50
		Beyond 36 m upto 42 m from surface			Rm 346.00
IRR-DAW-1-10	11	<b>Flushing grout holes of all sizes</b> with water and air jets alternatively for an average period of <b>30 minutes</b> including water intake observations after flushing, cost of all materials, machinery, labour etc., complete.	Rm	47.40	
		Labour Component (including contractor's profit and Overheads)			20.00
IRR-DAW-1-11(a)	12	<b>Consolidation grouting with neat cement grout mix</b> of suitable consistency under specified pressure as directed in drilled holes by stage grouting method including cost of all materials, machinery, labour, redrilling if necessary etc., complete <b>with initial lead upto 1 km and all lifts.</b>	tonne	10229.10	
		Labour Component (including contractor's profit and Overheads)			3219.50
IRR-DAW-1-12(b)	13	<b>Curtain grouting with neat cement grout mix</b> of suitable consistency under specified pressure as directed in drilled holes by stage grouting method including cost of all materials, machinery, labour, redrilling if necessary etc., complete <b>with initial lead upto 1 km and all lifts.</b>	tonne	11315.20	
		Labour Component (including contractor's profit and Overheads)			4150.10
IRR-DAW-1-13	14	Providing and fixing <b>25 mm dia 3 m long cold twisted deformed steel dowel bars</b> with one end driven into 45 to 50 mm diameter 1.50 m deep hole drilled in bed rock and other end provided with L-bend for embedding in concrete / masonry of over flow / non-over flow blocks and other appertaining works including cost of drilling and cleaning hole, filling hole with <b>cement mortar 1 : 1 proportion</b> , driving anchor rod, cost of all materials, machinery, labour etc., complete <b>with initial lead upto 1 km and all lifts.</b>	Each	841.00	
		Labour Component (including contractor's profit and Overheads)			119.20
IRR-DAW-1-14	15	<b>Providing and fixing 25 mm dia. 2.75 m long ribbed steel anchor rods</b> with one end split and driven firmly using steel wedge into 1.25 m deep 45 to 50 mm dia. hole drilled in bed rock and other end provided with L- bend for embedding in concrete / masonry for spillway and appurtenant works including drilling and cleaning hole, filling hole with thick cement slurry, driving anchor rod, cost of all materials, machinery, labour, steel wedge etc., complete <b>with initial lead upto 1 km and all lifts.</b>	Each	780.50	
		Labour Component (including contractor's profit and Overheads)			134.90
IRR-DAW-2		<b>REINFORCEMENT &amp; CEMENT CONCRETE WORKS :</b>			
IRR-DAW-2-1A	16	Providing, fabricating and placing in position <b>reinforcement steel for RCC, below 36 dia rods</b> overlaps and wastages wherever required, tying with 1.25 mm diameter soft annealed steel wire, including cost of all materials, machinery, labour etc., complete <b>with initial lead upto 1 km and all lifts.</b>	tonne	45332.18	
		Labour Component (including contractor's profit and Overheads)			3981.10

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-DAW-2-1B	17	Providing, fabricating and placing in position <b>reinforcement steel for RCC above 36 dia with welding</b> and wastage at 2.5%, tying with 1.25 mm diameter soft annealed steel wire, including cost of all materials, machinery, labour etc., complete <b>with initial lead upto 1 km and all lifts.</b>	tonne	46991.86	
		Labour Component (including contractor's profit and Overheads)	tonne		5245.00
IRR-DAW-2-2	18	Providing and laying <b>insitu vibrated M-15</b> ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>80 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc.,complete <b>for plain concrete works</b> with <b>initial lead upto 1 km and all lifts.</b> ( Cement content : 250 kg / cum with use of super plasticiser equal to 0.4% of cement content, CA : 0.98 cum, Blending Ratio of CA -- 40:30:20:10, FA : 0.35 cum ))	cum	3668.40	
		Labour Component (including contractor's profit and Overheads)	cum		187.40
IRR-DAW-2-2A (new Item1 2010-11)	19	Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>80 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc.,complete <b>for plain concrete works</b> with <b>initial lead upto 1 km and all lifts.</b> ( Cement content : 300 kg / cum with use of super plasticiser equal to 0.4% of cement content, CA : 0.90 cum, Blending Ratio of CA -- 40:30:20:10, FA : 0.4 cum ))	cum	3925.60	
		Labour Component (including contractor's profit and Overheads)	cum		187.40
IRR-DAW-2-3	20	Providing and laying <b>insitu vibrated M-10</b> ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using <b>80 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc.,complete <b>for plain concrete works</b> with <b>initial lead upto 1 km and all lifts.</b> ( Cement content : 220 kg / cum with use of super plasticiser, CA: 0.98 cum, Blending Ratio of CA -- 40:30:20:10, FA: 0.37 cum )	cum.	3463.50	
		Labour Component (including contractor's profit and Overheads)	cum.		187.40
IRR-DAW-2-4	21	Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., <b>complete for RCC works</b> of gallery, sluice, spillway crest, spillway d / s face, energy dissipating structures, training walls, piers, abutments and such other locations with <b>initial lead upto 1 km and all lifts.</b> ( Cement content : 310 kg / cum with use of super plasticiser, CA : 0.90 cum, blending ratio of CA--50:30:20, FA : 0.40 cum )	cum.	4902.60	
		Labour Component (including contractor's profit and Overheads)	cum.		372.10
IRR-DAW-2-4A (new Item2 2010-11)	22	Providing and laying <b>insitu vibrated M-25</b> ( 28 days cube compressive strength not less than 25 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., <b>complete for RCC works</b> of gallery, sluice, spillway crest, spillway d / s face, energy dissipating structures, training walls, piers, abutments and such other locations with <b>initial lead upto 1 km and all lifts.</b> ( Cement content : 360 kg / cum with use of super plasticiser,CA : 0.90 cum, blending ratio of CA--50:30:20, FA : 0.40 cum )	cum.	5249.10	
		Labour Component (including contractor's profit and Overheads)	cum.		372.10
IRR-DAW-2-4B (new Item3 2010-11)	23	Providing and laying <b>insitu vibrated M-25</b> ( 28 days cube compressive strength not less than 25 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., <b>complete for RCC works</b> of gallery, sluice, spillway crest, spillway d / s face, energy dissipating structures, training walls, piers, abutments and such other locations with <b>initial lead upto 1 km and all lifts.</b> ( Cement content : 380 kg / cum with use of super plasticiser,CA : 0.90 cum, blending ratio of CA-65:35, FA : 0.40 cum )	cum.	5361.10	
		Labour Component (including contractor's profit and Overheads)	cum.		372.10

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-DAW-2-5	24	Providing and laying <b>insitu vibrated M-15</b> ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for plain concrete works with initial lead upto 1 km and all lifts. ( Cement content : 260 kg /cum with use of super plasticiser, CA : 0.90 cum, Blending Ratio of CA -- 50:30:20, FA : 0.40 cum )	cum.	4597.40	
		Labour Component (including contractor's profit and Overheads)	cum.		1341.20
IRR-DAW-2-6	25	Providing and laying <b>insitu vibrated M-15</b> ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates with placing and <b>sinking plums of size 150 to 80 mm upto 15 percent</b> for gravity type structures including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 1 km and all lifts. ( Cement content : 260 kg / cum of concrete with use of plums and super plasticiser,, CA : 0.77 cum, Blending Ratio of CA : 50:30:20,FA : 0.34 cum ,plums of size 150 to 80 mm : 0.25 cum )	cum.	4485.70	
		Labour Component (including contractor's profit and Overheads)	cum.		1310.20
IRR-DAW-2-7	26	Providing and laying <b>insitu vibrated M-10</b> ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for plain concrete works with initial lead upto 1 km and all lifts. ( Cement content 220 kg /cum with use of super plasticiser,CA : 0.90 cum, Blending Ratio of CA : 50:30:20, FA : 0.40 cum )	cum.	4207.50	
		Labour Component (including contractor's profit and Overheads)	cum.		1214.40
IRR-DAW-2-8	27	Providing and laying <b>insitu vibrated M-15</b> ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for plain concrete works with initial lead upto 1 km and all lifts. ( Cement content : 280 kg /cum with use of super plasticiser,CA : 0.80 cum, Blending Ratio of CA -- 65:35, FA : 0.44 cum )	cum.	4470.60	
		Labour Component (including contractor's profit and Overheads)	cum.		1243.60
IRR-DAW-2-9	28	Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for RCC works of spillway bridge, blockouts and such other similar structures with congested reinforcement with initial lead upto 1 km and all lifts. ( Cement content : 330 kg / cum with use of super plasticiser, CA : 0.80 cum, Blending Ratio of CA -- 65:35, FA : 0.44 cum ).	cum.	6262.70	
		Labour Component (including contractor's profit and Overheads)	cum.		1760.90
IRR-DAW-2-10	29	Providing and forming <b>porous concrete body drain</b> of size 68.5 x 68.5 cm with 23 cm diameter central hole using cement and <b>20 mm down</b> approved, clean, hard, graded coarse aggregates in <b>1 : 3.50</b> proportion by volume including cost of all materials, machinery, labour, formwork, curing etc., complete with initial lead upto 1 km and all lifts.(M15 Cement content : 400kg/cum, CA : 1cum, Blending Ratio of CA -- 65:35)	Rm	2470.70	
		Labour Component (including contractor's profit and Overheads)	Rm		604.40

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-DAW-2-11(a)	30	Providing and laying insitu <b>vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for <b>RCC solid parapet</b> consisting of 35 cm x 20 cm kerb, 35 cm x 35 cm x 1 m pillars spaced approximately at 3.35 m c / c, 12.5 cm thick wall 80 cm height with 12.5 cm thick and 35 cm wide coping slab for wall and 12.5 cm thick 40 cm x 40 cm coping for pillars with top edges of kerb and coping chamfered / rounded as directed etc., complete ( <b>excluding cost of providing and placing reinforcement steel and gate</b> ) with initial lead upto 1 km and all lifts. ( Cement content 350 kg / cum with use of super plasticiser( 0.4% by wt.of cement), CA : 0.80 cum, Blending Ratio of CA--65:35, FA : 0.44 cum)	Rm	2328.30	
		Labour Component (including contractor's profit and Overheads)	Rm	749.70	
IRR-DAW-2-12(b)	31	Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for <b>RCC ornamental parapet</b> consisting of 35 cm x 20 cm kerb, 35 cm x 35 cm x 1 m pillars spaced approximately at 3.5 m apart, 20 cm x 15 cm posts 80 cm height approximately 30 cm c / c with 12.5 cm thick and 35 cm wide coping slab for posts and pillars with top edges of kerb and coping chamfered or rounded as directed etc., complete ( <b>excluding cost of providing and placing reinforcement steel and gate</b> ) with initial lead upto 1 km and all lifts. ( Cement content : 350 kg / cum with use of super plasticiser, CA : 0.80 cum, Blending Ratio of CA--65:35, FA : 0.44 cum)	Rm	2376.30	
		Labour Component (including contractor's profit and Overheads)	Rm	795.50	
IRR-DAW-2-13	32	Providing and laying <b>insitu M- 25</b> ( 28 days cube compressive strength not less than 25 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates for wearing coat including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position in alternate panels, levelling, compacting, finishing, curing, packing joints with asphalt mortar etc., <b>complete with initial lead upto 1 km and all lifts.</b> ( Cement content : 380 kg / cum with use of super plasticiser, CA : 0.80 cum, Blending Ratio of CA--65:35, FA : 0.45 cum)	cum	5244.60	
		Labour Component (including contractor's profit and Overheads)	cum	1509.70	
IRR-DAW-2-14	33	Pre-cooling to control placement temperature of cement concrete in the range of 18 to 21 C at the concrete placement point by inundation of coarse aggregates and adding flaked ice as part of mixing water including cost of all materials, machinery, labour etc., <b>complete with all leads and lifts.</b>	cum	67.40	
		Labour Component (including contractor's profit and Overheads)	cum	14.30	
IRR-DAW-2-15	34	Conveying and fixing elastomeric bearing for spillway bridge including cleaning and preparing surface, mixing and applying adhesive, fixing bearing in correct position etc., including cost of all materials except bearings, machinery, labour etc., <b>complete with all leads and lifts.</b>	Each	374.20	
		Labour Component (including contractor's profit and Overheads)	Each	321.90	
IRR-DAW-2-16	35	Providing and constructing <b>150 mm dia hume pipe weep holes for concrete / masonry walls</b> including providing 20 x 20 x 20 cm size porous concrete block made of cement and <b>20 mm down</b> coarse aggregate in 1 : 4 proportion including 10 cm thick sand backing at the junction of wall and soil back fill, cost of all materials, machinery, labour etc., <b>complete with lead upto 1 km and all lifts.</b>	Rm	383.80	
		Labour Component (including contractor's profit and Overheads)	Rm	71.00	
IRR-DAW-2-17	36	Providing and <b>forming expansion joint for spillway bridge</b> consisting of 75 x 75 x 6 mm angles 2 numbers provided with 25 cm long 12 mm dia. anchors fixed to both flanges at 15 cm c / c and 140 x 6 mm plate welded on top of one of the angle including cost of all materials, machinery, labour, providing and fixing 38 mm thick joint filler board matching the thickness of wearing coat, painting etc., <b>complete with lead upto 1 km and all lifts.</b>	Rm	1708.30	
		Labour Component (including contractor's profit and Overheads)	Rm	332.10	
IRR_DAW-3		<b>MASONRY &amp; GUNITING WORKS :</b>			

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR_DAW-3-1	37	Providing and constructing <b>un-coursed rubble stone masonry</b> using approved stones in <b>cement mortar 1 : 3 proportion</b> including cost of all materials, machinery, labour, scaffolding, cleaning, packing mortar, wedging stone chips, curing etc., <b>complete with initial lead upto 1 km and all lifts.</b> ( Cement content : 190 kg/cum of masonry, rubble stones : 0.85 cum,stone chips : 0.15 cum/cum, FA : 0.4 cum)	cum	2810.00	
		Labour Component (including contractor's profit and Overheads)	cum		1138.50
IRR_DAW-3-2	38	Providing and constructing <b>un-coursed rubble stone masonry</b> using approved stones in <b>cement mortar 1 : 4 proportion</b> including cost of all materials, machinery, labour, scaffolding, cleaning, packing mortar, wedging stone chips, curing etc., <b>complete with initial lead upto 1 km and all lifts.</b> ( Cement content : 143 kg/cum of masonry, rubble stones : 0.85 cum, stone chips : 0.15 cum/cum, FA : 0.4 cum)	cum	2524.30	
		Labour Component (including contractor's profit and Overheads)	cum		1138.50
IRR_DAW-3-3	39	Providing and constructing <b>coursed rubble face stone masonry</b> using approved rubble stones in <b>cement mortar 1 : 3 proportion</b> including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, curing etc., <b>with initial lead upto 1 km and all lifts.</b> ( Thickness of the CR face assumed: 0.75 m, Cement content : 178 kg/cum of masonry, rubble stones : 0.35 cum, stone chips : 0.15 cum/cum, FA : 0.375 cum, CR stones 30 x 30 x 45 cm : 9.75 No, CR stones 30 x 30 x 60 cm : 3.25 No)	cum	3032.40	
		Labour Component (including contractor's profit and Overheads)	cum		1265.80
IRR_DAW-3-4	40	Providing and constructing <b>coursed rubble face stone masonry</b> using approved rubble stones in <b>cement mortar 1 : 4 proportion</b> including cost of all materials, machinery, labour, scaffolding,ramps, cleaning, packing mortar, wedging stone chips, curing etc., <b>with initial lead upto 1 km and all lifts.</b> ( Cement content : 134 kg/cum of masonry, rubble stones : 0.35 cum, stone chips : 0.15 cum/cum, FA : 0.375 cum, CR stones 30 x 30 x 45 cm : 9.75 No, CR stones 30 x 30 x 60 cm : 3.25 No)	cum	2764.90	
		Labour Component (including contractor's profit and Overheads)	cum		1265.80
IRR_DAW-3-5	41	Providing and constructing <b>chisel drafted and hammer dressed face stone masonry</b> with approved stones in <b>cement mortar 1 : 3 proportion</b> including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, curing etc., <b>complete with initial lead upto 1 km and all lifts.</b> ( Cement content : 167 kg/cum of masonry, rubble stones : 0.35 cum, stone chips : 0.15 cum/cum, FA : 0.35 cum, Dressed stones 30 x 30 x 45 cm : 10 No, Dressed stones 30 x 30 x 60 cm : 3.40 No)	cum	3253.50	
		Labour Component (including contractor's profit and Overheads)	cum		1548.90
IRR-DAW-3-6	42	Providing and constructing <b>chisel drafted and hammer dressed face stone masonry</b> with approved stones in <b>cement mortar 1 : 4 proportion</b> including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, curing etc., <b>complete with initial lead upto 1 km and all lifts.</b> ( Cement content : 125 kg/cum of masonry, rubble stones : 0.35 cum, stone chips : 0.15 cum/cum, FA : 0.35 cum, Dressed stones 30 x 30 x 45 cm : 10 No, Dressed stones 30 x 30 x 60 cm : 3.40 No)	cum	2998.20	
		Labour Component (including contractor's profit and Overheads)	cum		1548.90
IRR-DAW-3-7	43	Providing <b>cement mortar pointing to coursed rubble face stone masonry</b> 50 mm deep in <b>CM 1 : 2 proportion</b> by volume including raking and cleaning joints, pressing mortar into joints, cost of all materials, labour, scaffolding, finishing, curing etc., <b>complete with initial lead upto 1 km and all lifts.</b>	sqm	119.60	
		Labour Component (including contractor's profit and Overheads)	sqm		90.30
IRR-DAW-3-8	44	Providing <b>cement mortar pointing to coursed rubble face stone masonry</b> 50 mm deep in <b>CM 1 : 3 proportion</b> by volume including raking and cleaning joints, pressing mortar into joints, cost of all materials, labour, scaffolding, finishing, curing etc., <b>complete with initial lead upto 1 km and all lifts.</b>	sqm	111.50	
		Labour Component (including contractor's profit and Overheads)	sqm		90.30
IRR_DAW-4		<b>CONTRACTION JOINT WORKS:</b>			
IRR-DAW-4-1	45	Providing 25 mm thick <b>guniting to rock or masonry surface</b> in <b>cement mortar 1 : 3 proportion</b> by weight including cost of all materials, machinery, labour, raking-out and cleaning joints, scaffolding wherever required and all other ancillary operations etc., <b>complete with initial lead upto 1 km and all lifts.</b>	sqm	459.50	
		Labour Component (including contractor's profit and Overheads)	sqm		178.60

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-DAW-4-2	46	Providing and <b>constructing contraction joints</b> by fixing 16 SWG 60 cm wide annealed copper sheets in two lines with 8 mm dia steel dowel rods on either side at one metre interval, forming 125 x 125 mm size groove in between copper strips for filling asphalt including fixing 15 mm dia two legged G.I pipe with U - bend at bottom for circulation of steam at intervals and forming 150 mm dia formed drain behind water seals including cost of all materials, machinery, labour, filling asphalt, circulation of steam through pipes etc., <b>complete with all leads and lifts.</b>	Rm	15597.70	
		Labour Component (including contractor's profit and Overheads)	Rm		188.90
IRR-DAW-4-3	47	Providing and <b>constructing contraction joints</b> by fixing 310 mm wide central bulb type approved quality PVC water stop in two lines with 8 mm diameter steel dowel rods on either side at 1m interval, forming 125 x 125 mm size groove in between two water stops, providing & fixing 15 mm dia two legged G.I pipe with U-bend at bottom for circulation steam at interval, forming 150 mm diameter formed drain behind water seals including filling groove with asphalt, circulation of steam at intervals, cost of all materials, machinery, labour etc., <b>complete with all leads and lifts.</b>	Rm	2453.20	
		Labour Component (including contractor's profit and Overheads)	Rm		125.70
IRR-DAW-4-4	48	Providing and <b>constructing contraction joints</b> by fixing 16 SWG 60 cm wide annealed copper sheets in single line with 8 mm dia steel dowel rods on either side at 1 metre interval including cost of all materials, machinery, labour etc., complete with all leads and lifts.	Rm	7246.50	
		Labour Component (including contractor's profit and Overheads)	Rm		146.20
IRR-DAW-4-5	49	Providing and <b>constructing contraction joints</b> by fixing 23 cm wide central bulb type PVC water stop in single line supported by 10 mm dia steel dowel rods on either side at 1 metre interval including cost of all materials, machinery, labour, valcunising joints etc., <b>complete with all leads and lifts.</b>	Rm	222.00	
		Labour Component (including contractor's profit and Overheads)	Rm		117.30
IRR-DAW-5		<b>EARTH / ROCKFILL EMBANKMENT WORKS :</b>			
IRR-DAW-5-1	50	<b>Providing hearting embankment</b> using selected impervious soil from <b>approved borrow areas</b> in layers of <b>25 to 30 cm</b> before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transportation, spreading soil in layer of specified thickness, breaking clods, sectioning, watering, compacting to density control of <b>not less than 95 percent</b> or as stipulated using <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., <b>complete with initial lead upto 1 km and all lifts.</b>	cum	138.50	
		Labour Component (including contractor's profit and Overheads)	cum		22.20
IRR-DAW-5-2	51	<b>Providing cut-off trench filling</b> using <b>selected impervious soil</b> from <b>approved borrow areas</b> in layers of <b>25 to 30 cm</b> before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transportation, spreading soil to specified thickness, breaking clods, sectioning, watering, compacting to density control of <b>not less than 95 percent</b> using <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> as stipulated etc., <b>complete with initial lead upto 1 km and all lifts.</b>	cum	148.70	
		Labour Component (including contractor's profit and Overheads)	cum		24.10
IRR-DAW-5-3	52	<b>Providing casing embankment</b> using <b>semi-pervious soil</b> from <b>approved borrow areas</b> in layers of <b>25 to 30 cm</b> before compaction including cost of all materials, machinery, labour, all other operations such as excavation, sorting out, transportation, spreading soil in layers of specified thickness, breaking clods, sectioning, watering, compacting to density control of <b>not less than 95 percent</b> using <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> as stipulated etc., <b>complete with initial lead upto 1 km and all lifts.</b>	cum	149.20	
		Labour Component (including contractor's profit and Overheads)	cum		24.00
IRR-DAW-5-4	53	<b>Providing casing embankment</b> using <b>semi-pervious soil available from excavation</b> in layers of <b>25 to 30 cm</b> before compaction including cost of all materials, machinery, labour, all other operations such as re-excavation, sorting out, transportation, spreading in layers of specified thickness, breaking clods, sectioning, watering, compacting to specified density control of <b>not less than 95 percent</b> using <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> as stipulated etc., <b>complete with initial lead upto 1 km and all lifts.</b>	cum	125.40	
		Labour Component (including contractor's profit and Overheads)	cum		20.30

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-DAW-5-4-A (New Item1 - 2011-12)	54	Providing <b>casing embankment</b> using <b>semi-pervious soil available from excavation</b> in layers of <b>25 to 30 cm</b> before compaction including cost of all materials, machinery, labour, all other operations such as re-excavation, sorting out, transportation, spreading in layers of specified thickness, breaking clods, sectioning, watering, compacting to specified density control of <b>not less than 90 percent</b> using <b>2Tonne Roller</b> as stipulated etc., complete <b>with initial lead upto 1 km and all lifts. (For Maintenance Works)</b>	cum	85.80	
		Labour Component (including contractor's profit and Overheads)	cum	20.30	
IRR-DAW-5-5	55	Providing <b>homogeneous embankment</b> using soil <b>from approved borrow area</b> in layers of <b>25 to 30 cm</b> before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transportation, spreading soil in layer of specified thickness, breaking clods, sectioning, watering, compacting to density control of <b>not less than 95 percent</b> or as stipulated using <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., <b>complete with initial lead upto 1 km and all lifts.</b>	cum	140.90	
		Labour Component (including contractor's profit and Overheads)	cum	22.50	
IRR-DAW-5-6	56	Providing <b>embankment adjacent to masonry / concrete structures</b> and filling <b>trial pits</b> using <b>impervious soil from approved borrow areas</b> in layers of <b>10 to 15 cm</b> and compacting each layer to density control of <b>not less than 95 percent</b> using <b>pneumatic tampers or by vibratory earth rammers</b> including cost of all materials, machinery, labour, picking previous layer, spreading soil in layer, breaking clods, watering etc., complete <b>with initial lead upto 1 km and all lifts.</b>	cum	260.30	
		Labour Component (including contractor's profit and Overheads)	cum	123.20	
IRR-DAW-5-7	57	Providing and <b>constructing rockfill embankment</b> with 300 mm down graded stones and quarry spalls <b>from approved source</b> including cost of all materials, machinery, labour, spreading stones and spalls in layers, hand packing, wedging, finishing the surface to required slopes etc., <b>complete with initial lead upto 1 km and all lifts.</b>	cum	437.40	
		Labour Component (including contractor's profit and Overheads)	cum	111.70	
IRR-DAW-5-8	58	Providing and <b>constructing dry rubble rock-toe</b> using rubble and stone chips <b>from approved source</b> including cost of all materials, machinery, labour, hand packing rubble and stone chips, finishing top and sides to required slopes etc., <b>complete with initial lead upto 1 km and all lifts.</b>	cum	511.30	
		Labour Component (including contractor's profit and Overheads)	cum	211.60	
IRR-DAW-5-9	59	Providing and <b>constructing dry rubble rock-toe</b> with rubble and stone chips <b>from dump yard</b> including cost of all materials, machinery, labour, hand packing rubble and stone chips, finishing top and sides to required slopes etc., <b>complete with initial lead upto 1 km and all lifts.</b>  Note: Useful rubble and stone chips will be issued at dump yard at the issue rate for useful rubble /stone chips. Sorting out and breaking charges included in rate analysis.	cum	464.10	
		Labour Component (including contractor's profit and Overheads)	cum	147.00	
IRR-DAW-5-9-A (New Item4-2012-13)	60	Providing and <b>constructing Dry rock Pitching for Groynes</b> using <b>Un-Coursed rubble stone of size 300 mm thick</b> and Un-Coursed rubble stone chips from Quarry to site of work including cost of all materials, Machinery, Labour charge hand packing Un-Course rubble stone &chips to the designed profile <b>with all leads and lifts etc</b>	cum	677.40	
		Labour Component (including contractor's profit and Overheads)	cum	147.00	
IRR-DAW-5-10	61	Providing and <b>laying 30 cm diameter open jointed hume pipes with collars in rock-toe</b> for drainage including cost of all materials, machinery, labour etc., <b>complete with lead upto 1 km and all lifts.</b>	Rm	714.60	
		Labour Component (including contractor's profit and Overheads)	Rm	32.90	
IRR-DAW-6		<b>FILTER &amp; PITCHING WORKS :</b>			

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-DAW-6-1	62	Providing and <b>constructing 1.20 m internal diameter and average 3 m height RCC manhole</b> with 60 cm dia. top cover in M-15 grade cement concrete using <b>20 mm down graded</b> , clean, hard coarse aggregate, 20 cm thick for bed / sides / top slab / 1.5 m long cut-off wall and 7.5 cm thick for cover including providing 12 mm dia reinforcement bars at 30 cm c / c bothways for bed / sides / cut-off wall / top slab / rungs and 8 mm dia bars at 15 cm c / c bothways for cover, excavation for foundation, providing 30 cm dia hume pipe outlet, cost of all materials, machinery, labour, formwork, scaffolding, batching, mixing, laying, vibrating, finishing, curing etc., <b>complete with lead upto 1 km and all lifts.</b> (Cement content : 300 kg/cum , CA : 0.80 cum, Blending Ratioof CA -- 65:35,FA : 0.44 cum, superplasticizer (0.4% by wt. of cement)	Each	42855.70	
		Labour Component (including contractor's profit and Overheads)	Each	11180.90	
IRR-DAW-6-2	63	Providing and <b>constructing longitudinal and cross graded filter drains</b> using sand and 80-20 mm and 20 mm down graded aggregates <b>satisfying specified filter criteria</b> in layers as per specifications including cost of all materials, machinery, labour, laying to required slopes, compaction etc. complete <b>with initial lead upto 50 m and all lifts.</b>	cum	790.20	
		Labour Component (including contractor's profit and Overheads)	cum	156.20	
IRR-DAW-6-3	64	Providing and <b>constructing 1.40 m thick vertical or inclined graded filter media</b> consisting of <b>20 cm thick sand layers, 25 cm thick 20 mm down coarse aggregate layers</b> and 50 cm thick 80-20 mm coarse aggregate layer using approved materials satisfying specified filter criteria as per specifications including cost of all materials, machinery, labour, laying to required slope, compaction etc., <b>complete with initial lead upto 50 m and all lifts.</b>	cum	954.70	
		Labour Component (including contractor's profit and Overheads)	cum	156.20	
IRR-DAW-6-4	65	Providing and <b>constructing graded filter media below and behind rock-toe</b> consisting of <b>20 cm thick sand, 25 cm thick 20 - 4.75 mm and 40 cm thick 80 - 20 mm size graded coarse aggregates</b> satisfying filter criteria as per specifications including cost of all materials, labour, machinery, laying to required slope, compaction etc., <b>complete with initial lead upto 50 m and all lifts.</b>	cum	923.70	
		Labour Component (including contractor's profit and Overheads)	cum	140.30	
IRR-DAW-6-4-A (New Item2 2011-12)	66	Providing and <b>constructing graded filter media below and behind rock-toe</b> consisting of <b>30 cm thick, 80 - 20 mm size graded coarse aggregates</b> satisfying filter criteria as per specifications including cost of all materials, labour, machinery, laying to required slope, compaction etc., <b>complete with initial lead upto 50 m and all lifts.</b>	cum	1166.30	
		Labour Component (including contractor's profit and Overheads)	cum	52.80	
IRR-DAW-6-5	67	Providing and <b>laying filter media</b> consisting of <b>2 layers of 250 gsm poly-propeline non-woven filter fabric and 400 mm thick 20 mm down graded coarse aggregate</b> for vertical / inclined and horizontal filter blanket for embankment including cost of all materials, machinery, labour etc., <b>complete with lead upto 50 m for aggregate and all leads for fabric and all lifts.</b>	sqm	955.50	
		Labour Component (including contractor's profit and Overheads)	sqm	60.80	
IRR-DAW-6-6	68	Providing and <b>constructing 45 cm thick chimney filter</b> using clean approved sand satisfying filter criteria including cost of all materials, machinery, labour, compacting etc., <b>complete with initial lead upto 50 m and all lifts.</b>	cum	237.70	
		Labour Component (including contractor's profit and Overheads)	cum	124.40	
IRR-DAW-6-7	69	Providing and <b>constructing 90 cm thick transition cum filter</b> media behind rockfill using approved sand and 80-20 mm and 20 mm down graded aggregates satisfying the filter criteria in layers of 30 cm thickness each as per specifications including cost of all materials, machinery, labour, laying each layer to required slope, compaction etc., <b>complete with initial lead upto 50 m and all lifts.</b>	cum	914.10	
		Labour Component (including contractor's profit and Overheads)	cum	164.20	
IRR-DAW-6-8	70	Providing and <b>constructing 60 cm thick hand packed rough stone revetment with 65 to 75 cm long through stones</b> at 1.50 m c / c over a backing of 45 cm thick graded filter media consisting of sand, 10 mm and 40 mm size approved graded aggregates laid in layers of 15 cm thick each including cost of all materials, machinery, labour, laying to required slopes, wedging with chips, finishing etc. <b>complete with initial lead upto 50 m and all lifts.</b>	sqm	832.40	
		Labour Component (including contractor's profit and Overheads)	sqm	181.80	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-DAW-6-9	71	Providing and <b>constructing 60 cm thick hand packed rough stone revetment with 65 to 75 cm long through stones</b> at 1.50 m c / c over a backing of 60 cm thick graded filter media consisting of sand, 10 mm and 40 mm size approved graded aggregates laid in layers of 20 cm thick each including cost of all materials, machinery, labour, laying to required slopes, wedging with chips, finishing etc. complete <b>with initial lead upto 50 m and all lifts.</b>	sqm	982.00	
		Labour Component (including contractor's profit and Overheads)	sqm		205.60
IRR-DAW-6-10	72	Providing and <b>constructing 60 cm thick hand packed rough stone riprap over a backing of 45 cm thick graded filter media</b> consisting of sand, 10 mm and 40 mm size graded approved aggregates laid in layers of 15 cm thick each including cost of all materials, machinery, labour, laying to required slopes, wedging with stone chips etc., <b>complete with initial lead upto 50 m and all lifts.</b>	sqm	769.00	
		Labour Component (including contractor's profit and Overheads)	sqm		139.20
IRR-DAW-6-11	73	Providing and <b>constructing 75 cm thick hand packed rough stone riprap over a backing of 45 cm thick graded filter media</b> consisting of sand, 10 mm and 40 mm size graded approved aggregates laid in layers of 15 cm thick each including cost of all materials, machinery, labour, laying to required slopes, wedging with stone chips, etc., complete <b>with initial lead upto 50 m and all lifts.</b>	sqm	843.60	
		Labour Component (including contractor's profit and Overheads)	sqm		151.70
IRR-DAW-6-12	74	Providing and <b>constructing 90 cm thick hand packed rough stone riprap over a backing of 45 cm thick graded filter media</b> consisting of sand, 10 mm and 40 mm size graded approved aggregates laid in layers of 15 cm thick each including cost of all materials, machinery, labour, laying to required slopes, wedging with stone chips etc., <b>complete with initial lead upto 50 m and all lifts.</b>	sqm	932.70	
		Labour Component (including contractor's profit and Overheads)	sqm		176.70
IRR-DAW-6-13	75	Providing and <b>Laying Hariyala or other approved quality turfing sods</b> for the slopes of earthen embankments over 20 mm thick sand backing including cost of all materials, machinery, labour including preparing surface, spreading sand, watering for 15 days etc., <b>complete with initial lead upto 1 km and all lifts.</b>	sqm	104.80	
		Labour Component (including contractor's profit and Overheads)	sqm		70.20
<b>Chapter II</b>					
<b>IRR-TAW</b>		<b>TUNNEL AND ALLIED WORKS</b>			
IRR-TAW-1		<b>EXCAVATION :</b>			
IRR-TAW-1-1	76	<b>Excavation for adit by tunnelling methods in all types of rock</b> including cost of all materials, machinery, labour, scaling excavated surface, ventilation, lighting, drainage, removing and hauling the excavated muck outside adit upto specified dump area and all other ancillary operations etc., <b>complete with initial lead upto 50 m and all lifts.</b>	cum	1731.00	
		Labour Component (including contractor's profit and Overheads)	cum		642.30
IRR-TAW-1-2	77	<b>Excavation for vertical / inclined shaft in all types of soft / hard rock</b> including cost of all materials, machinery, labour, shoring, strutting, scaling excavated surface, ventilation, lighting, drainage, removing and hauling excavated muck outside shaft upto specified dump area and all other ancillary operations etc., <b>complete with initial lead upto 1 km and all lifts.</b>	cum	2309.90	
		Labour Component (including contractor's profit and Overheads)	cum		1289.10
IRR-TAW-1-3	78	<b>Excavation for tunnel by tunnelling methods in rock not requiring supports</b> including cost of all materials, machinery, labour, scaling excavated surface, removing under-cuts, ventilation, lighting, drainage, removing and hauling the excavated muck outside tunnel upto specified dump area and all other ancillary operations etc., <b>complete with initial lead upto 1 km and all lifts.</b>	cum	1767.60	
		Labour Component (including contractor's profit and Overheads)	cum		632.80
IRR-TAW-1-4	79	<b>Excavation for tunnel by tunnelling methods including excavation for supports in all types of soil / rock strata requiring supports</b> ( excluding cost of providing supports ) including cost of all other materials, machinery, labour, scaling excavated surface, ventilation, lighting, drainage, removing and hauling the excavated muck outside tunnel upto specified dump area and all other ancillary operations etc., <b>complete with initial lead upto 1 km and all lifts.</b>	cum	1820.90	
		Labour Component (including contractor's profit and Overheads)	cum		653.50

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-TAW-1-5	80	<b>Excavation for tunnel by heading and benching tunnelling methods</b> including excavation for supports in all types of soil / rock strata requiring supports ( excluding cost of providing supports ) for roof before benching including cost of all other materials, machinery, labour, scaling excavated surface, ventilation, lighting, drainage removing and hauling excavated muck outside tunnel upto specified dump area and all other ancillary operations etc., complete <b>with initial lead upto 1 km and all lifts.</b>  NOTE: Where mucking is to be carried out through shaft using winch and mucking tub system increase the basic rates for items 3, 4 & 5 by 8 percent.	cum	1872.20	
		Labour Component (including contractor's profit and Overheads)	cum	701.10	
IRR-TAW-1-6	81	<b>Removing and hauling muck overfallen</b> due to natural causes such as geological faults etc., out of tunnel including breaking large fragments by blasting if necessary and disposing off the same in specified dump area or as directed including cost of all materials, machinery, labour, ventilation, drainage, lighting and all other ancillary operations etc., complete <b>with initial lead upto 1 km and all lifts.</b>	cum	362.20	
		Labour Component (including contractor's profit and Overheads)	cum	97.80	
IRR-TAW-2		<b>DEWATERING &amp; GUNITING WORKS :</b>			
IRR-TAW-2-1	82	<b>Dewatering tunnel by pumping out water</b> collected by natural drainage inside tunnel including providing sump wherever necessary, cost of all materials, machinery, labour, drainage, lighting, ventilation and all other ancillary operations etc., complete.	Kwhr	21.20	
		Labour Component (including contractor's profit and Overheads)	Kwhr	9.10	
IRR-TAW-2-2	83	<b>Providing 25 mm thick guniting to sides and arch of tunnel in cement mortar 1 : 3 proportion</b> by weight including cost of all materials, machinery, labour, ventilation, lighting, drainage and all other ancillary operations etc., complete <b>with lead upto 1 km and all lifts.</b>	sqm	572.20	
		Labour Component (including contractor's profit and Overheads)	sqm	202.20	
IRR-TAW-2-3 (new Item4 2010-11)	84	<b>Shortcreting in two layers (each layer+38 mm thickness) for slabs</b> duly fixing chain weld wire mesh 100 x 100x5 mm in between the two layers including cost and conveyance of all materials, labour charges, all heads, lifts, centering, scaffolding, machine mixing, laying concrete with shotcrete machine etc. complete as per specification and as directed by Engineer-in-Charge	sqm	1480.30	
		Labour Component (including contractor's profit and Overheads)	sqm	202.20	
IRR-TAW-3		<b>TEMPORARY &amp; PERMANENT SUPPORTS :</b>			
IRR-TAW-3-1	85	<b>Providing and fixing 25 mm diameter steel rock bolts with mechanical / wedge type anchorage</b> including drilling 35 mm dia holes, providing 15 cm long 20 mm thick steel tapered wedge, 10 mm thick plate washers and nuts, tightening bolt by torque wrench, cost of all materials, machinery, labour, ventilation, lighting, drainage and all other ancillary operations etc., <b>complete with lead upto 1 km and all lifts.</b>	Rm	1024.30	
		Labour Component (including contractor's profit and Overheads)	Rm	341.40	
IRR-TAW-3-2	86	<b>Providing and fixing 25 mm diameter steel rock bolts with resin bond cement capsule anchorage</b> including drilling 35 mm dia holes, inserting grout capsule, driving bolt,fixing 10 mm thick plate washers and nuts and tightening the same by torque wrench after hardening of cement grout, cost of all materials, machinery, labour, ventilation, lighting, drainage and other ancillary operations etc., <b>complete with lead upto 1 km and all lifts.</b>	Rm	977.00	
		Labour Component (including contractor's profit and Overheads)	Rm	314.00	
IRR-TAW-3-3	87	<b>Providing, fabricating and fixing in position permanent structural steel supports as per details</b> including cost of all materials, machinery, labour, cutting, bending, welding, grinding, lighting, ventilation, drainage and all other ancillary operations etc., complete <b>with initial lead upto 1 km and all lifts.</b>	tonne	85555.10	
		Labour Component (including contractor's profit and Overheads)	tonne	18569.20	
IRR-TAW-3-4	88	<b>Providing, fabricating and fixing in position temporary structural steel supports as per details</b> and dismantling the same before concreting including cost of all materials, machinery, labour, cutting, bending, welding, grinding, ventilation, lighting, drainage and all other ancillary operations etc.,complete <b>with initial lead upto 1 km and all lifts.</b>	tonne	22938.20	
		Labour Component (including contractor's profit and Overheads)	tonne	9309.20	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-TAW-3-5	89	Providing and fixing <b>hard variety cut jungle wood for lagging / blocking locations in tunnel</b> wherever required including cost of all materials, machinery, labour, fixing in position, lighting, ventilation, drainage etc complete <b>with all leads and lifts.</b>	cum	32978.40	
		Labour Component (including contractor's profit and Overheads)	cum		1649.20
IRR-TAW-4		<b>MASONRY WORKS :</b>			
IRR-TAW-4-1	90	Providing and <b>constructing un-coursed rubble stone masonry</b> with approved stones from tunnel excavated muck in <b>cement mortar 1 : 6</b> proportion for backfilling over cuts / slips on tunnel sides due to geological faults etc., including cost of all materials, machinery, labour, cleaning, scaffolding, packing mortar, wedging stone chips, curing, ventilation, lighting, drainage complete <b>with lead upto 1 km and all lifts.(cement content : 95 kg/cum of masonry, Rubble stones : 0.83 cum, Stone chips : 0.13 cum, FA : 0.40 cum)</b>	cum	2131.40	
		Labour Component (including contractor's profit and Overheads)	cum		872.60
IRR-TAW-5		<b>REINFORCEMENT &amp; CONCRETE WORKS :</b>			
IRR-TAW-5-1	91	Providing, fabricating and placing in position <b>reinforcement steel for tunnel RCC works</b> including cleaning, straightening, cutting, bending, hooking, lapping / welding joints wherever required, tying with 1.25 mm dia.soft annealed steel wire, including cost of all materials, labour, machinery, ventilation, lighting, drainage etc., complete <b>with initial lead upto 1 km and all lifts.</b>	tonne	58584.10	
		Labour Component (including contractor's profit and Overheads)	tonne		11639.90
IRR-TAW-5-2	92	Providing and laying <b>insitu vibrated M-10</b> ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates crushed from tunnel excavated muck for filling and levelling over-cuts in bed due to geological faults etc., including cost of all materials, machinery, labour, cleaning bed, batching, mixing, conveying and laying, levelling, compacting, finishing, curing, lighting, ventilation, drainage etc., <b>complete with initial lead upto 1 km and all lifts.</b> ( Cement content : 220 kg / cum, CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum, Superplasticizer 0.4% by wt. of cement)	cum	5259.20	
		Labour Component (including contractor's profit and Overheads)	cum		864.00
IRR-TAW-5-3	93	Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sqmm ) grade cement concrete using <b>40 mm and down size</b> approved clean, hard, graded aggregates crushed from tunnel muck for kerb and bed lining including cost of all materials, machinery, labour, formwork, batching, mixing, conveying upto placing point in agitator cars, placing in position, levelling, vibrating, finishing, curing, ventilation, lighting, drainage and all other ancillary operations etc., complete <b>with lead upto 1 km and all lifts.</b> ( Cement content 330 kg / cum for use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)	cum	6452.60	
		Labour Component (including contractor's profit and Overheads)	cum		1075.90
IRR-TAW-5-4	94	Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sqmm ) grade cement concrete using <b>40 mm and down size</b> approved clean, hard, graded aggregates crushed from tunnel muck for sides and arch lining including cost of all materials, machinery, labour, formwork, batching, mixing, conveying upto placing point in agitator cars, placing in position, levelling, vibrating, finishing, curing, ventilation, lighting, drainage and all other ancillary operations etc., complete <b>with lead upto 1 km and all lifts.</b> ( Cement content 330 kg / cum for use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)	cum	7191.70	
		Labour Component (including contractor's profit and Overheads)	cum		890.60
IRR-TAW-6		<b>DRILLING &amp; GROUTING WORKS :</b>			
IRR-TAW-6-1	95	<b>Drilling 32 mm diameter grout holes in concrete / rock by percussion drilling</b> using jack hammer or steeper drills as directed to specified depth for consolidation / contact grouting including cost of all materials, machinery, labour, cleaning holes, ventilation, lighting, drainage and all other ancillary operations etc., complete.	Rm	384.60	
		Labour Component (including contractor's profit and Overheads)	Rm		163.50

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-TAW-6-2	96	<b>Grouting cement slurry in grout holes under specified pressure for consolidation / contact grouting</b> including cost of all materials, machinery, labour, redrilling wherever necessary, ventilation, lighting, drainage and other ancillary operations etc., complete <b>with lead upto 1 km and all lifts.</b>	tonne	10815.20	
		Labour Component (including contractor's profit and Overheads)	tonne		2520.00
IRR-TAW-6-3	97	<b>Drilling 75 mm diameter drainage holes</b> vertical or inclined in rock / concrete in tunnel by <b>percussion drilling</b> using waggon drill or other suitable drilling equipment including cost of all materials, machinery, labour, ventilation, lighting, drainage etc., complete.	Rm	347.40	
		Labour Component (including contractor's profit and Overheads)	Rm		67.70
<b>Chapter III</b>					
<b>IRR-CAW</b>		<b>CANAL AND ALLIED WORKS</b>			
<b>IRR-CAW-1</b>		<b>EXCAVATION WORKS :</b>			
IRR-CAW-1-1	98	Excavation in all kinds of soil including boulders <b>upto 0.3 m diameter</b> for canal, seating of embankment, filter drains / catch water drains etc., including dressing bed and sides to required level and profile, cost of all materials, machinery, labour, placing the excavated soil neatly in dump area or for the formation of service road / embankment as directed etc., complete <b>with initial lead upto 1 km and all lifts.</b>	cum	95.60	
		Labour Component (including contractor's profit and Overheads)	cum		26.20
IRR-CAW-1-2	99	Excavation in all kinds of soil including boulders <b>upto 0.30 m dia</b> for field channels, seating of embankment for field channels etc., including dressing of bed and sides to required profile, cost of all materials, machinery, labour, placing the excavated stuff for formation of service road / embankment as directed etc., complete with lead upto 10 m and lift upto 3 m.  (Machinery excavation and manual conveyance)	cum	52.00	
		Labour Component (including contractor's profit and Overheads)	cum		21.40
IRR-CAW-1-3	100	Excavation in ordinary rock ( <b>including HDR</b> ) without blasting including boulders <b>above 0.30 m upto 0.6 m dia.</b> for canals, seating of embankment, filter drain / catch water drains etc., including dressing of bed and sides to required level and profile, cost of all materials, machinery, labour, placing the excavated soft rock neatly in dump area or for formation of service road as directed etc., complete <b>with lead upto 1 km and all lifts.</b>	cum	129.90	
		Labour Component (including contractor's profit and Overheads)	cum		38.90
IRR-CAW-1-4	101	Excavation in ordinary rock ( <b>including HDR</b> ) without blasting including boulders <b>above 0.3 m upto 0.60 m dia.</b> for field channels, seating of embankment for field channels etc., including dressing of bed and sides to required profile, cost of all materials, machinery, labour, placing the excavated stuff for formation of service road as directed etc., complete <b>with lead upto 10 m and lift upto 3 m.</b>  (Machinery excavation and manual conveyance)	cum	85.90	
		Labour Component (including contractor's profit and Overheads)	cum		35.10
IRR-CAW-1-5	102	<b>Excavation in hard rock (including F&amp;F rock) requiring blasting</b> including boulders <b>above 0.6 m upto 1.2 m dia.</b> for canals, seating of embankment, filter drain / catch water drains etc., including dressing bed and sides to required level and profile, cost of all materials, machinery, labour, placing the excavated rock in dump area or for formation of service road as directed etc., complete <b>with lead upto 1 km and all lifts.</b>	cum	198.80	
		Labour Component (including contractor's profit and Overheads)	cum		70.20
IRR-CAW-1-6 (a)	103	<b>Excavation in hard rock of all toughness by blasting</b> including boulders <b>above 1.2 m dia.</b> for canals, seating of embankment, filter drain / catch water drains etc., including levelling the bed by removing all projections by hammering / chiselling, cost of all materials, machinery, labour, placing the excavated rock neatly in approved dump area and levelling the same as directed etc., complete <b>with initial lead upto 1 km and all lifts.</b>  i ) The rate under this item shall be adopted for canals designed for carrying capacity of less than 15 cumecs or where the average depth excavation in hard rock is less than 3 m. ii ) The rate includes levelling canal bed by hammering / chiselling all rock projections wherever required.	cum	488.50	
		Labour Component (including contractor's profit and Overheads)	cum		150.20

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CAW-1-7 (b)	104	<p><b>Excavation in hard rock of all toughness including boulders above 1.2 m dia. by approved controlled blasting methods for canals,</b> cut-off trench of embankment, filter / catch-water drains etc., including controlling fly-rock by muffling arrangements such as placing 50 x 50 mm opening chain link mesh or waste tyres and sand bags, monitoring ground vibrations at specified locations, cost of all materials, machinery, labour, placing excavated rock neatly in approved dump area or other place as directed etc., complete <b>with lead upto 1 km and all lifts.</b></p> <p>i) The rate under this item shall be adopted for canals designed for carrying capacity of less than 15 cumecs or where the average depth excavation in hard rock is less than 3 m.  ii ) The rate under this item shall be adopted where the control of fly-rock and ground vibrations is required.</p>	cum	605.20	
		Labour Component (including contractor's profit and Overheads)	cum		148.50
IRR-CAW-1-8( c)	105	<p><b>Excavation in hard rock of all toughness including boulders above 1.2 m dia. for dressing canal sides</b> neatly on either side to required profile by line drilling and smooth blasting including removing under-cuts by chiselling / hammering, placing the excavated rock neatly in dump area or other place as directed, cost of all materials, machinery, labour etc., complete <b>with lead upto 1 km and all lifts.</b></p> <p>i) For excavation of canal below free board level combination of normal controlled blasting and line drilling and smooth blasting shall be adopted to obtain neat side slopes. For the purpose of payment 1 m width of excavation on either side shall be treated as excavation by line drilling and smooth blasting and remaining portion shall be treated as excavation by normal / controlled blasting as the case may be.  ii ) The rate under this item shall be adopted for canals designed for carrying capacity of less than 15 cumecs or where the average depth of excavation in hard rock is less than 3 m.  iii ) The rate includes controlling fly-rock wherever required.  iv ) The rate under this item shall be paid only on ascertaining that the excavated face has come off neatly as per specifications or atleast 50 percent of smooth blast holes are visible for inspection and are spaced at specified interval.  v ) In case, where the above criteria is not fulfilled payment shall be restricted to the rate provided for excavation by normal blasting or controlled blasting as the case may be.</p>	cum	1080.90	
		Labour Component (including contractor's profit and Overheads)	cum		395.80
IRR-CAW-1-9(a)	106	<p><b>Excavation in hard rock by blasting</b> including boulders above 1.2 m dia. for canals, seating embankment etc., including levelling bed by removing all projections by hammering / chiselling, cost of all materials, machinery, labour, placing the excavated rock neatly in approved dump area and levelling the same as directed etc.,complete <b>with initial lead upto 1 km and all lifts.</b></p> <p>i ) The rate under this item shall be adopted for canals designed for carrying capacity of more than 15 cumecs or where the average depth of excavation in hard rock is more than 3 m.  ii ) The rate includes levelling canal bed by hammering /chiselling all rock projections wherever required.</p>	cum	299.40	
		Labour Component (including contractor's profit and Overheads)	cum		47.40
IRR-CAW-1-10(b)	107	<p><b>Excavation in hard rock of all toughness including boulders above 1.2 m dia. by approved controlled blasting methods for canals,</b> cut-off trench of embankment etc., including controlling fly-rock by muffling arrangements such as placing 50 x 50 mm opening chain link mesh or waste tyres and sand bags, monitoring ground vibrations at specified locations, cost of all materials, machinery, labour, placing excavated rock neatly in approved dump area or other place as directed etc., complete <b>with lead upto 1 km and all lifts.</b></p> <p>i) The rate under this item shall be adopted for canals designed for carrying capacity of more than 15 cumecs or where the average depth of excavation in hard rock is more than 3 m.  ii ) The rate under this item shall be adopted where the control of fly-rock and ground vibrations is required.</p>	cum	449.10	
		Labour Component (including contractor's profit and Overheads)	cum		54.20

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CAW-1-11(c)	108	<p><b>Excavation in hard rock of all toughness including boulders above 1.2 m dia. for dressing canal sides</b> neatly on either side to required profile by line drilling and smooth blasting including removing under-cuts by chiselling / hammering, placing the excavated rock neatly in dump area or other place as directed, cost of all materials, machinery, labour etc., complete <b>with lead upto 1 km and all lifts.</b></p> <p>i ) For excavation of canal below free board level combination of normal controlled blasting and line drilling and smooth blasting shall be adopted to obtain neat side slopes. For the purpose of payment 1 m width of excavation on either side shall be treated as excavation by line drilling and smooth blasting and remaining portion shall be treated as excavation by normal / controlled blasting as the case may be.</p> <p>ii ) The rate under this item shall be adopted for canals designed for carrying capacity of more than 15 cumecs or where the average depth of excavation in hard rock is more than 3 m.</p> <p>iii ) The rate includes controlling fly-rock wherever required.</p> <p>iv ) The rate under this item shall be paid only on ascertaining that the excavated face has come off neatly as per specifications or atleast 50 percent of smooth blast holes are visible for inspection and are spaced at specified interval.</p> <p>v ) In case, where the above criteria is not fulfilled payment shall be restricted to the rate provided for excavation by normal blasting or controlled blasting as the case may be.</p>	cum	734.30	
		Labour Component (including contractor's profit and Overheads)	cum	122.00	
IRR-CAW-2		<b>EMBANKMENT WORKS USING BORROW AREA SOIL :</b>			
IRR-CAW-2-1	109	<p>Providing <b>impervious hearting embankment</b> with selected soil from <b>approved borrow areas</b> in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, <b>watering</b>, compacting each layer to density control of <b>not less than 98 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete <b>with initial lead upto 1 km and all lifts.</b></p>	cum	197.70	
		Labour Component (including contractor's profit and Overheads)	cum	35.70	
IRR-CAW-2-2	110	<p>Providing <b>impervious hearting embankment</b> with selected soil from <b>approved borrow areas</b> in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, <b>watering</b>, compacting each layer to density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete <b>with initial lead upto 1 km and all lifts.</b></p>	cum	191.00	
		Labour Component (including contractor's profit and Overheads)	cum	35.00	
IRR-CAW-2-3	111	<p>Providing <b>semi-pervious / pervious casing embankment</b> using soil from <b>approved borrow area</b> in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sortingout, transporting, spreading in layer of specified thickness, breaking clods, sectioning, <b>watering</b>, compacting to density control of <b>not less than 98 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete <b>with initial lead upto 1 km and all lifts.</b></p>	cum	197.50	
		Labour Component (including contractor's profit and Overheads)	cum	35.70	
IRR-CAW-2-4	112	<p>Providing <b>semi-pervious / pervious casing embankment</b> using soil from <b>approved borrow area</b> in layers of 25cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sortingout, transporting, spreading in layer of specified thickness, breaking clods, sectioning, <b>watering</b>, compacting to density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete <b>with initial lead upto 1 km and all lifts.</b></p>	cum	193.50	
		Labour Component (including contractor's profit and Overheads)	cum	37.50	
IRR-CAW-2-5	113	<p>Providing <b>semi-pervious / pervious casing embankment</b> using soil from <b>approved borrow area</b> in layers of 25cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sortingout, transporting, spreading in layer of specified thickness, breaking clods, sectioning, compacting each layer <b>without watering</b> to density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete <b>with initial lead upto 1 km and all lifts.</b></p>	cum	179.90	
		Labour Component (including contractor's profit and Overheads)	cum	32.40	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CAW-2-6	114	Providing hearting / casing embankment with homogeneous soil from approved borrow areas in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, <b>watering</b> , compacting each layer to density control of <b>not less than 98 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete with initial lead upto 1 km and all lifts.	cum	170.60	
		Labour Component (including contractor's profit and Overheads)			29.40
IRR-CAW-2-7	115	Providing hearting / casing embankment with homogeneous soil from approved borrow areas in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, <b>watering</b> , compacting each layer to density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete with initial lead upto 1 km and all lifts.	cum	164.70	
		Labour Component (including contractor's profit and Overheads)			28.70
IRR-CAW-2-8	116	Providing <b>casing embankment using homogeneous soil from approved borrow area</b> in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sortingout, transporting, spreading in layer of specified thickness, breaking clods, sectioning, compacting each layer <b>without watering</b> to density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete with initial lead upto 1 km and all lifts.	cum	154.70	
		Labour Component (including contractor's profit and Overheads)			26.50
IRR-CAW-3		<b>EMBANKMENT WORKS USING DUMP AREA SOIL :</b>			
IRR-CAW-3-1	117	Providing impervious hearting embankment with soil from <b>approved dump areas</b> in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as re-excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, <b>watering</b> , compacting each layer to achieve density control of <b>not less than 98 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc.,complete with initial lead upto 1 km and all lifts.	cum	149.90	
		Labour Component (including contractor's profit and Overheads)			27.30
IRR-CAW-3-2	118	Providing impervious hearting embankment with soil from <b>approved dump areas</b> in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as re-excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, <b>watering</b> , compacting each layer to achieve density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc.,complete with initial lead upto 1 km and all lifts.	cum	144.70	
		Labour Component (including contractor's profit and Overheads)			26.80
IRR-CAW-3-3	119	Providing semi-pervious / pervious casing embankment using soil from <b>approved dump area</b> in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as re-excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, <b>watering</b> , compacting each layer to density control of <b>not less than 98 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc.,complete with initial lead upto 1 km and all lifts.	cum	145.70	
		Labour Component (including contractor's profit and Overheads)			26.50
IRR-CAW-3-4	120	Providing semi-pervious / pervious casing embankment using soil from <b>approved dump area</b> in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as re-excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, <b>watering</b> , compacting each layer to density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc.,complete with initial lead upto 1 km and all lifts.	cum	140.30	
		Labour Component (including contractor's profit and Overheads)			25.90

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CAW-3-5	121	Providing semi-pervious / pervious casing embankment using soil from <b>approved dump area</b> in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as re-excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, compacting each layer <b>without watering</b> to density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete with initial lead upto 1 km and all lifts. Labour Component (including contractor's profit and Overheads)	cum	131.40	23.90
IRR-CAW-4		<b>EMBANKMENT WORKS USING EXCAVATED SOIL :</b>			
IRR-CAW-4-1	122	Providing impervious hearting embankment with soil <b>collected in embankment area</b> in heaps as part of disposal of excavated soil from canal including cost of all materials,machinery, labour, all operations such as sortingout, spreading in <b>layer of 25 cm</b> before compaction, breaking clods,sectioning, <b>watering</b> and compacting each layer to density control of <b>not less than 98 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete with lead upto 1 km for water. Labour Component (including contractor's profit and Overheads)	cum	67.00	11.00
IRR-CAW-4-2	123	Providing impervious hearting embankment with soil <b>collected in embankment area</b> in heaps as part of disposal of excavated soil from canal including cost of all materials,machinery, labour, all operations such as sortingout, spreading in <b>layer of 25 cm</b> before compaction, breaking clods,sectioning, <b>watering</b> and compacting each layer to density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete with lead upto 1 km for water. Labour Component (including contractor's profit and Overheads)	cum	61.80	11.20
IRR-CAW-4-3	124	Providing semi-pervious / pervious casing hearting embankment using soil <b>collected in heaps in embankment area</b> as part of disposal of excavated soil from canal including cost of all materials, machinery, labour, all operations such as sorting-out, spreading in <b>layers of 25 cm</b> before compaction, breaking clods, sectioning, <b>watering</b> and compacting each layer to density control of <b>not less than 98 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete with lead upto 1 km for water. Labour Component (including contractor's profit and Overheads)	cum	67.00	11.00
IRR-CAW-4-4	125	Providing semi-pervious / pervious casing embankment using soil <b>collected in heaps in embankment area</b> as part of disposal of excavated soil from canal including cost of all materials, machinery, labour, all operations such as sorting-out, spreading in <b>layers of 25 cm</b> before compaction, breaking clods, sectioning, <b>watering</b> and compacting each layer to density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete with lead upto 1 km for water. Labour Component (including contractor's profit and Overheads)	cum	61.80	11.20
IRR-CAW-4-5	126	Providing semi-pervious / pervious casing embankment using soil <b>collected in heaps in embankment area</b> as part of disposal of excavated soil from canal including cost of all materials, machinery, labour, all operations such as sorting-out, spreading in <b>layers of 25 cm</b> before compaction, breaking clods, sectioning and compacting each layer without watering to density control of <b>not less than 95 percent</b> or as stipulated by <b>Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller</b> etc., complete. Labour Component (including contractor's profit and Overheads)	cum	51.30	8.20
IRR-CAW-4-6	127	Providing <b>compacted embankment for field irrigation channels with gravelly soil</b> from approved borrow area including sorting out, spreading in <b>layers of 15 cm</b> thickness, breaking clods, watering, compacting, dressing sides to required slopes etc.,complete with lead upto 50 m and all lifts. ( manual work with water pump) Labour Component (including contractor's profit and Overheads)	cum	313.40	309.30
IRR-CAW-5		<b>FOUNDATION FILLING WORKS :</b>			
IRR-CAW-5-1	128	Providing rubble and sand filling in <b>layers of 22.5 to 30 cm</b> including cost of all materials, machinery, labour, watering, ramming etc., complete with initial lead upto 50 m and all lifts. Labour Component (including contractor's profit and Overheads)	cum	563.50	159.10

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CAW-5-2	129	Providing <b>rubble and Murum filling in layers of 22.5 to 30 cm</b> including cost of all materials, machinery, labour, watering, ramming etc., complete <b>with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	cum	595.30	
IRR-CAW-5-3	130	Providing and laying <b>25 cm thick sand blanket below embankment</b> including cost of all materials, machinery, labour, spreading to specified thickness etc., complete <b>with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	sqm	46.90	
IRR-CAW-5-3-A (New Item 3 - 2011-12)	131	Providing and laying <b>sand blanket below embankment</b> including cost of all materials, machinery, labour, spreading to specified thickness etc., complete <b>with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	cum	187.50	
IRR-CAW-5-4	132	Providing and <b>constructing dry rubble rock-toe using rubble and stone chips from approved source</b> including cost of all materials, machinery, labour, hand packing rubble and stone chips, finishing top and sides to required slopes etc., complete <b>with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	cum	534.10	
IRR-CAW-5-5	133	Providing and <b>constructing longitudinal and cross graded filter drains</b> using sand and 20 mm down graded aggregates satisfying specified filter criteria in layers as per specifications including cost of all materials, machinery, labour, laying to required slopes, compaction etc., complete <b>with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	cum	532.60	
IRR-CAW-5-6	134	Laying <b>Longitudinal Drains and Transverse drains of Size 600 x600 x750 mm in Bed</b> and filling with 12 mm to 40 mm HG machine Crushed metal and sand in bed including excavation of drains and Cost of procuring of all materials	Rm	265.10	
	133		Rm		28.10
IRR-CAW-5-7	135	Laying and fixing of <b>100 mm Dia 300 mm long precast porus CC plugs in bed and sides</b> using 1.181 Kgs of cement per each using 20 mm HG metal and placing in local filters of size 600x600x750 mm in size including excavation of drains and Cost of procuring of all materials Labour Component (including contractor's profit and Overheads)	one plug	272.20	
IRR-CAW-5-8	136	Providing and <b>constructing 0.50 m thick vertical or inclined graded filter media</b> consisting of 15 cm thick sand layers and 20 cm thick 20 mm down coarse aggregate layer using approved materials satisfying specified filter criteria as per specifications including cost of all materials, machinery, labour, laying to required slope, compaction etc., complete <b>with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	cum	732.80	
IRR-CAW-5-9	137	Providing and <b>constructing graded filter media below and behind rock-toe</b> consisting of 20 cm thick sand, 15 cm thick 20 mm down and 15 cm thick 40 mm down size graded coarse aggregates satisfying filter criteria behind rock-toe and 15 cm thick sand, 20 cm thick 20 mm down coarse aggregate and 65 cm thick 40 mm down size coarse aggregate satisfying filter criteria below rock-toe as per specifications including cost of all materials, machinery, labour, laying to required slope, compaction etc., complete <b>with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	cum	1055.30	
IRR-CAW-5-10(a)	138	Providing and laying <b>filter media consisting of 2 layers of poly-propeline nonwoven filter fabric and 200 mm thick 20 mm down graded coarse aggregate for embankment</b> including cost of all materials, machinery, labour, forming toe drain etc., complete <b>with lead upto 50 m for aggregate and all leads for fabric and all lifts.</b> Using <b>200 gsm</b> filter fabric. Labour Component (including contractor's profit and Overheads)	sqm	603.00	
IRR-CAW-5-11(b)	139	Providing and laying <b>filter media consisting of 2 layers of poly-propeline nonwoven filter fabric and 200 mm thick 20 mm down graded coarse aggregate for embankment</b> including cost of all materials, machinery, labour, forming toe drain etc., complete <b>with lead upto 50 m for aggregate and all leads for fabric and all lifts.</b> Using <b>250 gsm</b> filter fabric. Labour Component (including contractor's profit and Overheads)	sqm	650.70	
			sqm		32.90

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
<b>IRR-CAW-6 : ROCK FILL WORKS :</b>					
IRR-CAW-6-1	140	Providing and <b>constructing rockfill casing to canal embankment</b> with graded stones and spalls from <b>approved quarry</b> including cost of all materials, machinery, labour, spreading stones and spalls in layers, hand packing, wedging, finishing surface to required slopes etc., complete <b>with initial lead upto 50 m and all lifts.</b>	cum	480.00	
		Labour Component (including contractor's profit and Overheads)	cum		59.10
IRR-CAW-6-2	141	Providing and <b>constructing rockfill casing to canal embankment</b> with graded stones and spalls available <b>in dump yard</b> including cost of all materials, machinery, labour, spreading stones and spalls in layers, hand packing, wedging, finishing surface to required slopes etc., complete <b>with initial lead upto 50 m and all lifts.</b>  Stones and spalls available in dump yard will be issued at specified issue rate.	cum	283.80	
		Labour Component (including contractor's profit and Overheads)	cum		76.10
<b>IRR-CAW-7 : CANAL LINING WORKS :</b>					
IRR-CAW-7-1	142	Providing cohesive non-swelling ( CNS ) soil lining to canals using soil from <b>approved borrow area</b> including spreading soil in <b>layers of thickness not more than 15 cm</b> , breaking clods, watering, compacting to density control of <b>not less than 98 percent</b> or as stipulated, dressing to required profile etc., complete <b>with initial lead upto 1 km and all lifts.</b>	cum	216.80	
		Labour Component (including contractor's profit and Overheads)	cum		71.00
IRR-CAW-7-2	143	Providing cohesive non-swelling ( CNS ) soil lining to canals using soil from <b>approved borrow area</b> including spreading soil in <b>layers of thickness not more than 15 cm</b> , breaking clods, watering, compacting to density control of <b>not less than 95 percent</b> or as stipulated, dressing to required profile etc., complete <b>with initial lead upto 1 km and all lifts.</b>	cum	211.90	
		Labour Component (including contractor's profit and Overheads)	cum		70.10
IRR-CAW-7-3	144	Providing cohesive non-swelling ( CNS ) soil lining to canal using soil <b>collected in heaps along the edge of canal requiring CNS soil lining</b> as part of the disposal of excavated soil from canal excavation in CNS soil reach including spreading in layers of thickness <b>not more than 15 cm</b> , breaking clods, watering, compacting to density control of <b>not less than 95 percent</b> or as stipulated, dressing to required profile etc., complete <b>with lead upto upto 50 m and all lifts.</b>	cum	110.10	
		Labour Component (including contractor's profit and Overheads)	cum		54.10
IRR-CAW-7-4	145	Providing and fixing <b>20 x 20 x 75 cm size top surface neatly dressed canal bed level stones</b> including cost of all materials, labour, excavation, fixing in position to correct level etc., complete <b>with lead upto 50 m and all lifts.</b>	Each	98.60	
		Labour Component (including contractor's profit and Overheads)	Each		72.50
IRR-CAW-7-5	146	Providing, fabricating and <b>placing in position reinforcement steel bars</b> for <b>RCC works</b> including cleaning, straightening, cutting, bending, hooking, lapping, tying with 1.25 mm dia.soft annealed steel wire, welding wherever required including cost of all materials, machinery, labour etc., complete <b>with initial lead upto 50 and all lifts.(1.05 tonne/tonne of steel)</b>	kg	49.60	
		Labour Component (including contractor's profit and Overheads)	kg		8.20
IRR-CAW-7-6	147	Providing and <b>laying 75 mm thick in-situ M-15</b> ( 28 days cube compressive strength not less than 15 N / sqmm ) grade cement concrete with <b>20 mm down size</b> approved, clean, hard, graded aggregates <b>for canal lining</b> using vibrating cylinder type mechanical paver including cost of all materials, machinery, labour, cleaning, batching, mixing, placing in position,finishing, forming contraction joints, fixing PVC joint sealing strips, curing, shifting of paver from one side to other side of canal etc., <b>complete with initial lead upto 1 km and all lifts.</b> ( 43 Gr Cement content (300kg /cum) 22.5 kg / sqm for use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum, equivalent concrete volume:79.2 cum including the extra quantity of concrete for curvatures and bends etc.,)	sqm	409.90	
		Labour Component (including contractor's profit and Overheads)	sqm		32.20

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CAW-7-7	148	Providing and laying <b>80 mm thick in-situ M-15</b> ( 28 days cube compressive strength not less than 15 N / sqmm ) grade cement concrete with <b>20 mm down size</b> approved, clean, hard, graded aggregates for canal lining using vibrating cylinder type mechanical paver including cost of all materials, machinery, labour, cleaning, batching, mixing, placing in position, finishing, forming contraction joints, fixing PVC joint sealing strips, curing, shifting of paver from one side to other side of canal etc., <b>complete with initial lead upto 1 km and all lifts.</b> ( 43 Gr Cement content: (300kg /cum) 24 kg / sqm for use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum, equivalent concrete volume:84.48 cum including the extra quantity of concrete for curvatures and bends etc.,)	sqm	426.90	
		Labour Component (including contractor's profit and Overheads)	sqm		32.20
IRR-CAW-7-8	149	Providing and laying <b>100 mm thick in situ M-15</b> (28 days cube compressive strength not less than 15 N /Sqmm ) grade cement concrete with <b>20 mm down size</b> approved, clean, hard, graded aggregates for canal lining using, vibrating, cylinder type mechanical paver including cost of all materials, machinery, labour, cleaning, batching, mixing, placing in position, finishing, forming contraction joints, fixing PVC joint sealing strips, curing, shifting of paver from one side to other side of canal etc., <b>complete with initial lead upto 1 Km and all lifts.</b> ( 43 Gr Cement content: (300kg /cum) 30 kg / sqm for use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum, equivalent concrete volume:88 cum including the extra quantity of concrete for curvatures and bends etc.,)	sqm	516.70	
		Labour Component (including contractor's profit and Overheads)	sqm		37.40
IRR-CAW-7-9	150	<b>Dismantling, shifting and re-erecting mechanical concrete paver and DG set</b> with all accessories <b>across canal CD work</b> or other locations wherever shifting and re-erecting is necessary including aligning paver correctly for continuing canal lining work, cost of all materials, machinery, labour etc., <b>complete with all leads and lifts.</b>  Note: Local shifting and re-erection of paver for LH and RH side lining included in concrete lining rates under items IRR-CAW-7-7 and IRR-CAW-7-8 and saperate rate for shifting shall not be allowed.	shifting	9431.30	
		Labour Component (including contractor's profit and Overheads)	shifting		7026.40
IRR-CAW-7-10	151	Providing and laying <b>insitu vibrated M-10</b> ( 28 days cube compressive strength not less than 10 N /sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates for bed and side lining of canal( <b>150mm thick</b> ) including finishing the junction of bed and sides to required curvature, cost of all materials, machinery, labour, formwork including supports, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., <b>complete with initial lead upto 50 m and all lifts.</b> ( 43 Gr Cement content: 250 kg / cum for use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)  (Only for Manually operated)	cum	4489.10	
		Labour Component (including contractor's profit and Overheads)	cum		1260.60
IRR-CAW-7-11	152	Providing and laying <b>insitu vibrated M-10</b> (28 days cube compressive strength not less than 10 N/sqm) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregate for bed and side lining of canal( <b>100 mm thick</b> ) including, finishing the junction of bed and sides to required curvature, cost of all materials, machinery, labour, formwork including supports cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead up to 50 m and all lifts ( 43 Gr Cement content: 250 kg / cum for use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)	cum	4633.10	
		Labour Component (including contractor's profit and Overheads)	cum		1297.90
IRR-CAW-7-12	153	Providing and laying <b>100mm thick insitu vibrated M-10</b> (28 days cube compressive strength-not less than 10.00 N / sq mm) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates for bed and side lining of canal lining using <b>vibrating cylindertype mechanical paver</b> including cost of all materials mechinery labour batching mixing placing in position forming contraction joints fixing pvc joint sealing strips shifting of paver from one side of canal to other side etc. <b>complete with all leads &amp; lifts.</b> (Cement content: 250 kg / cum for use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)	sqm	495.70	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
		Labour Component (including contractor's profit and Overheads)	sqm		37.40
IRR-CAW-7-13	154	Providing and laying <b>insitu vibrated M-10</b> ( 28 days cube compressive strength not less than 10 N /sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates for bed and side lining of canal including finishing the junction of bed and sides to required curvature, cost of all materials, machinery, labour, formwork including supports, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 250 kg / cum for use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)	cum	4503.80	
		Labour Component (including contractor's profit and Overheads)	cum		1297.90
IRR-CAW-7-14	155	Providing and laying <b>insitu vibrated M-15</b> ( 28 days cube compressive strength not less than 15 N /sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates for bed and side lining( <b>150 mm thick</b> ) of canal including finishing the junction of bed and sides to required curvature, cost of all materials, machinery, labour, formwork including supports, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 290 kg / cum for use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)	cum	4891.10	
		Labour Component (including contractor's profit and Overheads)	cum		1373.00
IRR-CAW-7-15	156	Providing and laying <b>insitu vibrated M-15</b> ( 28 days cube compressive strength not less than 15 N /sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates for bed and side lining( <b>of thickness 100 mm</b> ) of canal including finishing the junction of bed and sides to required curvature, cost of all materials, machinery, labour, formwork including supports, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 300 kg / cum for use of super plasticiser(0.4% by wt. of cement),CA : 0.80 cum, Blending Ratio of CA--65:35, FA : 0.45 cum)	cum	5009.50	
		Labour Component (including contractor's profit and Overheads)	cum		1450.00
IRR-CAW-7-16	157	Providing and laying <b>150mm thick insitu vibrated M-15</b> (28 days cube compressive strength-not less than 15.00 N / sq mm) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates for bed and side lining of canal lining using vibrating cylindertype mechanical paver including cost of all materials machinery labour batching mixing placing in position forming contraction joints fixing pvc joint sealing strips shifting of paver from one side of canal to other side etc. <b>complete with all leads &amp; lifts.</b> (Cement content: 300 kg / cum for use of super plasticiser(0.4% by wt. of cement),CA : 0.80 cum, Blending Ratio of CA--65:35, FA : 0.44 cum)  <b>(Paver)</b>	sqm	685.20	
		Labour Component (including contractor's profit and Overheads)	sqm		37.40
IRR-CAW-7-17	158	Providing and fixing <b>pre-cast RCC template walls</b> consisting of 0.05 cum <b>M-15 grade</b> concrete using <b>20 mm down size</b> coarse aggregates and 10 kg reinforcement steel moulded as per specifications and drawing in CM 1:4 proportion including cost of all materials, machinery, labour, formwork, fabricating and placing reinforcement steel, mixing, laying, conveying and fixing in position including necessary excavation for seating, finishing joints in CM 1:4, curing etc., complete <b>with initial lead upto 1 km and all lifts.</b>	Rm	904.30	
		Labour Component (including contractor's profit and Overheads)	Rm		286.90
IRR-CAW-7-18	159	Providing and fixing <b>50 mm dia perforated GI pressure relief pipes 12.50 cm long</b> with one end closed with perforated GI plate and other end provided with alluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., complete <b>with all leads and lifts.</b>	Each	128.70	
		Labour Component (including contractor's profit and Overheads)	Each		48.90
IRR-CAW-7-19	160	Providing and fixing <b>50 mm dia perforated GI pressure relief pipes 22.50 cm long</b> with one end closed with perforated GI plate and other end provided with alluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., <b>complete with all leads and lifts.</b>	Each	179.20	
		Labour Component (including contractor's profit and Overheads)	Each		48.90

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CAW-7-20	161	Providing and fixing <b>50 mm dia perforated GI pressure relief pipes 30 cm long</b> with one end closed with perforated GI plate and other end provided with alluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., <b>complete with all leads and lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	212.50	
			Each		48.90
IRR-CAW-7-21	162	Providing and fixing <b>50 mm dia perforated GI pressure relief pipes 45 cm long</b> with one end closed with perforated GI plate and other end provided with alluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., <b>complete with all leads and lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	275.50	
			Each		48.90
IRR-CAW-7-22	163	Providing and fixing <b>50 mm dia perforated GI pressure relief pipes 75 cm long</b> with one end closed with perforated GI plate and other end provided with alluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., <b>complete with all leads and lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	398.20	
			Each		48.90
IRR-CAW-7-23	164	Providing and fixing <b>100 mm dia perforated PVC pipes 40 cm long for Weep holes</b> including cost of all materials, labour, drilling 8 mm dia holes etc. <b>complete with all leads and lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	217.60	
			Each		24.40
IRR-CAW-7-24	165	<b>Drilling 32 mm dia pressure relief hole</b> below pressure relief pipe for bed and side lining of canal laid on rock including cost of all materials, machinery, labour etc., <b>complete with all leads and lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	272.30	
			Each		98.80
IRR-CAW-7-25	166	Providing and <b>forming 35 x 35 x 40 cm deep filter drain</b> consisting of 75 mm thick 10 mm down coarse aggregate around pressure relief pipe and 75 mm thick sand around coarse aggregate filter including cost of all materials, labour, excavation of pit etc., <b>complete with lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	27.60	
			Each		8.50
IRR-CAW-7-26	167	Providing and fixing <b>25 to 40 mm thick Shahabad / Talikota / other similar stone slabs with pointing and finishing joints</b> neatly in CM 1:3 proportion for canal / field channel lining including cutting slabs to required size, mixing mortar, finishing joints neatly, curing etc., <b>complete with lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	sqm	369.30	
			sqm		74.10
IRR-CAW-7-27	168	<b>Fixing PCC slabs</b> of various sizes in <b>CM 1 : 3 proportion to the side slopes of canal</b> including preparing bed, flush pointing joints in CM 1 : 3 propn, cost of all materials ( excluding PCC slabs ), labour, finishing, curing etc., <b>complete with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	sqm	86.50	
			sqm		69.00
IRR-CAW-7-28	169	<b>Fixing PCC lug slabs</b> of various sizes in <b>CM 1 : 3 proportion for supporting PCC slab lining</b> including necessary excavation, refilling, flush pointing joints in CM 1 : 3 propn, cost of all materials ( excluding PCC lug slabs ), labour, finishing, curing etc., <b>complete with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	Rm	51.00	
			Rm		46.20
IRR-CAW-7-29	170	<b>Fixing 30 cm height pre-cast drops for field channels</b> as directed including excavation, etc., <b>complete with all leads and lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	194.80	
			Each		194.70
IRR-CAW-7-30	171	Providing and fixing <b>LDPE sheet for bed and sides of canal</b> including cost of all materials, labour, laying, joining etc., <b>complete with all leads and lifts.</b> Using <b>500 micron</b> thick LDPE sheet. Labour Component (including contractor's profit and Overheads)	sqm	127.90	
			sqm		12.00
		If the surface on which the LDPE sheet is to be laid is too rough and undulating provide <b>75 mm thick sand backing</b> to LDPE sheet. For providing 75 mm thick Sand for backing add Labour Component (including contractor's profit and Overheads)	sqm	17.60	
			sqm		9.50
IRR-CAW-7-31	172	Providing and fixing <b>LDPE sheet for bed and sides of canal</b> including cost of all materials, labour, laying, joining etc., <b>complete with all leads and lifts.</b> Using <b>750 micron</b> thick LDPE sheet.	sqm	186.50	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
		Labour Component (including contractor's profit and Overheads)	sqm		16.90
IRR-CAW-7-32	173	Providing and fixing <b>LDPE sheet for bed and sides of canal</b> including cost of all materials, labour, laying, joining etc., complete <b>with all leads and lifts.</b>  Using <b>1000 micron</b> thick LDPE sheet.	sqm	254.70	
		Labour Component (including contractor's profit and Overheads)	sqm		22.60
IRR-CAW-7-33	174	Providing and fixing <b>12 mm thick 380 mm depth tarfelt expansion joint filler boards for stone masonry lining</b> of canal including cost of all materials, labour etc., <b>complete with all leads and lifts.</b>	Rm	191.20	
		Labour Component (including contractor's profit and Overheads)	Rm		8.50
IRR-CAW-7-34	175	Providing and fixing <b>20 mm thick 100 mm depth tarfelt expansion joint filler boards for cement concrete lining</b> of canal including cost of all materials, labour etc., <b>complete with all leads and lifts.</b>	Rm	80.10	
		Labour Component (including contractor's profit and Overheads)	Rm		8.50
IRR-CAW-7-35	176	Providing and fixing <b>20 mm thick 150 mm depth tarfelt expansion joint filler boards for cement concrete lining</b> of canal including cost of all materials, labour etc., <b>complete with all leads and lifts.</b>	Rm	118.00	
		Labour Component (including contractor's profit and Overheads)	Rm		8.50
IRR-CAW-7-36	177	Providing and forming <b>35 mm wide and 10 mm thick construction / contraction joints for concrete lining by mastic filler</b> including cost of all materials, labour etc., <b>complete with all leads and lifts.</b>	Rm	24.60	
		Labour Component (including contractor's profit and Overheads)	Rm		6.20
IRR-CAW-7-37	178	<b>Manufacturing 550 x 550 x 55 mm size PCC lining slabs in M-15 grade</b> ( 28 days cube compressive strength not less than 15 N /sqmm ) cement concrete using <b>20 mm down graded</b> coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc.,complete <b>with initial lead upto 50 m and all lifts.</b> ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.80 cum, Blending Ratio of CA : 65:35, FA : 0.45cum )	Each	94.20	
		Labour Component (including contractor's profit and Overheads)	Each		27.00
IRR-CAW-7-38	179	<b>Manufacturing 550 x 300 x 55 mm size PCC lug slabs in M-15 grade</b> ( 28 days cube compressive strength not less than 15 N / sqmm ) cement concrete using <b>20 mm down graded</b> coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc.,complete <b>with initial lead upto 50 m and all lifts.</b> ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.80 cum, Blending Ratio of CA : 65:35, FA : 0.45cum )	Each	66.80	
		Labour Component (including contractor's profit and Overheads)	Each		27.00
IRR-CAW-7-39	180	<b>Manufacturing 450 x 300 x 30 mm size PCC lining slabs in M-15 grade</b> ( 28 days cube compressive strength not less than 15 N / sqmm ) cement concrete using <b>10 mm down graded</b> coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc.,complete <b>with initial lead upto 50 m and all lifts.</b> ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.68 cum, FA : 0.43cum )	Each	34.60	
		Labour Component (including contractor's profit and Overheads)	Each		17.40
IRR-CAW-7-40	181	<b>Manufacturing 450 x 150 x 30 mm size PCC lug slabs in M-15 grade</b> ( 28 days cube compressive strength not less than 15 N / sqmm ) cement concrete using <b>10 mm down graded</b> coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc.,complete <b>with initial lead upto 50 m and all lifts.</b> ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.68 cum, FA : 0.43cum )	Each	26.90	
		Labour Component (including contractor's profit and Overheads)	Each		17.40
IRR-CAW-7-41	182	<b>Manufacturing 600 x 300 x 100mm size PCC lining slabs in M-15 grade</b> ( 28 days cube compressive strength not less than 15 N / Sqmm) cement concrete using <b>20 mm down grades</b> coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.80 cum, FA : 0.45cum, Blending Ratio of CA--65:35 )	Each	80.40	
		Labour Component (including contractor's profit and Overheads)	Each		17.20

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CAW-7-42	183	<b>Manufacturing 400 x 400 x 30 mm size PCC lining slabs in M-15 grade</b> ( 28 days cube compressive strength not less than 15 N / sqmm )cement concrete using <b>10 mm down graded</b> coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc., complete with initial lead upto 50 m and all lifts. ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.68 cum, FA : 0.43cum )	Each	36.70	
		Labour Component (including contractor's profit and Overheads)	Each	17.40	
IRR-CAW-7-43	184	<b>Manufacturing 400 x 150 x 30 mm size PCC lug slabs in M-15 grade</b> ( 28 days cube compressive strength not less than 15 N /sqmm ) cement concrete using <b>10 mm down graded</b> coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc., complete with initial lead upto 50 m and all lifts. ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.68 cum, FA : 0.43cum )	Each	26.30	
		Labour Component (including contractor's profit and Overheads)	Each	17.40	
IRR-CAW-7-44	185	Providing and <b>laying uncoursed rubble stone masonry</b> in CM 1 : 5 proportion for canal side lining using stones and chips from <b>approved quarry</b> including cost of all materials, machinery, labour, forming weep holes at specified intervals, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Thickness of the masonry assumed: 0.3 m, rubble stones : 0.96 cum, Stone Chips : 0.15cum,Through Stones 20 x 20 x 30cm : 1/sqm)	cum	1966.90	
		Labour Component (including contractor's profit and Overheads)	cum	664.50	
IRR-CAW-7-45	186	Providing and <b>laying uncoursed rubble stone masonry</b> in CM 1:5 proportion for canal side lining using stones from <b>approved quarry</b> including cost of all materials, machinery, labour, forming weep holes at specified intervals, finishing, curing etc., complete with <b>initial lead upto 50m and all lifts.(with no pin headers)</b> (Thickness of the Masonry assumed:0.3 m, rubble stones : 1.1 cum)	cum	3297.50	
		Labour Component (including contractor's profit and Overheads)	cum	2186.40	
IRR-CAW-7-46	187	Providing and <b>laying uncoursed rubble stone masonry</b> in CM 1 : 5 proportion for canal side lining using stones and chips from canal excavation including cost of all materials, machinery, labour, forming weep holes at specified interval, finishing, curing etc., complete with initial lead upto 50 m and all lifts.( rubble stones : 0.96 cum, Stone Chips : 0.15cum, Through Stones 20 x 20 x 30cm : 1/sqm)	cum	1841.40	
		Labour Component (including contractor's profit and Overheads)	cum	749.70	
IRR-CAW-7-47	188	Providing and <b>laying uncoursed rubble stone masonry</b> in CM 1:5 proportion for canal side lining using stones from canal excavation including cost of all materials, machinery, labour, forming weep holes at specified intervals, finishing, curing etc., complete with <b>initial lead upto 50m and all lifts.(with no pin headers)</b> ( rubble stones : 1.1cum, cement : 98kg, sand 0.34 cum)	cum	3094.30	
		Labour Component (including contractor's profit and Overheads)	cum	2186.40	
IRR-CAW-8		<b>ROCK PITCHING</b>			
IRR-CAW-8-1	189	Providing and <b>constructing 25 cm thick dry rubble stone pitching with pin headers at 2 per sqm</b> including cost of all materials, labour, hand packing, finishing etc., complete with <b>initial lead upto 50 m and all lifts.</b> ( rubble stones : 0.23 cum/sqm, Stone Chips : 0.0375cum/sqm, Pin Headers 30cm : 2/sqm)	sqm	199.70	
		Labour Component (including contractor's profit and Overheads)	sqm	51.70	
		If 15 cm thick murum bed is to be provided below pitching add	sqm	49.60	
		Labour Component (including contractor's profit and Overheads)	sqm	15.90	
IRR-CAW-8-1-A (New Item4 - 2011-12)	190	Providing and <b>constructing 22.5 cm thick dry rubble stone pitching with pin headers at 2 per sqm</b> including cost of all materials, labour, hand packing, finishing etc., complete with <b>initial lead upto 50 m and all lifts.</b> ( rubble stones : 0.207 cum/sqm, Stone Chips : 0.3375cum/sqm, Pin Headers 30cm : 2/sqm) <b>(For Maintenance Works)</b>	sqm	189.90	
		Labour Component (including contractor's profit and Overheads)	sqm	51.70	
IRR-CAW-8-2	191	Providing and <b>constructing 25 cm thick dry rubble stone pitching</b> including cost of all materials, labour, hand packing, finishing etc., complete with <b>initial lead upto 50 m and all lifts.(with no pin headers)</b> ( rubble stones : 0.33 cum/sqm)	sqm	222.80	
		Labour Component (including contractor's profit and Overheads)	sqm	123.40	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CAW-8-2 - A (New Item5 - 2011-12)	192	Providing and <b>constructing 225 mm thick dry rubble stone pitching</b> including cost of all materials, labour, hand packing, finishing etc., complete with <b>initial lead upto 50 m and all lifts.(with no pin headers)( rubble stones : 0.2475 cum/sqm) (For Maintenance Works)</b>	sqm	165.40	
		Labour Component (including contractor's profit and Overheads)	sqm		111.10
IRR-CAW-8-3	193	Providing and <b>constructing 30 cm thick dry rubble stone pitching with pin headers at 2 per sqm</b> including cost of all materials, labour, hand packing, finishing etc., complete with <b>initial lead upto 50 m and all lifts.( rubble stones : 0.275 cum/sqm, Stone Chips : 0.045cum/sqm, Pin Headers 30cm : 2/sqm)</b>	sqm	218.90	
		Labour Component (including contractor's profit and Overheads)	sqm		51.70
IRR-CAW-8-4	194	Providing and <b>constructing 30 cm thick dry rubble stone pitching</b> including cost of all materials, labour, hand packing, finishing etc., <b>complete with initial lead upto 50 m and all lifts.(with no pin headers)( rubble stones : 0.33 cum/sqm)</b>	sqm	267.30	
		Labour Component (including contractor's profit and Overheads)	sqm		148.20
IRR-CAW-8-5	195	Providing and <b>constructing 45 cm thick dry rubble stone pitching with pin headers at 2 per sqm</b> including cost of all materials, labour, hand packing, finishing etc., complete with <b>initial lead upto 50 m and all lifts.( rubble stones : 0.40 cum/sqm, Stone Chips : 0.0675cum/sqm, Pin Headers 45cm : 2/sqm)</b>	sqm	332.70	
		Labour Component (including contractor's profit and Overheads)	sqm		72.70
IRR-CAW-8-6	196	Providing and <b>constructing 45 cm thick dry rubble stone pitching</b> including cost of all materials, labour, hand packing, finishing etc., complete <b>with initial lead upto 50 m and all lifts.(with no pin headers)( rubble stones : 0.495 cum/sqm)</b>	sqm	401.00	
		Labour Component (including contractor's profit and Overheads)	sqm		222.10
IRR-CAW-8-7	197	Providing and <b>constructing 30 cm thick rubble stone pitching set in CM 1: 5 proportion with pin headers at 2 per sqm</b> including cost of all materials, labour, packing chips and mortar, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.( rubble stones : 0.275 cum/sqm, Stone Chips : 0.045cum/sqm, Pin Headers 30cm : 2/sqm)</b>	sqm	460.00	
		Labour Component (including contractor's profit and Overheads)	sqm		88.60
IRR-CAW-8-8	198	Providing and <b>Constructing 30 cm thick rubble stone pitching set in CM 1:5 Proportion</b> including cost of all materials,labour, packing chips and mortar ,finishing etc.. <b>complete( rubble stones : 0.33 cum/sqm )</b>	sqm	356.30	
		Labour Component (including contractor's profit and Overheads)	sqm		19.50
IRR-CAW-8-9	199	Providing and <b>constructing 30 cm thick dry khandki stone pitching using 20 to 25 cm size khandki stones with pin headers at 2 per sqm</b> including cost of all materials, labour, hand packing, finishing etc., complete with <b>initial lead upto 50 m and all lifts.( Khandki stones 20- 25 cm height : 1200 Nos/sqm, Stone Chips : 0.045cum/sqm, Pin Headers 30cm : 2/sqm)</b>	sqm	324.10	
		Labour Component (including contractor's profit and Overheads)	sqm		51.70
IRR-CAW-8-10	200	Providing and <b>constructing 45 cm thick dry khandki stone pitching using 25 to 30 cm size khandki stones with pin headers at 2 per sqm</b> including cost of all materials, labour, hand packing, finishing etc., complete with <b>initial lead upto 50 m and all lifts.( Khandki stones 25- 30 cm height : 1200 Nos/sqm, Stone Chips : 0.0675cum/sqm, Pin Headers 45cm : 2/sqm)</b>	sqm	329.20	
		Labour Component (including contractor's profit and Overheads)	sqm		72.70
IRR-CAW-8-11	201	Providing and <b>constructing 30 cm thick khandki stone pitching using 20 to 25 cm size khandki stones with pin headers at 2 per sqm set in CM 1 : 5 proportion with pointing joints in CM 1:3 proportion</b> including cost of all materials, labour, packing chips and mortar, finishing, curing etc. <b>complete with initial lead upto 50 m and all lifts.( Khandki stones 20- 25 cm height : 1200 Nos/sqm, Stone Chips : 0.045cum/sqm, Pin Headers 30cm : 2/sqm)</b>	sqm	553.60	
		Labour Component (including contractor's profit and Overheads)	sqm		84.60
IRR-CAW-8-12	202	Providing and <b>constructing 45 cm thick khandki stone pitching using 25 to 30 cm stones with pin headers at 2 per sqm set in CM 1 : 5 proportion with pointing joints in CM 1 : 3 proportion</b> including cost of all materials, labour, packing chips and mortar, finishing, curing etc., <b>complete with initial lead upto 50 m and all lifts.( Khandki stones 25- 30 cm height : 730 Nos/sqm, Stone Chips : 0.0675cum/sqm, Pin Headers 45cm : 2/sqm)</b>	sqm	649.10	
		Labour Component (including contractor's profit and Overheads)	sqm		116.10

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CAW-8-13	203	<b>Providing 10 cm thick approved type grass turfing to the side slopes of canal</b> including cost of all materials, labour, watering for minimum 15 days etc., complete <b>with lead 50 m and all lifts.</b> (FA : 2 cum/sqm)	sqm	100.70	
		Labour Component (including contractor's profit and Overheads)	sqm		66.80
IRR-CAW-8-14	204	<b>Providing 10 cm thick approved type grass turfing to the side slopes of canal</b> including cost of all materials, labour, watering for minimum 15 days etc., complete <b>with lead 50 m and all lifts.</b> <b>with no sand</b>	sqm	70.20	
		Labour Component (including contractor's profit and Overheads)	sqm		38.40
<b>Chapter IV</b>					
IRR-CCDW		<b>CANAL CROSS DRAINAGE WORKS</b>			
IRR-CCDW-1		<b>EXCAVATION &amp; FOUNDATION TREATMENT WORKS :</b>			
IRR-CCDW-1-1	205	(manual means of excavation and conveyance)  <b>Excavation in all kinds of soil</b> including boulders upto 0.30 m dia. for foundations of canal cross drainage and other appurtenant structures and placing the excavated stuff neatly in specified dump area or disposing off the same as directed etc., <b>complete with initial lead upto 50 m and initial lift upto 3 m.</b>	cum	251.40	
		Labour Component (including contractor's profit and Overheads)	cum		251.40
IRR-CCDW-1-2	206	Excavation for Structures- Mechanical Means ( Data adopted from MORTH)  <b>Earth work in excavation in all kinds of soils</b> of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material. ( depth upto 3 meters)	cum	93.90	
		Labour Component (including contractor's profit and Overheads)	cum		20.70
IRR-CCDW-1-3	207	(manual means of excavation and conveyance)  <b>Excavation in ordinary rock (including HDR) without blasting</b> including boulders above 0.3 m upto 0.60 m dia. for foundations of canal cross drainage and other appurtenant structures and placing the excavated stuff neatly in specified dump area or disposing off the same as directed etc., <b>complete with initial lead upto 50 m and initial lift upto 3 m.</b>	cum	365.00	
		Labour Component (including contractor's profit and Overheads)	cum		365.00
IRR-CCDW-1-4	208	( Data adopted from MORTH) (manual means of excavation and conveyance)  <b>Excavation in ordinary rock (including HDR) without blasting for foundations of canal cross drainage</b> and other appurtenant structures and placing the excavated stuff neatly in specified dump area or disposing off the same as directed etc., <b>complete with initial lead upto 50 m and initial lift upto 3 m.</b>	cum	120.60	
		Labour Component (including contractor's profit and Overheads)	cum		23.00
IRR-CCDW-1-5	209	(manual means of excavation after blasting and conveyance)  <b>Excavation in hard rock requiring blasting including boulders above 0.6 m upto 1.2 m dia. for foundations of canal cross drainage</b> and other appurtenant structures and placing the excavated stuff neatly in specified dump area or disposing off the same as directed etc., <b>complete with initial lead upto 50 m and initial lift upto 3 m.</b>	cum	362.60	
		Labour Component (including contractor's profit and Overheads)	cum		283.70
IRR-CCDW-1-6	210	(manual means of excavation after blasting and conveyance)  <b>Excavation in hard rock of all toughness by blasting</b> including boulders <b>above 1.2 m dia. for foundations of canal cross drainage</b> and other appurtenant structures and placing the excavated rock neatly in specified dump area or stack yard as directed etc., <b>complete with initial lead upto 50 m and initial lift upto 3 m.</b>	cum	551.20	
		Labour Component (including contractor's profit and Overheads)	cum		351.90

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CCDW-1-7	211	(manual means of excavation after controlled blasting and conveyance) Hard Rock ( blasting prohibited ) ( Data adopted from MORTH) <b>Excavation in hard rock with blasting ( blasting prohibited )prohibited for foundations of canal cross drainage and other appurtenant structures and placing the excavated rock neatly in or stack yard as directed etc., complete with specified dump area <b>initial lead upto 50 m and initial lift upto 3 m.</b></b> Labour Component (including contractor's profit and Overheads)	cum	1004.00	
			cum		352.80
IRR-CCDW-1-8	212	Providing and fixing 25 mm dia 2.50 m long cold twisted deformed steel anchor rods with 1.25 m length driven into 32 mm dia hole drilled in bed rock and remaining length embedded in concrete / masonry including cost of all materials, machinery, labour, drilling and cleaning hole, driving anchor rod, grouting hole with thick cement slurry etc., complete <b>with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	793.40	
			Each		218.50
IRR-CCDW-2		<b>STEEL AND CEMENT CONCRETE WORKS :</b>			
IRR-CCDW-2-1	213	Providing, fabricating and <b>placing in position reinforcement steel bars for RCC works</b> including cleaning, straightening, cutting, bending, hooking, lapping, welding wherever required,tying with 1.25 mm dia soft annealed steel wire, including cost of all materials, machinery, labour etc., complete <b>with initial lead upto 50 and all lifts.</b> Labour Component (including contractor's profit and Overheads)	kg	49.90	
			kg		8.60
IRR-CCDW-2-2	214	Providing, fabricating and <b>fixing in position structural steel cutting edge</b> consisting of 100 x 100 x 10 mm angle and 250 x 12 mm plate for sinking 4.50 m outer diameter foundation wells foundation wells including cost of all materials, machinery, labour, bending, welding, providing anchors etc., complete <b>with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	kg	67.30	
			kg		10.20
IRR-CCDW-2-3	215	Providing and <b>laying insitu vibrated M-15</b> ( 28 days cube compressive strength not less than 15 N /sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates for foundation filling including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts. (Cement content: 260 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA-- 50:30:20, FA : 0.40 cum)</b> Labour Component (including contractor's profit and Overheads)	cum	4604.60	
			cum		1306.10
IRR-CCDW-2-4	216	Providing and <b>laying insitu vibrated M-15</b> ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>80 mm down size</b> approved, clean, hard, graded aggregates for foundation filling including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts. (Cement content: 250 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.98cum, Blending Ratio of CA-- 35:30:20:15, FA : 0.35 cum)</b> Labour Component (including contractor's profit and Overheads)	cum	4589.90	
			cum		1360.40
IRR-CCDW-2-5	217	Providing and <b>laying insitu vibrated M-10</b> ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates for foundation filling including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts. (Cement content: 220 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA-- 50:30:20, FA : 0.40 cum)</b> Labour Component (including contractor's profit and Overheads)	cum	4284.60	
			cum		1248.30
IRR-CCDW-2-6	218	Providing and <b>laying insitu vibrated M-10</b> ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using <b>80 mm down size</b> approved, clean, hard, graded aggregates for foundation filling including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts. (Cement content: 220 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.98cum, Blending Ratio of CA-- 35:30:20:15, FA : 0.35 cum)</b> Labour Component (including contractor's profit and Overheads)	cum	4388.80	
			cum		1351.70

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CCDW-2-7	219	Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates for <b>foundation filling</b> including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts. (Cement content: 310 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)</b>	cum	5000.50	
		Labour Component (including contractor's profit and Overheads)			1373.00
IRR-CCDW-2-8	220	Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates for <b>sub-structure / super- structure works</b> including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.(Cement content: 320 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)</b>	cum	5419.20	
		Labour Component (including contractor's profit and Overheads)			1367.90
IRR-CCDW-2-9	221	Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates for <b>sub-structure / super- structure works</b> including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.(Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)</b>	cum	5414.90	
		Labour Component (including contractor's profit and Overheads)			1452.90
IRR-CCDW-2-10	222	Providing and laying <b>insitu vibrated M-15</b> ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates for <b>sub-structure / super- structure works</b> including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.(Cement content: 280 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)</b>	cum	5101.50	
		Labour Component (including contractor's profit and Overheads)			1455.50
IRR-CCDW-2-11	223	Providing and laying <b>insitu vibrated M-10</b> ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates for <b>sub-structure / super- structure works</b> including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts. (Cement content: 220 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)</b>	cum	4600.50	
		Labour Component (including contractor's profit and Overheads)			1352.90
IRR-CCDW-2-12	224	Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates for <b>well kerb</b> including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts. (Cement content: 350 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)</b>	cum	6673.50	
		If water is to be brought from other place add only lead charges @ 500 ltr / cum.			
		Labour Component (including contractor's profit and Overheads)			1755.40

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CCDW-2-13	225	<p>Providing and laying insitu vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates <b>for well steining</b> including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 320 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	6069.10	
		Labour Component (including contractor's profit and Overheads)	cum		1604.60
IRR-CCDW-2-14	226	<p>Providing and laying insitu M-15 ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates <b>for well bottom plug</b> by tremie or skip box method including cost of all materials, complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 350 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	4675.40	
		Labour Component (including contractor's profit and Overheads)	cum		1267.00
IRR-CCDW-2-15	227	<p>Providing and laying insitu vibrated M-15 ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates <b>for well top plug</b> including cost of all materials, machinery, labour, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 280 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltrs / cum</p>	cum	4322.80	
		Labour Component (including contractor's profit and Overheads)	cum		1242.30
IRR-CCDW-2-16	228	<p>Providing and laying insitu vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates <b>for well cap</b> including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	4792.70	
		Labour Component (including contractor's profit and Overheads)	cum		1264.10
IRR-CCDW-2-17	229	<p>Providing and laying insitu vibrated M-15 ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>80 mm down size</b> approved, clean, hard, graded aggregates <b>for piers and abutments</b> including cost of all materials, labour, machinery, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 250 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.98cum, Blending Ratio of CA--35:30:20:15, FA : 0.35 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	5540.20	
		Labour Component (including contractor's profit and Overheads)	cum		1678.20
IRR-CCDW-2-18	230	<p>Providing and laying insitu vibrated M-10 ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using <b>80 mm down size</b> approved, clean, hard, graded aggregates <b>for piers and abutments</b> including cost of all materials, labour, machinery, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 220 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.98cum, Blending Ratio of CA--35:30:20:15, FA : 0.35 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	5339.00	
		Labour Component (including contractor's profit and Overheads)	cum		1668.70

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CCDW-2-19	231	<p>Providing and laying insitu vibrated M-10 ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates <b>for piers and abutments</b> including cost of all materials, labour, machinery, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 220 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	5219.20	
		Labour Component (including contractor's profit and Overheads)	cum		1543.50
IRR-CCDW-2-20	232	<p>Providing and laying insitu vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates <b>for cantilever / counterfort retaining walls</b> including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 320 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	5986.80	
		Labour Component (including contractor's profit and Overheads)	cum		1597.90
IRR-CCDW-2-21	233	<p>Providing and laying insitu vibrated M-15 ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard, graded aggregates <b>with placing and sinking plums of size 150 to 80 mm upto 15 percent for gravity type retaining walls / piers / abutments etc.,</b> including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc.,complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 260 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.765cum, Blending Ratio of CA--50:30:20, FA : 0.34 cum, plums of size 150 to 80 mm : 0.25cum )</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	5288.90	
		Labour Component (including contractor's profit and Overheads)	cum		1496.70
IRR-CCDW-2-22	234	<p>Providing and laying insitu vibrated M-15 ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>40 mm down size</b> approved, clean, hard,graded aggregates <b>for cast in-situ pipes</b> including cost of all materials, machinery, labour, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b>(Cement content: 260 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	5007.90	
		Labour Component (including contractor's profit and Overheads)	cum		1413.70
IRR-CCDW-2-23	235	<p>Providing and laying insitu vibrated M-15 ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using <b>80 mm down size</b> approved, clean, hard, graded aggregates <b>for cast in-situ pipes</b> including cost of all materials, labour, machinery, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 250 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.98cum, Blending Ratio of CA--35:30:20:15, FA : 0.35 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	4987.60	
		Labour Component (including contractor's profit and Overheads)	cum		1467.10

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CCDW-2-24	236	<p>Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates <b>for deck slab &amp; kerb</b> including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	8073.50	
		Labour Component (including contractor's profit and Overheads)	cum	2100.60	
IRR-CCDW-2-25	237	<p>Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates <b>for columns and beams</b> including cost of all materials, labour, machinery, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	7105.80	
		Labour Component (including contractor's profit and Overheads)	cum	1917.60	
IRR-CCDW-2-26	238	<p>Providing and laying <b>insitu M- 20</b> ( 28 days cube compressive strength not less than 20 N / sqmm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates <b>for wearing coat</b> including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position in alternate panels, levelling, compacting, finishing, curing, packing joints with asphalt mortar etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	4707.10	
		Labour Component (including contractor's profit and Overheads)	cum	1296.30	
IRR-CCDW-2-27	239	<p>Providing and laying <b>insitu vibrated M-20</b> ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using <b>20 mm down size</b> approved, clean, hard, graded aggregates for troughs including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position,levelling, vibrating, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)</p> <p>If water is to be brought from other place add only lead charges @ 500 ltr / cum.</p>	cum	6488.20	
		Labour Component (including contractor's profit and Overheads)	cum	1779.60	
IRR-CCDW-3		<b>FOUNDATION WELL SINKING WORKS :</b>			
IRR-CCDW-3-1	240	<p><b>Sinking RCC wells vertically for foundation of piers and abutments in all kinds of soil, sand and soft rock</b> by approved well sinking method including cost of all materials, machinery, labour, kent - ledge arrangements, disposal of excavated material as disposal of excavated material as directed etc., complete <b>with lead upto 50 m for disposal of excavated material.(diameter of well 6.00m)</b> (Data adopted from MORTH)</p>	*Rm	3847.70	
		Labour Component (including contractor's profit and Overheads)	*Rm	1758.80	
		for 3 to 10 meters for each running meter	*Rm	5432.70	
		Labour Component (including contractor's profit and Overheads)	*Rm	2299.30	
IRR-CCDW-3-2	241	<p><b>Filling foundation wells with sand in layers of 25 to 30 cm</b> and compacting by watering, ramming as directed including cost of all materials, machinery, labour etc., complete <b>with initial lead upto 50 m and all lifts.</b></p>	cum	227.90	
		Labour Component (including contractor's profit and Overheads)	cum	114.50	
IRR-CCDW-4		<b>MASONRY WORKS :</b>			

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CCDW-4-1	242	Providing and <b>constructing un-coursed rubble stone masonry</b> with approved stones in CM 1 : 4 proportion for sub-structure portions of return walls / <b>abutments etc.</b> , including cost of all materials, machinery, labour, scaffolding, cleaning, packing cement mortar, wedging stone chips, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 143 kg / cum of masonry, rubble stones : 0.85cum, FA : 0.40 cum,Stone Chips : 0.15 cum)	cum	2211.40	
		Labour Component (including contractor's profit and Overheads)	cum	815.50	
IRR-CCDW-4-2	243	Providing and <b>constructing un-coursed rubble stone masonry</b> with approved stones in CM 1 : 4 proportion for super-structure portions of return walls / <b>abutments etc.</b> , including cost of all materials, machinery, labour, scaffolding, cleaning, packing cement mortar, wedging stone chips, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b> (Cement content: 143 kg / cum of masonry, rubble stones : 0.85cum, FA : 0.40 cum,Stone Chips : 0.15 cum)	cum	2264.50	
		Labour Component (including contractor's profit and Overheads)	cum	836.00	
IRR-CCDW-4-3	244	Providing and <b>constructing coursed rubble masonry second sort</b> in CM 1:4 proportion with stones from approved source including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, finishing, curing etc., complete <b>with initial lead upto 50 m and initial lift upto 3 m.</b> (Cement content: 133 kg / cum of masonry, rubble stones : 0.45cum, FA : 0.35 cum,Stone Chips : 0.15 cum, Khandki stones 25 x 25 x 30 cm : 180 Nos, Header stones 25 x 25x 45 cm : 60 Nos)	cum	2772.30	
		Labour Component (including contractor's profit and Overheads)	cum	934.90	
IRR-CCDW-4-4	245	Providing and <b>constructing coursed rubble masonry first sort</b> in CM 1:4 proportion with stones from approved source including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, finishing, curing etc., complete <b>with initial lead upto 50 m and initial lift upto 3 m.</b> (Cement content: 133 kg / cum of masonry, rubble stones : 0.45cum, FA : 0.35 cum,Stone Chips : 0.15 cum, Khandki stones 25 x 25 x 30 cm : 180 Nos, Header stones 25 x 25x 45 cm : 60 Nos)	cum	2912.10	
		Labour Component (including contractor's profit and Overheads)	cum	1074.70	
IRR-CCDW-4-5	246	<b>Providing cement mortar pointing to coursed rubble face stone masonry</b> in CM 1 : 2 proportion by volume including raking and cleaning joints for 50 mm depth, pressing cement mortar into joints, cost of all materials, labour, scaffolding, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b>	sqm	125.30	
	246		sqm	95.40	
IRR-CCDW-4-6	247	<b>Providing cement mortar pointing to coursed rubble face stone masonry</b> in CM 1 : 3 proportion by volume including raking and cleaning joints for 50 mm depth, pressing cement mortar into joints, cost of all materials, labour, scaffolding, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b>	sqm	116.90	
		Labour Component (including contractor's profit and Overheads)	sqm	95.40	
IRR-CCDW-4-7	248	<b>Providing 12 mm thick plastering in cement mortar 1:3</b> proportion by volume including cost of all materials, machinery, labour, scaffolding, cleaning joints, smooth finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b>	sqm	176.90	
		Labour Component (including contractor's profit and Overheads)	sqm	135.20	
IRR-CCDW-4-8	249	<b>Providing 12 mm thick plastering in cement mortar 1:4</b> proportion by volume including cost of all materials, machinery, labour, scaffolding, cleaning joints, smooth finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b>	sqm	167.10	
		Labour Component (including contractor's profit and Overheads)	sqm	135.20	
IRR-CCDW-4-9	250	<b>Providing 20 mm thick plastering in cement mortar 1:3</b> proportion by volume including cost of all materials, machinery, labour, scaffolding, cleaning joints, smooth finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b>	sqm	250.00	
		Labour Component (including contractor's profit and Overheads)	sqm	180.40	
IRR-CCDW-4-10	251	<b>Providing 20 mm thick plastering in cement mortar 1:4</b> proportion by volume including cost of all materials, machinery, labour, scaffolding, cleaning joints, smooth finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b>	sqm	233.70	
		Labour Component (including contractor's profit and Overheads)	sqm	180.40	
IRR-CCDW-5		<b>COPING &amp; RAILING WORKS :</b>			

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CCDW-5-1	252	Providing and fixing <b>10 cm thick roughly dressed burnt stone slabs for coping</b> set in CM 1 : 6 proportion by volume with pointing to <b>joints</b> in CM 1 : 3 proportion by volume including cost of all materials, machinery, labour, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 7.5 kg / sqm, FA : 0.030 cum/sqm, Burnt stone slab 10 cm thick 1.05 sqm/ sqm)	sqm	628.90	
		Labour Component (including contractor's profit and Overheads)			196.00
IRR-CCDW-5-2	253	Providing and fixing <b>10 cm thick one line dressed burnt stone slabs for coping</b> set in CM 1 : 6 proportion by volume with pointing to <b>joints</b> in CM 1 : 3 proportion by volume including cost of all materials, machinery, labour, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 7.5 kg / sqm, FA : 0.030 cum/sqm, Burnt stone slab 10 cm thick 1.05 sqm/ sqm)	sqm	785.70	
		Labour Component (including contractor's profit and Overheads)			352.80
IRR-CCDW-5-3	254	Providing and fixing <b>10 cm thick two line dressed burnt stone slabs for coping</b> set in CM 1 : 6 proportion by volume with pointing to <b>joints</b> in CM 1 : 3 proportion by volume including cost of all materials, machinery, labour, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 7.5 kg / sqm, FA : 0.030 cum/sqm, Burnt stone slab 10 cm thick 1.05 sqm/ sqm)	sqm	988.00	
		Labour Component (including contractor's profit and Overheads)			555.00
IRR-CCDW-5-4	255	Providing and <b>laying insitu M-15</b> ( 28 days cube compressive strength not less than 15 N / sqmm ) grade cement concrete using <b>20 mm down size</b> approved clean, hard, graded aggregates for coping slab including cost of all materials, machinery, labour, formwork, cleaning surface, batching, mixing, placing in position, levelling, compacting, finishing, curing etc., complete with initial lead upto 50 m and initial lift upto 3 m. (Cement content: 300 kg / cum with use of super plasticiser(0.4% by wt. of cement),CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)	cum	6222.40	
		Labour Component (including contractor's profit and Overheads)			1689.20
IRR-CCDW-5-5	256	Providing and <b>constructing protective railing</b> consisting of in-situ railing posts of size 15 x 15 cm at bottom, 10 x 10 cm at top and 75 cm height at 2 m centre to centre in <b>M-20</b> grade concrete using 20 mm down size graded aggregates and with each post reinforced by 4 Nos. of 8 mm dia main bars embedded in kerb concrete for a depth of 40 cm and 5 Nos. of 6 mm dia. stirrups including fixing 3 rows of 40 mm dia. GI pipes with one coat of red oxide primer and two coats of synthetic enamel paint, cost of all materials, machinery, labour, formwork, finishing, curing etc., complete with lead upto 50 m and all lifts.	Rm	1287.50	
		Labour Component (including contractor's profit and Overheads)			187.50
IRR-CCDW-6		<b>HUME PIPE LAYING &amp; JOINTING WORKS :</b>			
IRR-CCDW-6-1	257	Laying and jointing <b>300 mm dia. NP- 2 class or IRC standard hume pipes</b> in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 9.9 kg / joint, FA : 0.01cum/joint, Hemp Yarn : 0.091kg/joint)	Joint	330.80	
		Labour Component (including contractor's profit and Overheads)			261.30
IRR-CCDW-6-2	258	Laying and jointing <b>450 mm dia. NP- 2 class or IRC standard hume pipes</b> in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 17.4 kg / joint, FA : 0.022cum/joint, Hemp Yarn : 0.127kg/joint)	Joint	381.60	
		Labour Component (including contractor's profit and Overheads)			261.30
IRR-CCDW-6-3	259	Laying and jointing <b>600 mm dia. NP- 2 class or IRC standard hume pipes</b> in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 24.8 kg / joint, FA : 0.025cum/joint, Hemp Yarn : 0.22kg/joint)	Joint	497.20	
		Labour Component (including contractor's profit and Overheads)			323.80

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-CCDW-6-4	260	<b>Laying and jointing 700 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 32.1 kg / joint, FA : 0.031cum/joint, Hemp Yarn : 0.25kg/joint)</b>	Joint	545.20	
		Labour Component (including contractor's profit and Overheads)	Joint	323.80	
IRR-CCDW-6-5	261	<b>Laying and jointing 800 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 39.6 kg / joint, FA : 0.039cum/joint, Hemp Yarn : 0.31kg/joint)</b>	Joint	659.70	
		Labour Component (including contractor's profit and Overheads)	Joint	386.30	
IRR-CCDW-6-6	262	<b>Laying and jointing 900 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 44.6 kg / joint, FA : 0.045cum/joint, Hemp Yarn : 0.34kg/joint)</b>	Joint	693.60	
		Labour Component (including contractor's profit and Overheads)	Joint	386.30	
IRR-CCDW-6-7	263	<b>Laying and jointing 1000 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 49.5 kg / joint, FA : 0.05cum/joint, Hemp Yarn : 0.377kg/joint)</b>	Joint	767.20	
		Labour Component (including contractor's profit and Overheads)	Joint	426.10	
IRR-CCDW-6-8	264	<b>Laying and jointing 1100 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 56.9 kg / joint, FA : 0.058cum/joint, Hemp Yarn : 0.415kg/joint)</b>	Joint	816.70	
		Labour Component (including contractor's profit and Overheads)	Joint	426.10	
IRR-CCDW-6-9	265	<b>Laying and jointing 1200 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.(Cement content: 66.8 kg / joint, FA : 0.069cum/joint, Hemp Yarn : 0.453kg/joint)</b>	Joint	967.30	
		Labour Component (including contractor's profit and Overheads)	Joint	511.30	
IRR-CCDW-7		<b>BACK FILLING &amp; OTHER WORKS :</b>			
IRR-CCDW-7-1	266	<b>Providing rubble / boulder and sand filling behind abutment and return walls in layers including cost of all materials, machinery, labour, watering, ramming etc., complete with initial lead upto 50 m and initial lift upto 3 m.</b>	cum	634.50	
		Labour Component (including contractor's profit and Overheads)	cum	230.10	
IRR-CCDW-7-2	267	<b>Providing and filling murrum / gravelly soil ( CNS soil ) for foundation or around pipes including breaking clods, spreading in layers of 10 to 15 cm, watering, compaction by earth masters to achieve density control of not less than 95 percent etc., complete with lead upto 50 m and all lifts.</b>	cum	515.50	
		Labour Component (including contractor's profit and Overheads)	cum	290.60	
IRR-CCDW-7-3	268	<b>Providing and filling murum / gravelly soil ( CNS soil ) for foundation or above pipes including breaking clods, spreading in layers of 10 to 15 cm, watering, compaction by power roller to achieve density control of not less than 98 percent etc., complete with lead upto 50 m and all lifts.</b>	cum	358.30	
		Labour Component (including contractor's profit and Overheads)	cum	115.70	
IRR-CCDW-7-4	269	<b>Providing and fixing one line dressed 111x35x25 cm thick IRC standard kilometre stone in cement concrete M-10 grade with 40 mm down size aggregates including excavating pit of size 70x45x40 cm, embedding the stone by 30 cm in concrete, providing 2 coats synthetic enamel paint of approved quality and colour to exposed surfaces and lettering as directed, cost of all materials, labour, finishing, curing etc., complete with initial lead upto 50 m and all lifts.</b>	Each	1440.90	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
		Labour Component (including contractor's profit and Overheads)	Each		485.70
IRR-CCDW-7-5	270	Providing and fixing one line dressed <b>65x15x10 cm thick</b> IRC standard <b>hectometre stone in cement concrete M-10</b> grade with 40 mm down size aggregates including excavating pit of size 50x45x40 cm, embedding the stone by 30 cm in concrete, providing 2 coats synthetic enamel paint of approved quality and colour to exposed surfaces and lettering as directed, cost of all materials, labour, finishing, curing etc., complete <b>with initial lead upto 50 m and all lifts.</b>	Each	1048.60	
		Labour Component (including contractor's profit and Overheads)	Each		413.30
<b>Chapter V</b>					
<b>IRR-GAW</b>		<b>GATES / HOISTS AND ALLIED WORKS</b>			
IRR-GAW-1-1	271	<p><b>SPILLWAY RADIAL GATES</b></p> <p><b>E.M Parts and anchorages</b></p> <p>fabrication, supply, erection, testing and <b>commissioning of embedded parts for radial gate</b> consists of sill beam, wall plates, anchor girders , yoke girders, tie flats, trunnion supports etc., including cost of all materials, machinery, labour, welding, finishing, <b>with leads and lifts &amp;all accessories</b>            (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)</p>	tonne	142934.20	
		Labour Component (including contractor's profit and Overheads)	tonne		47166.00
IRR-GAW-1-2	272	<p><b>RADIAL GATES</b></p> <p>fabrication, supply, erection, testing and <b>commissioning of radial gate</b> consisting of skin plate, stiffeners, horizontal girders, radial arms, trunnion assemblies, tie beam, pulley supports, bracings, rubber seals, clamps etc., with all accessories for spillway/canals including cost of all materials, machinery, labour, seal fixing etc., <b>complete as per specifications and approved drawings</b>            (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)</p>	tonne	131718.40	
		Labour Component (including contractor's profit and Overheads)	tonne		36058.60
IRR-GAW-1-3	273	<p><b>RADIAL GATES-ROPE DRUM HOISTS WITH HOIST BRIDGES</b></p> <p>fabrication, supply, erection, testing and <b>commissioning of electrically operated rope drum hoist of adequate capacity</b> consisting of base frames, rope drums, connecting shaft, gear system, brake system, electric motor, wire ropes, gate position indicator, manual operation arrangement etc., with all accessories for spillway radial gate including cost of all materials, machinery, labour, greasing, providing hand railing and approach staircase with gate to hoist platform, <b>complete as per specifications and approved drawings</b>            (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)</p>	tonne capacity	43069.70	
		Labour Component (including contractor's profit and Overheads)	tonne capacity		2891.60
IRR-GAW-1-4	274	<p><b>RADIAL GATES</b></p> <p><b>Walk way(cat walk)</b></p> <p>Design, fabrication, supply, erection and <b>commissioning of 1 metre wide walkway connecting spillway piers / abutments</b> at trunnion platform level including cost of all materials, machinery, labour, cutting, etc., <b>complete as per specifications and approved drawings</b>            (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)</p>	Rm	99196.50	
		Labour Component (including contractor's profit and Overheads)	Rm		34366.80
IRR-GAW-2-1	275	<p><b>VERTICAL LIFT GATES-EM PARTS</b></p> <p>Design, fabrication, supply, erection and <b>commissioning of embedded parts</b> consisting of sill beam, slide tracks, seal seats, guide rails, dogging sets for storage of stoplog elements etc., with all accessories for spillway stop log gates and other vertical lift elements including cost of all materials, machinery, labour, etc., <b>complete as per specifications and approved drawings</b>            (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)</p>	tonne	159095.50	
		Labour Component (including contractor's profit and Overheads)	tonne		56162.30

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
		<b><u>vertical lift gates and stop log gate elements ( SLIDING GATES)</u></b>			
IRR-GAW-2-2	276	Design, fabrication, supply, erection, testing and <b>commissioning of vertical lift gates and stoplog gate elements</b> , consisting of skin plate, horizontal and vertical girders, stiffeners, lifting pins, bronze padded slide blocks/bearings, guide shoes, rubber seals, clamps etc., with all accessories including cost of all materials, machinery, labour, seal fixing etc., <b>complete as per specifications and approved drawings</b>  (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)	tonne	130832.90	
		Labour Component (including contractor's profit and Overheads)	tonne		41339.30
		<b><u>STOP LOGS-automatic lifting beam</u></b>			
IRR-GAW-2-3	277	fabrication, supply, erection, testing and <b>commissioning of automatic lifting beam</b> with all accessories for handling, lowering and lifting of spillway stop log gate elements including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, etc., <b>complete as per specifications and drawings with all leads and lifts</b> .  (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)	tonne	112246.20	
		Labour Component (including contractor's profit and Overheads)	tonne		21049.90
		<b><u>MOVING GANTRY CRANE-CLASS II</u></b>			
IRR-GAW-2-4	278	fabrication, supply, erection, testing and <b>commissioning of adequate capacity Class- II type moving gantry crane</b> consisting of rail mounted gantry frame, top platform with hand railing, long / cross travel arrangements, rope drums, gear systems, electric motors, electro-magnetic brake system, cabin, control panel, wire rope, ladder, motorised cable reeling drum etc., with all accessories for operating spillway stop log gate elements and river sluice / canal sluice emergency gates including cost of all materials, machinery, labour, etc., <b>complete with all leads and lifts</b> .  (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)	tonne capacity	233333.40	
		Labour Component (including contractor's profit and Overheads)	tonne capacity		21246.50
		<b><u>RAIL TRACK FOR GANTRY CRANE</u></b>			
IRR-GAW-2-5	279	Design, fabrication, supply, erection and <b>commissioning of rail track using 45 kg / m standard rails on spillway bridge</b> for movement of gantry crane for handling and operating spillway stoplog gate elements / river sluice / canal sluice emergency gate including cost of all materials, machinery, labour, <b>complete as per specifications</b>  (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)	Rm	7241.90	
		Labour Component (including contractor's profit and Overheads)	Rm		523.00
		<b><u>VERTICAL LIFT GATES/STOP LOGS - ROLLER MOUNTED</u></b>			
IRR-GAW-2-6	280	Design, fabrication, supply, erection, testing and <b>commissioning of fixed wheel type vertical lift service gate</b> consisting of skin plate, vertical and horizontal girders, wheels, stiffeners, lifting brackets, guide rollers, ballast blocks, teflon cladded rubber seals etc., with all accessories for river sluice / canal sluice vent including cost of all materials, machinery, labour,welding ,aligning finishing seal fixing etc.with all leads and lifts, <b>complete as per specifications and approved drawings</b>  (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)	tonne	131572.10	
		Labour Component (including contractor's profit and Overheads)	tonne		39314.30

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-GAW-2-7	281	<b><u>VERTICAL LIFT GATES-ROPE DRUM HOIST UPTO 30 TON CAP. POWER OPERATED</u></b> Design, fabrication, supply, erection, testing and <b>commissioning of adequate capacity rope drum hoist</b> consisting of hoist platform, rope drum, gear system, electric motor, electro-magnetic brake system, hand operation assembly, control panel, wire rope, pulleys, ladder etc., with all accessories for operating river sluice / canal sluice service gate including cost of all materials, machinery, labour, , <b>complete as per specifications and drawings with all leads and lifts</b> (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per scedule of rates under items in this chapter and add as applicable separately)	tonne capacity	72473.10	
		Labour Component (including contractor's profit and Overheads)	tonne capacity	2764.90	
IRR-GAW-2-8	282	<b><u>HOIST BRIDGE/ WITH TRESSELS</u></b> Design, fabrication, supply, erection and <b>commissioning of structural steel hoist bridge</b> consisting of columns, beams, bracings, stiffeners, ties, chequered plate covering, hand railing, ladder etc., with all accessories for supporting rope drum hoist for operating barrage gates including cost of all materials, machinery, labour, welding, finishing, etc., complete complete as per specifications and drawings <b>with all leads and lifts</b> (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per scedule of rates under items in this chapter and add as applicable separately)	tonne	113219.80	
		Labour Component (including contractor's profit and Overheads)	tonne	35595.40	
IRR-GAW-2-9	283	<b><u>ROPE DRUM HOIST WITHOUT HOIST BRIDGE FOR BARRAGE GATES</u></b> Design, fabrication, supply, erection, testing and <b>commissioning of adequate capacity rope drum hoist</b> consisting of rope drum, pulleys, gear system, electric motor, electro-magnetic brake system, manual operation assembly, position indicator, control panel, wire rope etc., with all accessories for operating vertical lift roller gates for barrage including cost of all materials, machinery, labour, cutting, bending, aligning, anchoring, welding, finishing etc., <b>complete with all leads and lifts</b> . (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per scedule of rates under items in this chapter and add as applicable separately)	tonne capacity	35877.10	
		Labour Component (including contractor's profit and Overheads)	tonne capacity	1172.70	
IRR-GAW-2-10	284	<b><u>SCREW GEAR HOISTS INCLUDING PLATFORM ( UPTO 10 TON CAP)</u></b> Design, fabrication, supply, erection, testing and <b>commissioning of adequate capacity screw gear type hoist</b> consisting of supporting structure, platform, ladder etc., with all accessories for operating canal escape / regulator gate including cost of all materials, machinery, labour, cutting, bending, aligning, anchoring, welding,finishing etc., <b>complete with all leads and lifts</b> . (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per scedule of rates under items in this chapter and add as applicable separately)	tonne capacity	33670.90	
		Labour Component (including contractor's profit and Overheads)	tonne capacity	5306.40	
IRR-GAW-2-11	285	<b><u>MANUAL OPERATED ROPE DRUM HOISTS</u></b> Design, fabrication, supply, erection, testing and <b>commissioning of adequate capacity manually operated rope drum hoist</b> consisting of hoist platform, rope drum, gear system, brake system, wire rope, ladder etc., with all accessories for operating canal regulator radial gate including cost of all materials, machinery, labour, welding, finishing, cleaning, ., <b>complete with all leads and lifts</b> (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per scedule of rates under items in this chapter and add as applicable separately)	tonne capacity	75881.30	
		Labour Component (including contractor's profit and Overheads)	tonne capacity	7095.30	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-GAW-2-12 New Item2015-16-2	286	<b>OT SLUICE SHUTTERS Screw Gear Hoist Including Platform for below 5 Tons Capacity (Small Gates)</b> <u>As per Guidelines of Chief Engineer, Central Designs Organization, Hyderabad Specification drawing for Krishna Delta System</u> Fabrication, supply, erection, testing and commissioning of Embedded parts consisting of supporting structure, platform etc. with all accessories for operating canal escape/ regulator gate with all accessories including cost of all materials, machinery, labour, cutting, bending, aligning, anchoring, welding, finishing etc. complete as per Specification and approved drawings (without painting on mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)	Tonne	124482.90	
		Labour Component (including contractor's profit and Overheads)	Tonne	26508.20	
IRR-GAW-2-13 New Item2015-16-3	287	<b>OT SLUICE SHUTTERS EM parts for Below 5 Tons capacity (small gates)</b> <u>As per Guidelines of Chief Engineer, Central Designs Organization, Hyderabad Specification drawing for Krishna Delta System</u> Fabrication, supply, erection, testing and commissioning of Embedded parts consisting of sil beam, slide tracks, seal seats, Guide plates etc. with all accessories including cost of all materials, machinery, labour, etc. complete as per specifications and approved drawings. (without painting on mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)	Tonne	75583.10	
		Labour Component (including contractor's profit and Overheads)	Tonne	22068.10	
IRR-GAW-2-14 New Item2015-16-4	288	<b>OT SLUICE SHUTTERS for Below 5 Tons capacity (small gates)</b> <u>As per Guidelines of Chief Engineer, Central Designs Organization, Hyderabad Specification drawing for Krishna Delta System</u> Fabrication, supply, erection, testing and commissioning of Sluice Shutters consisting of skin plate, horizontal and vertical angles, stiffeners, rubber seals, clamps with all accessories for sluice shutters including cost of all materials, machinery, labour, seal fixing etc., complete as per specifications and approved drawings (without painting on mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)	Tonne	199256.10	
		Labour Component (including contractor's profit and Overheads)	Tonne	11234.70	
IRR-GAW-3		<b>SAND BLASTING AND PAINTING</b>			
IRR-GAW-3-1	289	<b>Cleaning gates / hoists / embedded parts/lifting beams etc, to expose fresh metal surface for painting by sand blasting method</b> as per specifications including cost of all materials, labour, machinery, scaffolding, etc., complete with initial lead for sand upto 1 km and all lifts.	sqm	269.40	
		Labour Component (including contractor's profit and Overheads)	sqm	98.70	
IRR-GAW-3-2	290	<b>painting of embedded metal parts and all types of gates</b> , stoplogs,etc, on sand blasted surfaces with <b>one coat</b> of inorganic zinc silicate (airless spray preferred)70+/- 5 and <b>two super coats</b> with a total thickness of 300 microns (each 150+/- 5) of solventless coaltar epoxy paint each coat 150 microns ( total 300 microns) cost of all materials, labour, scaffolding etc., complete with all leads and all lifts  <b>(Upstream surface of gates portion may be painted with solventless coaltar epoxy brown paint instead of solventless coaltar black. The rate for coaltar epoxy brown shall be adopted in data for Upstream side painting)</b>	sqm	507.60	
		Labour Component (including contractor's profit and Overheads)	sqm	209.80	
IRR-GAW-3-3	291	<b>painting of Lifting beams,cat walks and other similar structures</b> -painting hoist machinery, on sand blasted surfaces with <b>two coats</b> of zinc phosphate primer (airless spray preferred) 40microns/coat and <b>two coats</b> of alkyd based micaceous iron oxide paint , 65 microns/coat cost of all materials, labour, scaffolding etc., complete with all leads and all lifts	sqm	364.40	
		Labour Component (including contractor's profit and Overheads)	sqm	161.00	
IRR-GAW-3-4	292	<b>HOISTS:STRUCTURAL COMPONENTS--</b> painting structurals on sand blasted surfaces with <b>two coats</b> of zinc phosphate primer (airless spray preferred) 40microns/coat and <b>one coat</b> 65+/- 5 of alkyd based micaceous iron oxide paint followed by <b>two coats</b> of synthetic enamel paint 25 microns/coat cost of all materials, labour, scaffolding etc., complete with all leads and all lifts	sqm	457.00	
		Labour Component (including contractor's profit and Overheads)	sqm	209.80	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-GAW-3-5	293	<b>HOISTS:machineryCOMPONENTS--</b> <b>painting hoist machinery, on sand blasted surfaces with one coats of zinc phosphate primer (airless spray preferred) 50microns/coat and three coats of aluminium paint or synthetic enamel , 25 microns/coat cost of all materials, labour, scaffolding etc., complete with all leads and all lifts</b> Labour Component (including contractor's profit and Overheads)	sqm	413.10	
IRR-GAW-4		<b>PAINTING WITHOUT SAND BLASTING</b>			
IRR-GAW-4-1	294	<b>E.M Parts OF ALL TYPES OF GATES</b> Surface cleaning of metal surfaces by chemical cleaners and then by hand and power tool cleaners and removing dust. After cleaning, applying primary coat with <b>one coat of Protective Mastic</b> to a thickness of 70+5 microns , followed by finishing coats <b>2 coats</b> with coal tar epoxy each coat with a DFT of 150+5 microns and total DFT of all coats including Primary coat should not be less than 350 microns with material, labour and all accessories with all leads and lifts (in respect of Heavily rusted (30 to 40% rusted) surfaces) Labour Component (including contractor's profit and Overheads)	sqm	583.20	
IRR-GAW-4-2		Deleted from the year 2015-16 onwards			
IRR-GAW-4-3	295	<b>HOIST BRIDGES ,HOISTING EQUIPMENT AND CRANES,Etc,</b> Surface cleaning of metal surfaces by chemical cleaners and then by hand and power tool cleaners and removing dust. After cleaning, applying primary coat with <b>two coats of Zinc chromite red oxide primer</b> , followed by finishing coats <b>3 coats with synthetic enamel paint</b> with material, labour, and all accessories with all leads and lifts where surface cleaning by sand blasting is not feasible and based on specific recommendations of designers, it is to adopt surface preparation done manually by hand and power tool after cleaning by chemical treatment to remove grease, rust, scaling etc., and to form phosphate coating to prevent further rusting, before applying primer painting. Labour Component (including contractor's profit and Overheads)	sqm	429.40	
IRR-GAW-4-4	296	<b>WALK WAYS( CAT WALKS), LIFTING BEAMS,etc,</b> Surface cleaning of metal surfaces by chemical cleaners and then by hand and power tool cleaners and removing dust. After cleaning, applying primary coat with <b>one coat of Zinc rich epoxy primer</b> to a thickness of 40 microns , followed by finishing coats <b>2 coats with coal tar epoxy</b> with material, labour, and all accessories with all leads and lifts Labour Component (including contractor's profit and Overheads)	sqm	485.70	
Chapter VI					
IRR-PMW		<b>PRELIMINARY AND MAINTENANCE WORKS</b>			
IRR-PMW-1		<b>JUNGLE CLEARANCE :</b>			
IRR-PMW-1-1	297	<b>Clearing thin jungle growth ( more than 50 percent open space )</b> including bushes upto 30 cm / parthenium and other weeds including burning or disposing off the same as directed etc., complete. Labour Component (including contractor's profit and Overheads)	sqm	1.40	
				1.50	
IRR-PMW-1-2	298	<b>Clearing thick jungle growth ( less than 50 percent open space )</b> including bushes upto 30 cm / parthenium and other weeds including burning or disposing off the same as directed etc., complete. Labour Component (including contractor's profit and Overheads)	sqm	2.20	
				2.30	
IRR-PMW-1-3	299	<b>Removing stumps, tree roots, roots of bamboo clusters etc., upto 1.50 m girth</b> including excavation, stacking the materials neatly and levelling the surface etc., complete <b>with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	51.30	
				51.20	
IRR-PMW-1-4	300	<b>Removing stumps, tree roots, roots of bamboo cluster etc., with girth above 1.50 m and upto 3.0 m</b> including excavation, stacking the materials neatly and levelling the area etc., <b>complete with initial lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	115.40	
				115.40	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-PMW-1-5	301	<b>Removing stumps, tree roots, roots of bamboo cluster etc., with girth above 3.0 m and upto 5.0 m including excavation, stacking the materials neatly and levelling the area etc., complete with initial lead upto 50 m and all lifts.</b>	Each	369.20	
		Labour Component (including contractor's profit and Overheads)	Each		369.20
IRR-PMW-1-6	302	<b>Additional rate for every 0.5 m increase in girth of tree stump/stumps of bamboo cluster beyond 5 m</b>	Each	65.80	
		Labour Component (including contractor's profit and Overheads)	Each		65.80
IRR-PMW-1-7	303	<b>Cutting and stacking bamboos excluding removing stumps and roots etc., complete with initial lead upto 50 m and all lifts.</b>	Each	15.00	
		Labour Component (including contractor's profit and Overheads)	Each		15.00
IRR-PMW-1-8	304	<b>Cutting and removing jaufiflora bushes upto 1.5 m girth excluding removal of stumps and including burning or disposing off the materials as directed with initial lead upto 50 m and all lifts.</b>	Each	14.50	
		Labour Component (including contractor's profit and Overheads)	Each		14.50
IRR-PMW-1-9	305	<b>Cutting and removing jaufiflora bushes above 1.5 m upto 3.0 m girth excluding removal of stumps and including burning or disposing off the materials as directed with initial lead upto 50 m and all lifts.</b>	Each	29.00	
		Labour Component (including contractor's profit and Overheads)	Each		29.00
IRR-PMW-1-10	306	<b>Cutting trees above 0.3 m and upto 0.6 m girth excluding removal of stumps and including stacking the materials neatly as directed with initial lead upto 50 m and all lifts.</b>	Each	97.40	
		Labour Component (including contractor's profit and Overheads)	Each		94.30
IRR-PMW-1-11	307	<b>Cutting trees above 0.6 m and upto 1.2 m girth excluding removal of stumps and including stacking the materials neatly as directed with initial lead upto 50 m and all lifts.</b>	Each	340.80	
		Labour Component (including contractor's profit and Overheads)	Each		330.20
IRR-PMW-1-12	308	<b>Cutting trees above 1.2 m and upto 1.8 m girth excluding removal of stumps and including stacking the materials neatly as directed with initial lead upto 50 m and all lifts.</b>	Each	681.70	
		Labour Component (including contractor's profit and Overheads)	Each		660.40
IRR-PMW-1-13	309	<b>Cutting trees above 1.8 m and upto 2.4 m girth excluding removal of stumps and including stacking the materials neatly as directed with initial lead upto 50 m and all lifts.</b>	Each	1363.40	
		Labour Component (including contractor's profit and Overheads)	Each		1320.80
IRR-PMW-1-14	310	<b>Cutting trees above 2.4 m and upto 3.0 m girth excluding removal of stumps and including stacking the materials neatly as directed with initial lead upto 50 m and all lifts.</b>	Each	2201.30	
		Labour Component (including contractor's profit and Overheads)	Each		2116.10
IRR-PMW-1-15	311	<b>For every 0.5 m increase in girth of tree beyond 3 m add Additional rate for cutting tree for every 0.5 m increase in girth of tree beyond 3 m.</b>	Each	772.60	
		Labour Component (including contractor's profit and Overheads)	Each		747.00
IRR-PMW-1-16	312	<b>Cutting and burning or disposing off Apu / Jondu from marshy areas as directed with initial lead upto 50 m and all lifts.</b>	sqm	5.30	
		Labour Component (including contractor's profit and Overheads)	sqm		5.30
IRR-PMW-2		<b>PRELIMINARY WORKS :</b>			
IRR-PMW-2-1	313	<b>Earthwork excavation for trial pits / borrow pits and other investigation works in all kinds of soil including boulders upto 30 cm dia and disposing off excavated soil as directed with lead upto 10 m and lift upto 3 m.</b>	cum	264.20	
		Labour Component (including contractor's profit and Overheads)	cum		264.20
IRR-PMW-2-2	314	<b>Earthwork excavation for trial pits / borrow pits and other investigation works in soft rock including disposing off the excavated rock as directed with lead upto 10 m and lift upto 3 m.</b>	cum	369.20	
		Labour Component (including contractor's profit and Overheads)	cum		369.20

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-PMW-2-3	315	<b>Conducting geophysical investigation studies by electrical resistivity method</b> in stages of 5m for sub-surface details such as depth of formations, shear zones, classification of strata, depth of water table etc., including cost of all materials, equipments, labour, analysing and reporting the details of field studies conducted etc., <b>complete excluding cost of transportation arrangements.</b> Labour Component (including contractor's profit and Overheads)	stage	318.10	
IRR-PMW-2-4	316	<b>Drilling 80 mm dia hole through over-burden using casing shoe bit</b> vertical or inclined upto 10 degrees to vertical as directed including cost of all materials, machinery, labour, water charges, reaming, collection of wash samples at suitable intervals, logging and lebelling, supplying honne wood core box, <b>fixing casing pipes ( excluding cost of casing pipes ) etc., complete for depth upto 30 m from surface.</b> 1. For drilling through over-burden beyond 30 m from surface increase the rate per Rm by 10 percent. 2. For providing HDPE or light black MS casing pipe add the cost of pipe per Rm. Labour Component (including contractor's profit and Overheads)	Rm	1206.50	
IRR-PMW-2-5	317	<b>Drilling 76 mm dia ( NX ) core hole in hard rock using diamond core bit</b> vertical / inclined upto 10 degree to vertical as directed including cost of all materials, machinery, labour, water charges, collection of core samples, logging and lebelling, supplying honne wood core box and redrilling in case of collapse of sides etc., <b>complete for depth upto 30 m from surface.</b> 1. For drilling in hard rock beyond 30 m upto 60 m from surface increase the rate per Rm by 25 percent. 2. For drilling in hard rock beyond 60 m upto 90 m from surface increase the rate per Rm by 40 percent. Labour Component (including contractor's profit and Overheads)	Rm	6062.20	
IRR-PMW-2-5-A (New Item2015-16)-5	318	<b>Drilling 76 mm dia ( NX ) core hole in all types of rocks (other than Hard Rock) including Masonry/CC (where drilling is not possible by casing shoe)</b> using diamond core bit vertical / inclined upto 10 degree to vertical as directed including cost of all materials, machinery, labour, water charges, and redrilling in case of collapse of sides etc., complete for depth upto 30 m from surface <b>for Primary and Secondary Holes</b> 1. For drilling in all types of rocks (other than hard rock) including masonry/CC beyond 30 m upto 60 m from surface increase the rate per Rm by 25 percent. 2. For drilling in all types of rocks (other than hard rock) including masonry/CC beyond 60 m upto 90 m from surface increase the rate per Rm by 40 percent. Labour Component (including contractor's profit and Overheads)	Rm	3879.90	
IRR-PMW-2-5-B (New Item2015-16)-6	319	<b>Drilling 76 mm dia ( NX ) core hole in all types of rocks (other than Hard Rock) including Masonry/CC (where drilling is not possible by casing shoe)</b> using diamond core bit vertical / inclined upto 10 degree to vertical as directed including cost of all materials, machinery, labour, water charges, collection of core samples, logging and lebelling, supplying honne wood core box and redrilling in case of collapse of sides etc., complete for depth upto 30 m from surface <b>for Test Holes</b> 1. For drilling in all types of rocks (other than hard rock) including masonry/CC beyond 30 m upto 60 m from surface increase the rate per Rm by 25 percent. 2. For drilling in all types of rocks (other than hard rock) including masonry/CC beyond 60 m upto 90 m from surface increase the rate per Rm by 40 percent. Labour Component (including contractor's profit and Overheads)	Rm	4667.40	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-PMW-2-6	320	<b>Drilling 47 mm (BX )dia core hole in hard rock using diamond core bit vertical / inclined upto 10 degree to vertical as directed including cost of all materials, machinery, labour, water charges, collection of core samples, logging, levelling, supplying honne wood core box and redrilling in case of collapse of sides etc., complete for depth upto 30 m from surface.</b>  1. For drilling in hard rock beyond 30 m upto 60 m from surface increase the rate per Rm by 25 percent. 2. For drilling in hard rock beyond 60 m upto 90 m from surface increase the rate per Rm by 40 percent.	Rm	5901.60	
		Labour Component (including contractor's profit and Overheads)	Rm	1798.40	
IRR-PMW-2-6-A (New Item2015-16)-7	321	<b>Drilling 47 mm (BX )dia core hole in all types of rocks (other than Hard Rock) including Masonry/CC (where drilling is not possible by casing shoe) using diamond core bit vertical / inclined upto 10 degree to vertical as directed including cost of all materials, machinery, labour, water charges, and redrilling in case of collapse of sides etc., complete for depth upto 30 m</b>  1. For drilling in all types of rocks (other than hard rock) including masonry/CC beyond 30 m upto 60 m from surface increase the rate per Rm by 25 percent. 2. For drilling in all types of rocks (other than hard rock) including masonry/CC beyond 60 m upto 90 m from surface increase the rate per Rm by 40 percent.	Rm	3652.10	
		Labour Component (including contractor's profit and Overheads)	Rm	1073.10	
IRR-PMW-2-7	322	<b>Providing and fixing 20 x 20 x 75 cm size roughly dressed boundary / demarcation / chainage / arrow stones including cost of all materials, labour, engraving marks, fixing in position, murum filling etc., complete with lead upto 50 m and all lifts.</b>	Each	159.30	
		Labour Component (including contractor's profit and Overheads)	Each	122.80	
IRR-PMW-2-8	323	<b>Providing and fixing 20 x 20 x 75 cm size temporary bench mark stone in CC 1 : 4 : 8 using 40 mm down size graded coarse aggregate including cost of all materials, labour, dressing top surface, engraving BM data etc., complete with lead upto 50 m and all lifts.</b>	Each	510.50	
		Labour Component (including contractor's profit and Overheads)	Each	361.90	
NOTE:		For providing 30 cm thick compacted murum bed in B.C soil area including additional excavation for thickness of murum bedding add per	Each	4.00	
IRR-PMW-2-9	324	<b>Providing and fixing 20 x 20 x 75 cm size permanent bench mark stone in CC 1 : 3 : 6 block of size 90 x 90 x 120 cm using 40 mm down size graded coarse aggregate and providing 35 cm thick 30 cm high UCR masonry in CM 1 : 5 proportion protective wall alround the BM stone, including cost of all materials, labour, dressing top surface of stone, engraving BM data</b>	Each	6286.00	
		Labour Component (including contractor's profit and Overheads)	Each	3206.80	
IRR-PMW-3		<b>MAINTENANCE WORKS :</b>			
IRR-PMW-3-1	325	<b>Removing dry stone rock-toe / rivetment and filter layers below rock-toe/ rivetment including stacking all materials separately as directed with initial lead upto 50 m and all lifts.</b>	cum	212.60	
		Labour Component (including contractor's profit and Overheads)	cum	212.60	
IRR-PMW-3-2	326	<b>Re-constructing 60 cm thick hand packed rough stone revetment with through stones at 1.5 m c / c over a backing of 45 cm thick graded filter media consisting of sand, 10 mm and 40 mm size graded aggregates satisfying filter criteria laid in layers of 15 cm thick each using sand from approved quarry and stones and filter aggregates obtained from revetment removed for re-construction including cost of all machinery, labour, laying filter and stones to specified slopes, wedging with chips, finishing etc. complete with initial lead upto 50 m and all lifts.</b>	sqm	175.60	
		Labour Component (including contractor's profit and Overheads)	sqm	159.10	
IRR-PMW-3-3	327	<b>Re-constructing dry rubble rock-toe and filter media for rock-toe consisting of sand 20 mm and 80 mm size graded aggregates satisfying filter criteria laid in layers of 15 cm thick each using sand from approved quarry and stones and filter aggregates obtained from rock-toe removed for re-construction including cost of all machinery, labour, laying filter and stones to specified slopes, wedging with chips, finishing etc. complete with initial lead upto 50 m and all lifts.</b>	cum	238.40	
		Labour Component (including contractor's profit and Overheads)	cum	227.80	

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-PMW-3-4	328	<b>Removing and resetting disturbed Yarguntia / Shahabad / Talikot / PCC / Other types of slab lining set in CM 1 : 3 including flush cement mortar pointing in CM 1 : 3 with lead upto 50 m and all lifts.</b> Labour Component (including contractor's profit and Overheads)	sqm	61.00	
			sqm		54.50
IRR-PMW-3-5	329	<b>Removing and resetting disturbed dry rubble / khandki stone pitching 25 to 45 cm thick including packing, wedging, finishing etc., complete with all leads and lifts.</b> Labour Component (including contractor's profit and Overheads)	sqm	56.20	
			sqm		56.20
IRR-PMW-3-6	330	<b>Removing and refixing disturbed chainage / demarcation / hectometre / guard stones including excavation, back filling etc., complete with all leads and lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	72.60	
			Each		72.60
IRR-PMW-3-7	331	<b>Removing and refixing disturbed km stone / sign board / hecto-metre stone etc., including excavation, back filling with available stuff after refixing, forming base platform of size 90 x 90 x 7.5 cm including watering, ramming etc complete with all leads and lifts.</b> Labour Component (including contractor's profit and Overheads)	Each	163.30	
			Each		163.30
IRR-PMW-3-8	332	<b>Providing impervious hearting for breached / damaged portion of embankment with soil from approved borrow areas in layers of 10 to 15 cm before compaction including cost of all materials, machinery, labour, all operations such as collection of soil, sorting out, spreading soil to specified thickness, breaking clods, sectioning, watering, compacting each layer to density control of <b>not less than 98 percent</b> or as stipulated by rolling or by using mechanical tampers etc., complete with initial lead upto 1 km and all lifts.</b> Labour Component (including contractor's profit and Overheads)	cum	185.30	
			cum		32.30
IRR-PMW-3-9	333	<b>Providing pervious/semi-pervious casing for breached / damaged portion of embankment with soil from approved borrow areas in layers of 10 to 15 cm before compaction including cost of all materials, machinery, labour, all operations such as collection of soil, sorting out, spreading soil to specified thickness, breaking clods, sectioning, watering, compacting each layer to density control of <b>not less than 98 percent</b> or as stipulated by rolling or by using mechanical tampers etc., complete with initial lead upto 1 km and all lifts.</b> Labour Component (including contractor's profit and Overheads)	cum	212.30	
			cum		38.60
IRR-PMW-3-10	334	<b>Providing impervious hearting for breached / damaged portion of embankment with soil from approved dump areas in layers of 10 to 15 cm before compaction including cost of all materials, machinery, labour, all operations such as collection of soil, sorting out, spreading soil to specified thickness, breaking clods, sectioning, watering, compacting each layer to density control of <b>not less than 98 percent</b> or as stipulated by rolling or by using mechanical tampers etc., complete with initial lead upto 1 km and all lifts.</b> Labour Component (including contractor's profit and Overheads)	cum	168.50	
			cum		30.80
IRR-PMW-3-11	335	<b>Providing pervious /semi-pervious casing for breached /damaged portion of embankment with soil from approved dump areas in layers of 10 to 15 cm before compaction including cost of all materials, machinery, labour, all operations such as collection of soil, sorting out, spreading soil to specified thickness, breaking clods, sectioning, watering, compacting each layer to density control of <b>not less than 98 percent</b> or as stipulated by rolling or by using mechanical tampers etc., complete with initial lead upto 1 km and all lifts.</b> Labour Component (including contractor's profit and Overheads)	cum	192.20	
			cum		36.50
IRR-PMW-3-12	336	<b>Repairing rain cuts / resectioning canal slopes</b> to required lines and grades as directed using available soil including dressing, clod breaking, packing, tamping etc., complete with all leads and lifts. Labour Component (including contractor's profit and Overheads)	sqm	3.70	
			sqm		3.70
IRR-PMW-3-13	337	<b>Cleaning drainage gallery, adits, instrumentation galleries etc., by scrubbing / brushing including chiselling and removing leached lime deposit and disposing off all the waste material out side adits in specified location etc., complete with all leads and lifts.</b> Labour Component (including contractor's profit and Overheads)	Rm	41.10	
			Rm		32.90
IRR-PMW-3-14	338	<b>Cleaning dam parapet inner face and top</b> using oxalic acid and water by scrubbing / brushing and washing to remove all surface coatings etc., <b>complete</b> . Labour Component (including contractor's profit and Overheads)	Rm	36.50	
			Rm		23.90

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
IRR-PMW-3-15		Deleted from the year2013-14 onwards			
IRR-PMW-3-16		Deleted from the year2013-14 onwards			
IRR-PMW-3-17		Deleted from the year2013-14 onwards			
IRR-PMW-3-18		Deleted from the year2013-14 onwards			
IRR-PMW-3-19		Deleted from the year2013-14 onwards			
IRR-PMW-3-20	339	<b>Excavation and removal of silt and silt mixed with sand from canal bed in dry condition including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with initial lead upto 50 m and all lifts.</b>	cum	159.10	
		Labour Component (including contractor's profit and Overheads)	cum		159.10
IRR-PMW-3-21	340	<b>Excavation and removal of silt or silt mixed with sand in slurry condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with initial lead upto 50 m and all lifts.</b>	cum	198.80	
		Labour Component (including contractor's profit and Overheads)	cum		198.80
IRR-PMW-3-22 (new Item5 2010-11) (for Minor Works)	341	<b>Providing homogeneous embankment using soil from approved borrow area in layers of 25 to 30 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transportation, spreading soil in layer of specified thickness, breaking clods, sectioning,etc.,complete with initial lead upto 1 km and all lifts.</b>	cum	95.10	
		Labour Component (including contractor's profit and Overheads)	cum		15.20
IRR-PMW-3-23 (new Item6 2010-11) (for Minor Works)	342	<b>Providing homogeneous embankment using soil from approved borrow area in layers of 25 to 30 cm before compaction including cost of all materials, machinery, labour, all operations such as watering, compactingto density control of not less than 95 percent or as stipulated using 8T roller etc., complete with initial lead upto 1 km and all lifts.</b>	cum	45.80	
		Labour Component (including contractor's profit and Overheads)			7.40
IRR-PMW-3-24 (new Item7 2010-11)	343	<b>Providing homogeneous embankment using soil from approved borrow area in layers of 25 to 30 cm before compaction including cost of all materials, machinery, labour, all operations such as compactingto density control of not less than 90 percent or as stipulated using 2T roller etc., complete with initial lead upto 1 km and all lifts.</b>	cum	6.20	
		Labour Component (including contractor's profit and Overheads)	cum		1.20
(New Item 2012-13-3)		<b>Weed Removal by Manual Means</b>			
IRR-PMW-3-25(a)	344	Removal of Water Hyacinth up to 30 cm thick	Sqm	6.50	
IRR-PMW-3-25(b)	345	Removal of Water Hyacinth beyond 30 cm thick	Sqm	8.80	
IRR-PMW-3-25(c)	346	Clearing Alchi Tilla	Sqm	5.90	
IRR-PMW-3-25(d)	347	Removal of Jammu	Sqm	5.00	
IRR-PMW-3-25(e)	348	Removal of Imponea, Cornea	Sqm	5.90	
IRR-PMW-3-25(f) (new Item 2012-13-6)	349	Removal of Natchu, goobi, thooti, etc.	Sqm	1.90	
IRR-PMW-3-26 New Item2015-16-8	350	<b>PAINTING OF SLUICES FOR MAINTENANCE WORKS</b> Surface cleaning of metal surfaces by chemical cleaners and then by hand and power tool cleaners and removing dust. After cleaniog, applying primary coat with one coat of Zinc rich epoxy primer to a thickness of 100 microns, followed by finishing coats 2 coats with Coal tar epoxy with material, labour, and all accessories with all leads and lifts.	Sqm	419.00	
		Labour Component (including contractor's profit and Overheads)	Sqm		170.42
COM-MWRK		<b>New extra items– common item for all earth works using only manual labour for all other works without involving contractors</b>			

Chapterwise item No.	S.NO	Item description	Unit	Rate	Itemwise unit rate for Labour Component
1	2	3	4	5	6
COM-MWRK-1	351	(Manual)Excavation in all kinds of soil including boulders upto 0.30 m dia. for foundations of canal cross drainage and other appurtenant structures and placing excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto 10 m and initial lift upto 1.5 m. (Without involving the contractors for specified works ) With 3 Cum per day output	cum	116.70	
COM-MWRK-2	352	(Manual)Excavation in all kinds of soil/HDR including boulders upto 0.30 m dia. for foundations of canal cross drainage and other appurtenant structures and placing excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto 10 m and initial lift upto 1.5 m. (Without involving the contractors for specified works ) With 2.5 Cum per day output	cum	140	
COM-MWRK-3	353	(Manual)Excavation in soft rock (including F&F rock) without blasting, including boulders upto 0.30 m dia. for foundations of canal cross drainage and other appurtenant structures and placing excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto 10 m and initial lift upto 1.5 m. (Without involving the contractors for specified works ) Soft rock 1.33 Cum/Day	cum	263.20	
COM-MWRK-4	354	(Manual)Excavation in hard rock, including boulders upto 0.30 m dia. for foundations of canal cross drainage and other appurtenant structures and placing excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto 10 m and initial lift upto 1.5 m. (Without involving the contractors for specified works ) Hard rock 0.67Cum/ day	cum	522.40	

COM-LDLFT

**Abstract  
LEAD, LIFT, LOADING AND UNLOADING CHARGES FOR MATERIALS  
FOR THE YEAR: 2016-17**

COM-LDLFT

- 1 For total lead upto 150 m ( including initial lead ) lead charges by head load only shall be adopted irrespective of mode of conveyance.
- 2 For total lead exceeding 150 m conveyance by mechanical means only shall be adopted irrespective of mode of conveyance.
- 3 The rates for loading at quarry including idle hire charges of trucks and hire charges per for each kilometer and upto 5 km are cumulative and inclusive of total charges for preceding lead.
- 4 Unless otherwise specified lead charges for Earth / Sand / Gravel / Aggregates and Stones are for loose volume and not for compacted or in-situ volume.
- 5 The rates for lift charges,lead charges hire cahrges are cumulative are cumulative and inclusive of rates for preceding lift,load and hire charges
- 6 Lift charges are not payable where conveyance of materials is by mechanical means to final placing point.
- 7 Loading and unloading charges are not payable for conveyance by head load.
- 8 Loading charges are not payable for conveyance by mechanical means for disposal of excavated materials beyond initial lead of 50 m wherever specified.
- 9 Loading and unloading charges are not payable for conveyance by mechanical means for disposal of excavated materials beyond initial lead of 1 km wherever specified.
- 10 The rates for unloading of materials except earth, sand, gravel, coarse aggregate, rubble, size stone and cut stone are inclusive of stacking.
- 11 Hire charges are per 1KM for tippers and trucks for tranport of materials from work site to dump yard and other places are cumulative& includes previous km upto 5 kms
- 12 **The lead & lift charges are inclusive of contractor's profit and overhead charges of 13.615%**
- 13 **During the BoCE meeting held on 24-05-2014, it is observed that in some of the estimates, Lead Charges are being added directly to the material basic rates for arriving the finished item rate. In view of that, the BoCE has instructed to see that while arriving the finished item rate, the lead charges are to be added to the material basic rates only after deducting the provision of "Contractor's Profit and Overhead charges"**
- 14 **During the BoCE meeting held on 10.06.2015,the BoCEs has recommended to withdraw lead charges,loading and unloading charges for Cement as per the Sub-Committee minutes of meeting for the month of June -2015 dt:29.06.2015.(The conveyance charges ,loading & unloading charges for cement are displayed for information purpose only).**

**COM-LDLFT-1 A. (Lead) Conveyance Charges for materials by head load  
FOR THE YEAR: 2016-17**

SI No.	Total distance ( Total lead includes initial lead )	Earth / Sand /Gravel / Murrum/ Lime/ Surki/ Size stone / Cut stone Rubble / Coarse	Cement/Reinforced steel Str steel	PCC slab/ Shahbad slab / CC block/ BS slab/ Laterite / Wood Rs / cum
1	2	3	4	5
1	Total lead upto 50 m (covered by item rate)	initial lead	initial lead	initial lead
2	Total lead upto 100 m	56.80	33.10	72.30
3	Total lead upto 150 m	113.60	66.30	144.60

Notes: 1. No loading or unloading charges are admissible for conveyance by head load.

2. For total lead exceeding 150 m conveyance charges by mechanical means only shall be adopted irrespective of mode of conveyance.

3.The Lead & Lift Charges are inclusive of 13.615% Contractor's Profit and Over Head Charges

**COM-LDLFT-2 B.(Lead) Conveyance charges for machinery per kilometer for transporting materials by tippers and trucks excluding loading, unloading and idle hire charges of machinery**

( No loading and unloading charges allowed for machinery loading and unloading )

SI No.	Distance	(Lead) charges for trucks and tippers for Earth / Sand /Gravel / Murrum/ Lime/ Surki/ per cu.meter	(Lead) charges for trucks and tippers for Rubble/Size stones/ Cut Stones/ Coarse aggregate per cu.meter	(Lead) charges for trucks and tippers for Cement/ Steel/ RCC poles/ AC & GI sheets/ Packed materials/tonne	(Lead) charges for trucks and tippers per cu.meter for PCC slabs/ Shahabad slabs/ CC & Laterite blocks/ Wood/ cum	(Lead) charges for trucks and tippers per cu.meter for water/ 1000 litres	(Lead) charges for trucks per 1000 Nos. of Bricks
1	2	3	4	5	6	7	8
1	Lead upto 1 km	31.50	30.40	19.00	44.70	18.70	50.70
2	Lead upto 2 km	44.10	42.50	26.60	62.60	26.20	70.90
3	Lead upto 3 km	58.80	58.80	36.70	86.50	35.00	94.50
4	Lead upto 4 km	71.40	71.40	44.60	105.00	42.50	114.80
5	Lead upto 5 km	84.00	84.00	52.50	123.50	50.00	135.10
6	for Every km beyond 5 km upto 30 km	12.60	12.60	7.90	18.50	7.50	20.30
7	for Every km beyond 30 km	10.50	10.50	6.60	15.40	6.30	16.90

**Note:The Lead & Lift Charges are inclusive of 13.615% Contractor's Profit and Over Head Charges**

**COM-LDLFT-3 C. LOADING AND UNLOADING CHARGES BY MANUAL MEANS (idle hire charges of trucks are not added)**

SI No.	Description of item	Earth / Sand /Gravel Murrum/ / Surki/ Rs / cum	Rubble/ size stone/ cut stone/ Coarse aggregate,Lime in Rs/cum	cement in Rs/tonne	steel in Rs./tonne	brick work Rs/1000 No
1	2	3	4	5	6	7
1	Loading	17.30	37.80	62.40	74.80	52.00
2	Unloading	8.65	18.90	62.40	74.80	52.00

**Note:The Lead & Lift Charges are inclusive of 13.615% Contractor's Profit and Over Head Charges**

**COM-LDLFT-4 D. LOADING AND UNLOADING CHARGES BY MANUAL MEANS (including idle hire charges of trucks )**

SI No.	Description of item	Earth / Sand /Gravel Murrum/ / Surki/ Rs / cum	Rubble/ size stone/ cut stone/ Coarse aggregate,Lime in Rs/cum	cement in Rs/tonne	steel in Rs./tonne	brick work Rs/1000 No
1	2	3	4	5	6	7
1	Loading	111.00	129.90	163.70	176.00	219.10
2	Unloading	40.00	64.95	163.70	176.00	219.10

**Note:The Loading & Unloading Charges are inclusive of 13.615% Contractor's Profit and Over Head Charges**

**COM-LDLFT-5 E. LOADING AND UNLOADING CHARGES BY MECHANICAL MEANS (including idle hire charges of trucks)**

SI No.	Description of item	Earth / Sand /Gravel Murrum/ / Surki/ Rs / cum	Rubble/ size stone/ cut stone/ Coarse aggregate,Lime in Rs/cum
1	2	3	4
1	Loading	52.00	103.90
2	Unloading	15.90	15.90

**Note:The Loading & Unloading Charges are inclusive of 13.615% Contractor's Profit and Over Head Charges**

**COM-LDLFT-6 F. LIFT CHARGES FOR MATERIALS BY HEAD LOAD**

SI No.	Total lift ( Total lift includes initial lift )	Earth / Sand /Gravel Murrum/ Lime/ Surki/ Size stone / Cut stone Rubble / Coarse aggregate Rs / cum	Cement/ Reinforce- ment steel Str steel Rs / tonne	PCC slab/ Shahbad slab / CC block/ BS slab / Laterite / Wood Rs / cum
1	2	3	4	5
1	Total lift upto 3 m (covered by item rate)	Initial lift	Initial lift	Initial lift
2	For Every 1.00 Lift beyond initial lift of 3 meters	6.60	4.80	8.80

**Note:The Lead & Lift Charges are inclusive of 13.615% Contractor's Profit and Over Head Charges**

## Chapter - I

## DAM AND ALLIED WORKS - Standard Data

(WLL BE WITH E-N-C &amp; TO INCORPORATE CHANGES YEARLY/ AS NEEDED)

FOR THE YEAR :2016-17

**Index- code**

IRR-DAW

**DAM AND ALLIED WORKS - DATA RATES****Directions to add Seigniorage Charges and Additional Lead Charges****Seigniorage Charges:**

1. The unit rate for work item in the Standard Data is **exclusive of Seigniorage Charges** wherever applicable.
2. The appropriate Seigniorage Charges for relevant materials are to be added to the Unit rate of work item while preparing the estimate. (i.e., to the data itself)
3. The Provision towards Contractor's Profit and Overhead charges **should not be operated** on the Seigniorage Charges while adding Seigniorage Charges to the data in the estimate

**Additional Lead and Lift Charges:**

1. Unless otherwise specified the basic rates are inclusive of all lifts.
2. For concrete, masonry and reinforcement items **wherever** initial lead of 1km is considered in the basic rate, the additional lead charges are to be added as follows:

Additional lead charges for Steel, sand, coarse aggregate, stones and stone chips shall be worked out for total lead involved and 1 km lead charges included in basic rate shall be deducted from total lead charges. No loading and unloading charges shall be allowed for any item.

In case of Cement and Steel, Loading and unloading charges are already added in the work item while arriving the unit rate and hence should not be added again

Example:

Total lead for sand from approved sand quarry :	15 Km
Initial lead included in the basic rate in the SR :	1 Km
Additional lead charges : Lead charges for 5 km	Rs. 84.00
Lead charges for next 10 km	Rs. 126
Total lead charges for 15 km /cum	Rs. 210.00
Less 1 km initial lead charges /cum	Rs. 31.50 (-)
Net additional lead charges / cum	Rs. 178.50

3. The Leads for Steel shall be from the nearest market place to the Project area

4. For earth/rockfill embankments **wherever** initial lead of 1km is considered in the basic rate, the additional lead charges are to be added as follows:

Additional lead charges for Earth, Murrum etc., shall be worked out for total lead involved and 1 km lead charges included in basic rate shall be deducted from total lead charges. No loading and unloading charges shall be allowed for any item. (**same as above**)

Example:

Total lead for earth from approved borrow area :	15 Km
Initial lead included in the basic rate in the SR :	1 Km
Additional lead charges : Lead charges for 5 km	Rs. 84.00
Lead charges for next 10 km	Rs. 126
Total lead charges for 15 km /cum	Rs. 210.00
Less 1 km initial lead charges /cum	Rs. 31.50 (-)
Net additional lead charges / cum	Rs. 178.50

5. The initial lead up to 50 m as mentioned in some standard data items is meant for manual lead within the working area. For conveyance of materials, the lead required from quarry/Borrow area/ Dump Area to worksite shall be added to the data without deducting the 50 m initial lead charges

**DAW - Work Items**

IRR-DAW-1

**EXCAVATION & FOUNDATION TREATMENT WORKS:**

IRR-DAW-1-1

Excavation for foundation **in all kinds of soil** including boulders **upto 0.30 m diameter** for dam, spillway, intake structure and other appurtenant works and placing the excavated soil neatly in dump area or disposing off the same as directed etc., complete **with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	UNIT 880 cum	
				Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
<b>Total cost of Materials</b>				<b>Rs:</b>	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
2	Dumpers 5 cum capacity 6 Nos	Hour	48.00	580.70	27873.60
	Fuel / Energy charges	Hour	48.00	399.90	19195.20
3	Tipper 5 cum capacity 1 No	Hour	8.00	446.70	3573.60
	Fuel / Energy charges	Hour	8.00	299.90	2399.20
<b>Total hire charges of Machinery</b>				<b>Rs:</b>	<b>73676.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	Crew for Dumper	Hour	48.00	227.10	10900.80
3	Crew for Tipper	Hour	8.00	177.50	1420.00
4	work inspector	Day	1.00	450.00	450.00
5	mazdoor	Day	16.00	350.00	5600.00
<b>Total cost of Labour</b>				<b>Rs:</b>	<b>20263.60</b>

labour component/unit qty

23.00

Add contractor's profit and overhead charges	13.615% <u>3.10</u>
labour component/unit qty (including contractor's profit)	<u><b>26.10</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 73676.00
C. Cost of Labour	Rs: 20263.60
	Rs: 93939.60
Total	Rs: 12789.88
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	880.00 cum
Rate per	cum (A+B+C+D)/880
	Rs: <b>106729.48</b>
	Rs: <b>121.30</b>

IRR-DAW-1-2 Excavation for foundation in **ordinary rock (including HDR)** without blasting including boulders above **0.3 m upto 0.6 m dia** for dam, spillway, intake structure and other appurtenant works and placing the excavated material neatly in dump area or disposing off the same as directed etc., complete with initial lead upto **1 km and all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	UNIT : <b>520 cum</b>	
				Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials					<b>Rs: 0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
2	Dumpers 5 cum capacity( 4 Nos)	Hour	32.00	580.70	18582.40
	Fuel / Energy charges	Hour	32.00	399.90	12796.80
3	Tipper 5 cum capacity( 1 No)	Hour	8.00	446.70	3573.60
	Fuel / Energy charges	Hour	8.00	299.90	2399.20
Total hire charges of Machinery					<b>Rs: 57986.40</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	Crew for Dumper	Hour	32.00	227.10	7267.20
3	Crew for Tipper	Hour	8.00	177.50	1420.00
4	work inspector	Day	1.00	450.00	450.00
5	Crowbarman	Day	2.50	400.00	1000.00
6	mazdoor	Day	10.00	350.00	3500.00
Total cost of Labour					<b>Rs. 15530.00</b>
labour component/unit qty					29.90
Add contractor's profit and overhead charges					13.615% <b>4.10</b>
labour component/unit qty (including contractor's profit)					<b>34.00</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 57986.40
C. Cost of Labour	Rs: 15530.00
	Rs: 73516.40
Total	13.615%
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	520.00 cum
Rate per	cum (A+B+C+D)/520
	Rs: <b>83525.66</b>
	Rs: <b>160.60</b>

IRR-DAW-1-3 Excavation for foundation in **hard rock (including F&F rock)** requiring blasting including boulders above **0.6 m upto 1.2 m dia.** for dam, spillway, intake structure and other appurtenant works and placing the excavated material neatly in dump area or disposing off the same as directed etc., complete with initial lead upto **1 km and all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Description	Unit	Quantity	UNIT : <b>520.00 cum.</b>	
				Rate in Rs.	Amount in Rs
1	Use rate of 1.5 m drill rod	Rm	216.00	20.14	4350.24
	Reconditioning charges @ 10%				435.02
2	Use rate of air hose 4 Nos.	Hour	26.00	11.56	300.63
3	Explosive small dia	kg	104.00	70.00	7280.00
4	Electric detonators	Nos	154.00	11.00	1694.00
5	Fuse coil	Rm	320.00	9.00	2880.00
6	Sundries	LS	5.00	30.00	150.00
Total cost of Materials					<b>Rs. 17089.89</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
2	Dumpers 5 cum capacity 4 Nos.	Hour	32.00	580.70	18582.40
	Fuel / Energy charges	Hour	32.00	399.90	12796.80
3	Tipper 5 cum capacity 1 No	Hour	8.00	446.70	3573.60
	Fuel / Energy charges	Hour	8.00	299.90	2399.20

4	Air compressor 8.5 cmm ( ele ) 2 Nos	Hour	13.00	170.80	2220.40
	Fuel / Energy charges	Hour	13.00	315.20	4097.60
5	Jack hammers 4 Nos.	Hour	26.00	19.80	514.80
	Fuel / Energy charges	Hour	26.00	0.00	0.00
Total hire charges of Machinery					Rs: 64819.20

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	Crew for Dumper	Hour	32.00	227.10	7267.20
3	Crew for Tipper	Hour	8.00	177.50	1420.00
4	Crew for Air compressor	Hour	13.00	164.80	2142.40
5	Crew for Jack hammer	Hour	26.00	329.60	8569.60
6	work inspector	Day	1.00	450.00	450.00
7	Blaster	Day	1.00	510.00	510.00
8	Helper blaster	Day	1.00	400.00	400.00
9	Crowbarman	Day	2.50	400.00	1000.00
10	Stone breaker	Day	1.00	400.00	400.00
11	mazdoor	Day	10.00	350.00	3500.00
Total cost of Labour					Rs. 27552.00
labour component/unit qty					53.00
Add contractor's profit and overhead charges					13.615% 7.20
labour component/unit qty (including contractor's profit)					60.20

**ABSTRACT:**

A. Cost of Materials	Rs: 17089.89
B. Hire charges of Machinery	Rs: 64819.20
C. Cost of Labour	Rs: 27552.00
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 109461.09
Total cost for	13.615% cum. Rs: 14903.13
Rate per	cum. (A+B+C+D)/520 Rs: 124364.22
	Rs: 239.20

IRR-DAW-1-3A  
New Item 2015-16-1

Excavation for foundation in **hard rock** (including F&F rock) including boulders above **0.6 m upto 1.2 m dia.** by controlled blasting and controlling fly rock by muffling arrangements for dam, spillway, intake structure and other appurtenant works and other open foundation works and placing the excavated material neatly in dump area or disposing off the same as directed etc., complete with initial lead upto 1 km and all leads

DATA:

**RATE ANALYSIS**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Use rate of 1.5 m drill rod	Rm	216.00	20.14	4350.24
	Reconditioning charges @ 10%				435.02
2	Use rate of air hose 4 Nos.	Hour	26.00	11.56	300.63
3	Use rate of chain link wire mesh	Sq m	500.00	71.97	35984.38
4	Use rate of Sand Bags	Nos.	190.00	71.83	13646.75
3	Explosive small dia	kg	104.00	70.00	7280.00
4	Electric delay detonators	Nos	154.00	20.00	3080.00
5	Fuse coil	Rm	320.00	9.00	2880.00
6	Sundries	LS	5.00	30.00	150.00
Total cost of Materials					Rs. 68107.02

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
2	Angle dozer 90 hp	Hour	1.00	1715.50	1715.50
	Fuel / Energy charges	Hour	1.00	610.50	610.50
3	Dumpers 5 cum capacity 4 Nos.	Hour	32.00	580.70	18582.40
	Fuel / Energy charges	Hour	32.00	399.90	12796.80
4	Tipper 5 cum capacity 1 No	Hour	8.00	446.70	3573.60
	Fuel / Energy charges	Hour	8.00	299.90	2399.20
5	Air compressor 8.5 cmm ( ele ) 2 Nos	Hour	13.00	170.80	2220.40
	Fuel / Energy charges	Hour	13.00	315.20	4097.60
6	Jack hammers 4 Nos.	Hour	26.00	19.80	514.80
	Fuel / Energy charges	Hour	26.00	0.00	0.00
Total hire charges of Machinery					Rs. 67145.20

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	Crew for Angle dozer	Hour	1.00	236.60	236.60
3	Crew for Dumper	Hour	32.00	227.10	7267.20
4	Crew for Tipper	Hour	8.00	177.50	1420.00
5	Crew for Air compressor	Hour	13.00	164.80	2142.40
6	Crew for Jack hammer	Hour	26.00	329.60	8569.60
7	work inspector	Day	3.00	450.00	1350.00
8	Blaster	Day	1.50	510.00	765.00
9	Helper blaster	Day	2.00	400.00	800.00
10	Crowbarman	Day	2.50	400.00	1000.00
11	Stone breaker	Day	2.00	400.00	800.00
12	mazdoor	Day	18.00	350.00	6300.00
Total cost of Labour					Rs. 32543.60

labour component/unit qty 62.60  
Add contractor's profit and overhead charges 13.615% 8.50

labour component/unit qty (including contractor's profit)	<u>71.10</u>
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**ABSTRACT:**

A. Cost of Materials	Rs: 68107.02
B. Hire charges of Machinery	Rs: 67145.20
C. Cost of Labour	Rs: 32543.60
D.Add for contractor's profit and overheads on (A+B+C)	<u>Rs: 167795.82</u>
Total cost for	13.615% cum.
Rate per	520.00 cum. (A+B+C+D)/520
	Rs: 190641.22
	Rs: 366.60

IRR-DAW-1-4

(a)

Excavation for foundation in **hard rock of all toughness by blasting**  
 including boulders **above 1.2 m dia.** for dam, spillway, intake structure and  
 other appurtenant works and placing the excavated rock neatly in dump area  
 or stack yard including levelling as directed etc., complete with  
**initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**

<b>A. MATERIALS:</b>		UNIT <b>320.00</b>	cum		
Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Use rate of drill rod 1.5 m long	Rm	310.00	26.85	8324.53
	Reconditioning charges @ 10%				832.45
2	Use rate of air hose 4 Nos.	Hour	48.00	11.56	555.00
3	Explosive small dia	kg	95.00	70.00	6650.00
4	Ordinary detonators	Nos	10.00	7.00	70.00
5	Electric detonators	Nos	333.00	11.00	3663.00
6	Fuse coil	Rm	450.00	9.00	4050.00
7	Sundries	LS	5.00	30.00	150.00
Total cost of Materials				Rs: 24294.98	

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
2	Dumpers 5 cum capacity 3 Nos.	Hour	24.00	580.70	13936.80
	Fuel / Energy charges	Hour	24.00	399.90	9597.60
3	Tipper 5 cum capacity 1 No	Hour	4.00	446.70	1786.80
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
4	Angle dozer 90 hp	Hour	1.00	1715.50	1715.50
	Fuel / Energy charges	Hour	1.00	610.50	610.50
5	Air compressor 8.5 cmm (ele) 2 Nos.	Hour	24.00	170.80	4099.20
	Fuel / Energy charges	Hour	24.00	315.20	7564.80
6	Jack hammers 4 Nos.	Hour	48.00	19.80	950.40
	Fuel / Energy charges	Hour	48.00	0.00	0.00
Total hire charges of Machinery				Rs. 62095.60	

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	Crew for Dumper	Hour	24.00	227.10	5450.40
3	Crew for Tipper	Hour	4.00	177.50	710.00
4	Crew for Dozer	Hour	1.00	236.60	236.60
5	Crew for Air compressor	Hour	24.00	164.80	3955.20
6	Crew for Jack hammer	Hour	48.00	329.60	15820.80
7	work inspector	Day	1.00	450.00	450.00
8	Blaster	Day	1.00	510.00	510.00
9	Helper blaster	Day	1.00	400.00	400.00
10	Crowbarman	Day	1.00	400.00	400.00
11	Stone breaker	Day	2.00	400.00	800.00
12	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour				Rs. 32725.80	

labour component/unit qty

Add contractor's profit and overhead charges

labour component/unit qty (including contractor's profit)

102.30	13.615% 13.90
	<u>116.20</u>

**ABSTRACT:**

A. Cost of Materials	Rs: 24294.98
B. Hire charges of Machinery	Rs: 62095.60
C. Cost of Labour	Rs: 32725.80
D.Add for contractor's profit and overheads on (A+B+C)	<u>Rs: 119116.38</u>
Total cost for	13.615% cum.
Rate per	320.00 cum. (A+B+C+D)/320
	Rs: 16217.7
	Rs: 135334.08
	Rs: 422.90

IRR-DAW-1-5

(b)

Excavation for foundation in **hard rock of all toughness** including boulders **above 1.2 m dia.** by controlled blasting method and controlling fly-rock by muffling arrangements for dam, spillway, intake structure and other appurtenant structures etc., including placing and levelling the excavated rock neatly in dump area or other place as directed etc., complete with **lead upto upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**

<b>A. MATERIALS:</b>		UNIT : <b>480.00</b>	cum		
Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs

1	Use rate of drill rod 1.5 m length	Rm	464.00	26.85	12459.95
2	Reconditioning charges @	10%			1246.00
3	Use rate of 50 m air hose 4 Nos.	Hour	70.00	11.56	809.38
3	Use rate of chain link wire mesh	sqm	715.00	71.97	51457.66
4	Use rate of sand bag	Nos	580.00	71.83	41658.50
5	Explosive small dia.	kg	149.00	70.00	10430.00
6	Ordinary detonators	Nos	23.00	7.00	161.00
7	Electric delay detonators	Nos	500.00	20.00	10000.00
8	Fuse coil	Rm	700.00	9.00	6300.00
9	Sundries	LS	10.00	30.00	300.00
Total cost of Materials					Rs: 134822.49

**B. MACHINERY:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Shovel 0.85 cum capacity	Hour	12.00	1706.60	20479.20
	Fuel / Energy charges	Hour	12.00	872.70	10472.40
2	Angle dozer 90 hp	Hour	2.00	1715.50	3431.00
	Fuel / Energy charges	Hour	2.00	610.50	1221.00
3	Dumpers 5 cum capacity 3 Nos.	Hour	36.00	580.70	20905.20
	Fuel / Energy charges	Hour	36.00	399.90	14396.40
4	Tipper 5 cum capacity 1 No	Hour	4.00	446.70	1786.80
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
5	Air compressor 8.5 cmm ( ele ) 2 Nos	Hour	35.00	170.80	5978.00
	Fuel / Energy charges	Hour	35.00	315.20	11032.00
6	Jack hammers 4 Nos.	Hour	70.00	19.80	1386.00
	Fuel / Energy charges	Hour	70.00	0.00	0.00
Total hire charges of Machinery					Rs: 92287.60

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Shovel	Hour	12.00	236.60	2839.20
2	Crew for Angle dozer	Hour	2.00	236.60	473.20
3	Crew for Dumper	Hour	36.00	227.10	8175.60
4	Crew for Tipper	Hour	4.00	177.50	710.00
5	Crew for Air compressor	Hour	35.00	164.80	5768.00
6	Crew for Jack hammer	Hour	70.00	329.60	23072.00
7	work inspector	Day	4.50	450.00	2025.00
8	Blaster	Day	1.50	510.00	765.00
9	Helper blaster	Day	3.00	400.00	1200.00
10	Crowbarman	Day	2.50	400.00	1000.00
11	Stone breaker	Day	2.50	400.00	1000.00
13	mazdoor	Day	20.00	350.00	7000.00
Total cost of Labour					Rs. 54028.00

labour component/unit qty 112.60  
 Add contractor's profit and overhead charges 13.615% 15.30  
 labour component/unit qty (including contractor's profit) 127.90

**ABSTRACT:**

A. Cost of Materials	Rs: 134822.49
B. Hire charges of Machinery	Rs: 92287.60
C. Cost of Labour	Rs: 54028.00
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 281138.09
Total cost for 480.00 13.615%	Rs. 38276.95
Rate per cum (A+B+C+D)/480	Rs: 319415.04
	Rs: 665.40

IRR-DAW-1-6  
( c )

Excavation for foundation in **hard rock of all toughness** including boulders **above 1.2 m dia.** by **line drilling and smooth blasting and controlling** fly-rock by muffling arrangements for dam, spillway, intake structure and other appurtenant structures etc., including dressing sides and bed to required level / profile, placing and levelling the excavated rock neatly in dump area or other place as directed etc., complete **with lead upto 1 km and all lifts.**

Note : i) 1 m width of excavation along the face to be dressed shall be treated as excavation by line drilling and smooth blasting.  
 ii) The rate includes controlling fly-rock wherever required.  
 iii ) The rate under this item shall be paid only on ascertaining that the surface requiring dressing has come off neatly as per specifications or atleast 50 percent of smooth blast holes are visible for inspection and are spaced at specified interval.  
 iv ) In case, where the above criteria is not fulfilled payment shall be restricted to the rate provided for excavation by normal or controlled blasting as the case may be..

DATA:

**RATE ANALYSIS**

UNIT :

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Use rate of drill rod 1.5 m length	Rm	138.00	26.85	3705.76
	Reconditioning charges @	10%			370.58
2	Use rate of 50 m air hose 4 Nos.	Hour	22.00	11.56	254.38
3	Explosive small dia.	kg	10.50	70.00	735.00
4	Ordinary detonators	Nos	2.00	7.00	14.00
5	Electric delay detonators	Nos	76.00	20.00	1520.00
6	Fuse coil	Rm	140.00	9.00	1260.00
7	Sundries	LS	2.00	30.00	60.00
Total cost of Materials					Rs. 7919.72

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Shovel 0.85 cum capacity	Hour	1.00	1706.60	1706.60
	Fuel / Energy charges	Hour	1.00	872.70	872.70

2	Angle dozer 90 hp	Hour	0.25	1715.50	428.88
3	Fuel / Energy charges	Hour	0.25	610.50	152.63
3	Dumpers 5 cum capacity 3 Nos.	Hour	3.00	580.70	1742.10
4	Fuel / Energy charges	Hour	3.00	399.90	1199.70
4	Air compressor 8.5 cmm ( ele ) 2 Nos	Hour	11.00	170.80	1878.80
5	Fuel / Energy charges	Hour	11.00	315.20	3467.20
5	Jack hammers 4 Nos.	Hour	22.00	19.80	435.60
	Fuel / Energy charges	Hour	22.00	0.00	0.00
Total hire charges of Machinery					Rs: 11884.21

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Shovel	Hour	1.00	236.60	236.60
2	Crew for Angle dozer	Hour	0.25	236.60	59.15
3	Crew for Dumper	Hour	3.00	227.10	681.30
4	Crew for Air compressor	Hour	11.00	164.80	1812.80
5	Crew for Jack hammer	Hour	22.00	329.60	7251.20
6	work inspector	Day	0.50	450.00	225.00
7	Blaster	Day	0.50	510.00	255.00
8	Helper blaster	Day	0.50	400.00	200.00
9	Crowbarman	Day	0.50	400.00	200.00
10	Stone breaker	Day	0.50	400.00	200.00
11	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour					Rs. 11821.05

labour component/unit qty 295.50  
 Add contractor's profit and overhead charges 13.615% 40.20  
 labour component/unit qty (including contractor's profit) 335.70

**ABSTRACT:**

A. Cost of Materials	Rs: 7919.72
B. Hire charges of Machinery	Rs: 11884.21
C. Cost of Labour	Rs: 11821.05
Total	Rs: 31624.98
D.Add for contractor's profit and overheads on (A+B+C)	Rs. 4305.74
Total cost for	40.00
Rate per cum	(A+B+C+D)/40

IRR-DAW-1-7 Preparing foundation bed for masonry or concrete by benching, stepping, removing all loose material by wedging / chiselling and disposing off the same as directed and cleaning the surface with air and water jet etc., complete with initial lead upto 50 m and all lifts.

**DATA****RATE ANALYSIS**

UNIT:

**100.00 sqm****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL			0.00	0.00
Total cost of Materials					Rs. 0.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Air compressor 8.5 cmm ( ele )	Hour	1.00	170.80	170.80
	Fuel / Energy charges	Hour	1.00	315.20	315.20
2	Pump 5 hp ( ele )	Hour	1.00	3.00	3.00
	Fuel / Energy charges	Hour	1.00	28.00	28.00
Total hire charges of Machinery					Rs. 517.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Air compressor	Hour	1.00	164.80	164.80
2	Crew for Pump	Hour	1.00	83.30	83.30
3	Stone breaker	Day	2.00	400.00	800.00
4	mazdoor	Day	2.50	350.00	875.00
5	Crowbar man	Day	2.00	400.00	800.00
Total cost of Labour					Rs. 2723.10

labour component/unit qty 27.20  
 Add contractor's profit and overhead charges 13.615% 3.70  
 labour component/unit qty (including contractor's profit) 30.90

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 517.00
C. Cost of Labour	Rs: 2723.10
Total	Rs: 3240.10
D.Add for contractor's profit and overheads on (A+B+C)	Rs. 441.14
Total cost for	100.00
Rate per sqm	(A+B+C+D)/100

**IRR-DAW-1-8**

Preparing foundation bed for cut-off trench filling in rock portion by removing all loose materials by wedging / chiselling and disposing off the same as directed etc., complete with initial lead upto 50 m and all lifts.

**DATA****RATE ANALYSIS**

UNIT:

**100.00 sqm****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL			0.00	0.00
Total cost of Materials					Rs. 0.00

Total cost of Materials	Rs. <b>0.00</b>
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**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL			0.00	0.00
				0.00	0.00
Total cost of Machinery					<b>Rs. 0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crowbar man	Day	2.00	400.00	800.00
2	Stone breaker	Day	2.00	400.00	800.00
3	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour					<b>Rs. 2300.00</b>
labour component/unit qty					23.00
Add contractor's profit and overhead charges					13.615% 3.10
labour component/unit qty (including contractor's profit)					<b>26.10</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2300.00
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 2300.00
Total cost for	13.615% sqm
Rate per sqm	100.00 (A+B+C+D)/100
	Rs: 313.15
	Rs: 2613.15
	Rs: 26.10

IRR-DAW-1-9

**Drilling 45 to 50 mm dia holes vertical or inclined upto 10 degrees to vertical in rock /masonry/ concrete by percussion drilling using waggon drill or any other suitable equipment including cost of all materials, machinery, labour, redrilling through partially set grout wherever required etc., complete.**

**for drilling upto 6 m depth from surface.**

NOTE: The item rate for drilling through rock /masonry/ concrete includes redrilling through partially set grout, if any, in the portion of hole already grouted.

Data

**RATE ANALYSIS**

UNIT:

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Use rate of cross bit 50 mm dia	Rm	96.00	62.50	6000.00
2	Use rate of 50 mm dia air hose 50 m	Hour	8.00	18.75	150.00
3	Use rate of extension rod 4.5 m	Rm	96.00	6.36	610.56
Total cost of Materials					<b>Rs. 6760.56</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Waggon drill	Hour	8.00	188.50	1508.00
	Fuel / Energy charges	Hour	8.00	0.00	0.00
2	Air compressor 8.5 cmm ( ele )	Hour	8.00	170.80	1366.40
	Fuel / Energy charges	Hour	8.00	315.20	2521.60
3	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					<b>Rs: 5456.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Waggon drill	Hour	8.00	283.90	2271.20
2	Crew for Air compressor	Hour	8.00	164.80	1318.40
3	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour					<b>Rs: 4289.60</b>

labour component/unit qty                          44.70  
 Add contractor's profit and overhead charges    13.615% 6.10

labour component/unit qty (including contractor's profit)    **50.80**

**ABSTRACT:**

A. Cost of Materials	Rs: 6760.56
B. Hire charges of Machinery	Rs: 5456.00
C. Cost of Labour	Rs: 4289.60
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 16506.16
Total cost for	13.615% Rm
Rate per Rm	96.00 (A+B+C+D)/96
	Rs: 2247.31
	Rs: 18753.47
	Rs: 195.30

Upto 6 m from surface                                  195.30  
 Beyond 6 m upto 12 m from surface :  
 Upto 6 m from surface                                      Rate per Rm    Rs: 195.30

Add for redrilling through partially set grout / additional extension rods / reduction in rate of drilling etc @ Beyond 6 m upto 12 m from surface	Rate / Rm	10%	Rs: 19.53 Rs: 214.80
Beyond 12 m upto 18 m from surface	Rate per Rm		Rs: 214.80
Beyond 18 m upto 24 m from surface	Rate / Rm	10%	Rs: 21.48 Rs: 236.30
Beyond 24 m upto 30 m from surface	Rate per Rm		: Rs: 236.30
For 12 m to 18 m from surface	Rate per Rm		Rs: 23.63 Rs: 259.90
Add for redrilling through partially set grout / additional extension rods / reduction in rate of drilling etc @ Beyond 18 m upto 24 m from surface	Rate / Rm	10%	Rs: 25.99 Rs: 285.90
Beyond 24 m upto 30 m from surface	Rate per Rm		: Rs: 285.90
For 18 m to 24 m from surface	Rate per Rm		Rs: 259.90
Add for redrilling through partially set grout / additional extension rods / reduction in rate of drilling etc @ Beyond 24 m upto 30 m from surface	Rate / Rm	10%	Rs: 25.99 Rs: 285.90
Beyond 30 m upto 36 m from surface	Rate per Rm		: Rs: 285.90
For 24 m to 30 m from surface	Rate per Rm		Rs: 28.59 Rs: 314.50
Add for redrilling through partially set grout / additional extension rods / reduction in rate of drilling etc @ Beyond 30 m upto 36 m from surface	Rate / Rm	10%	Rs: 31.45 Rs: 346.00
Beyond 36 m upto 42 m from surface	Rate per Rm		: Rs: 346.00
For 36 m to 42 m from surface	Rate per Rm		Rs: 34.60 Rs: 380.60
Add for redrilling through partially set grout / additional extension rods / reduction in rate of drilling etc @ Beyond 42 m upto 48 m from surface	Rate / Rm	10%	Rs: 34.60 Rs: 380.60
For 42 m to 48 m from surface	Rate per Rm		

IRR-DAW-1-10

**Flushing grout holes of all sizes with water and air jets alternatively** for an average period of 30 minutes including water intake observations after flushing, cost of all materials, machinery, labour etc., **complete**.

DATA:

**RATE ANALYSIS**UNIT :  
**192.00 Rm.****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Use rate of air hose 2 Nos x 8 hrs	Hour	16.00	11.56	184.96
2	Use rate of water hose 2 Nos x 8 hrs	Hour	16.00	11.56	184.96
3	Sundries	LS	2.00	30.00	60.00
Total cost of Materials					Rs: 429.92

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Air compressor 8.5 cmm ( ele )	Hour	8.00	170.80	1366.40
	Fuel / Energy charges	Hour	8.00	315.20	2521.60
2	Pump 5 hp ( ele )	Hour	8.00	3.00	24.00
	Fuel / Energy charges	Hour	8.00	28.00	224.00
3	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs: 4196.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Air compressor	Hour	8.00	164.80	1318.40
2	Crew for Pump	Hour	8.00	83.30	666.40
3	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour					Rs: 3384.80

labour component/unit qty 17.60  
Add contractor's profit and overhead charges 13.615% 2.40  
labour component/unit qty (including contractor's profit) 20.00

**ABSTRACT:**

A. Cost of Materials	Rs: 429.92
B. Hire charges of Machinery	Rs: 4196.00
C. Cost of Labour	Rs: 3384.80
D. Add for contractor's profit and overheads on (A+B+C)	Total 13.615%
Total cost for 192.00 Rm.	Rs: 1090.66
Rate per Rm. (A+B+C+D)/192	Rs: 9101.38
	Rs: 47.40

IRR-DAW-1-11

(a)

**Consolidation grouting with neat cement grout** mix of suitable consistency under specified pressure as directed in drilled holes by stage grouting method including cost of all materials, machinery, labour, redrilling if necessary etc., complete **with initial lead upto 1 km and all lifts**.

DATA:

**RATE ANALYSIS**UNIT :  
**1.05 tonne****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement	tonne	1.05	5350.00	5617.50
2	Use rate of 50 m pressure hose	Hour	8.00	11.56	92.48
3	Sundries ( packer assembly etc )	LS	3.00	30.00	90.00
Total cost of Materials					Rs: 5799.98

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Grouting equipment	Hour	8.00	24.90	199.20
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	Pump 5 hp ( ele )	Hour	2.00	3.00	6.00
	Fuel / Energy charges	Hour	2.00	28.00	56.00
3	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs: 545.20

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Grout pump	Hour	8.00	263.60	2108.80
2	Crew for Pump	Hour	2.00	83.30	166.60
3	mazdoor ( cement handling )	Day	2.00	350.00	700.00
Total cost of Labour					Rs: 2975.40
labour component/unit qty					2833.70
Add contractor's profit and overhead charges					13.615% 385.80
labour component/unit qty (including contractor's profit)					3219.50

**ABSTRACT:**

A. Cost of Materials	Rs: 5799.98
B. Hire charges of Machinery	Rs: 545.20
C. Cost of Labour	Rs: 2975.40
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 9320.58
<b>Lead Charges for 1Km for Cement 1.05 Tonne @ (including Loading and Unloading Charges)</b>	13.615%
Total cost for	143.80 Rs/Tonne
Rate per tonne	tonne 150.99
	Rs: 10740.57
	Rs: 10229.10

IRR-DAW-1-12  
(b)

**Curtain grouting with neat cement grout mix** of suitable consistency under specified pressure as directed in drilled holes by stage grouting method including cost of all materials, machinery, labour, redrilling if necessary etc., complete with initial lead upto 1 km and all lifts.

DATA:

**RATE ANALYSIS**UNIT :  
**1.05 tonne****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement	tonne	1.05	5350.00	5617.50
2	Use rate of 100 m pressure hose	Hour	8.00	23.13	185.04
3	Use rate of 400 m GI pipe	Hour	8.00	6.4	51.20
4	Sundries ( packer assembly etc )	LS	3.00	30.00	90.00
Total cost of Materials					Rs: 5943.74

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Grouting equipment	Hour	8.00	24.90	199.20
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	Pump 5 hp ( ele )	Hour	2.00	3.00	6.00
	Fuel / Energy charges	Hour	2.00	28.00	56.00
3	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs: 545.20

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Grout pump	Hour	8.00	263.60	2108.80
2	Crew for Pump	Hour	2.00	83.30	166.60
3	Pipe fitter	Day	1.00	510.00	510.00
4	mazdoor ( cement handling )	Day	3.00	350.00	1050.00
Total cost of Labour					Rs: 3835.40
labour component/unit qty					3652.80
Add contractor's profit and overhead charges					13.615% 497.30
labour component/unit qty (including contractor's profit)					4150.10

**ABSTRACT:**

A. Cost of Materials	Rs: 5943.74
B. Hire charges of Machinery	Rs: 545.20
C. Cost of Labour	Rs: 3835.40
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 10324.34
<b>Lead Charges for 1Km for Cement 1.05 Tonne @ (including Loading and Unloading Charges)</b>	13.615%
Total cost for	143.80 Rs/Tonne
Rate per tonne	tonne 150.99
	Rs: 11880.99
	Rs: 11315.20

IRR-DAW-1-13

Providing and fixing 25 mm dia 3 m long cold twisted deformed steel **dowel bars** with one end driven into 45 to 50 mm diameter 1.50 m deep hole drilled in bed rock and other end provided with L-bend for embedding in concrete / masonry or over flow / non-over flow blocks and other appertaining works including cost of drilling and cleaning hole, filling hole with cement mortar 1 : 1 proportion, driving anchor rod, cost of all materials, machinery, labour etc., complete with initial lead upto 1 km and all lifts.

Consider 25 anchor rods for analysis.

DATA:

**RATE ANALYSIS**UNIT:  
**25 Nos.****A. MATERIALS**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
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1	Use rate of drill bit 50 mm dia	Rm	37.50	62.50	2343.75
2	Use rate of air hose 50 m	Hour	4.00	18.75	75.00
3	Anchor rod 25 mm dia	kg	303.22	34.00	10309.48
4	Cement	kg	75.00	5.35	401.25
5	Sand ( screened )	cum	0.05	165.00	8.25
Total cost of Materials				Rs:	13137.73

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Air compressor 8.5 cmm ( ele )	Hour	4.00	170.80	683.20
	Fuel / Energy charges	Hour	4.00	315.20	1260.80
2	Waggon drill	Hour	4.00	188.50	754.00
	Fuel / Energy charges	Hour	4.00	0.00	0.00
Total hire charges of Machinery				Rs:	2698.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Air compressor	Hour	4.00	164.80	659.20
2	Crew for Waggon drill	Hour	4.00	283.90	1135.60
3	Bar bender	Day	0.50	555.00	277.50
4	Mason Cl- II	Day	0.50	400.00	200.00
5	mazdoor	Day	1.00	350.00	350.00
Total cost of Labour				Rs:	2622.30

labour component/unit qty 104.90  
 Add contractor's profit and overhead charges 13.615% 14.30  
 labour component/unit qty (including contractor's profit) 119.20

**ABSTRACT:**

A. Cost of Materials	Rs: 13137.73
B. Hire charges of Machinery	Rs: 2698.00
C. Cost of Labour	Rs: 2622.30
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 18458.03
Lead Charges for 1 Km for FA 0.05 cum @	31.5 Rs./Cum 1.575
Lead Charges for 1Km for Steel (including Loading and Unloading Charges) 0.30 tonne @	168.6 Rs./Tonne 51.122892
Total cost for 25.00 Nos.	Rs: 21023.79
Rate per Each (A+B+C+D)/25	Rs: 841.00

IRR-DAW-1-14

Providing and fixing 25 mm dia. 2.75 m long ribbed steel anchor rods with one end split and driven firmly using steel wedge into 1.25 m deep 45 to 50 mm dia. hole drilled in bed rock and other end provided with L- bend for embedding in concrete / masonry for spillway and appurtenant works including drilling and cleaning hole, filling hole with thick cement slurry, driving anchor rod, cost of all materials, machinery, labour, steel wedge etc., complete with initial lead upto 1 km and all lifts.  
 Consider 25 anchor rods for analysis.

DATA:

**RATE ANALYSIS**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Use rate of 50 mm dia drill bit	Rm	31.25	62.50	1953.13
2	Use rate of air hose 50 m 1 Nos.	Hour	3.00	18.75	56.25
3	Anchor rod 25 mm dia	kg	277.92	34.00	9449.28
4	Cement	kg	62.50	5.35	334.38
5	Gas for splitting anchor rods	LS	5.00	37.70	188.50
6	Steel wedges	LS	10.00	16.00	160.00
Total cost of Materials				Rs:	12141.54

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Air compressor 8.5 cmm ( ele )	Hour	3.00	170.80	512.40
	Fuel / Energy charges	Hour	3.00	315.20	945.60
2	Waggon drill	Hour	3.00	188.50	565.50
	Fuel / Energy charges	Hour	3.00	0.00	0.00
Total hire charges of Machinery				Rs:	2023.50

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Air compressor	Hour	3.00	164.80	494.40
2	Crew for Waggon drill	Hour	3.00	283.90	851.70
3	Bar bender	Day	0.50	555.00	277.50
4	Mason Cl- II	Day	0.50	400.00	200.00
5	Gas cutter	Day	1.00	445.00	445.00
6	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	2968.60

labour component/unit qty 118.70  
 Add contractor's profit and overhead charges 13.615% 16.20  
 labour component/unit qty (including contractor's profit) 134.90

**ABSTRACT:**

A. Cost of Materials	Rs: 12141.54
B. Hire charges of Machinery	Rs: 2023.50
C. Cost of Labour	Rs: 2968.60
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 17133.64
Lead Charges for 1Km for Steel (including Loading and Unloading Charges) 0.28 tonne @	168.6 Rs./Tonne 46.857312
Total cost for 25.00 Nos.	Rs: 19513.25
Rate per Each (A+B+C+D)/25	Rs: 780.50

IRR-DAW-2

**REINFORCEMENT & CEMENT CONCRETE WORKS :**

IRR-DAW-2-1A

Providing, fabricating and **placing in position reinforcement steel for RCC, below 36 dia rods**  
 overlaps and wastages wherever required, tying with 1.25 mm diameter soft annealed steel wire, including cost of all materials, machinery, labour etc., complete with initial lead upto 1 km and all lifts.  
 overlaps and wastage  
 Lap jointing considered for bars upto 36 mm diameter.

DATA:

**RATE ANALYSIS**UNIT :  
**1.00 tonne****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Rein.Steel with 5 % wastage	tonne	1.05	34000.00	35700.00
2	Binding wire 1.25 mm dia	kg	9.00	60.00	540.00
Total cost of Materials					<b>Rs: 36240.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
Total hire charges of Machinery					<b>Rs: 0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Bar bender	Day	2.00	555.00	1110.00
2	mazdoor	Day	6.84	350.00	2394.00
Total cost of Labour					<b>3504.00</b>

labour component/unit qty 3504.00

Add contractor's profit and overhead charges 13.615% 477.10

labour component/unit qty (including contractor's profit) **3981.10**

A.MATERIAL	36240.00
B.MACHINERY	0.00
C. LABOUR	3504.00
Total	39744.00
D.Add for contractor's profit and overheads on A+B+C	13.615% 5411.15
Lead Charges for 1Km for Steel (including Loading and Unloading Charges)	168.60 Rs/Tonne
Total cost for	1.00 tonne <b>45332.18</b>
Rate per/ TON.=(A+B+C+D) / I	<b>45332.18</b>

IRR-DAW-2-1B

Providing, fabricating and **placing in position reinforcement steel for RCC above 36 dia with welding** and wastage at 2.5%, tying with 1.25 mm diameter soft annealed steel wire, including cost of all materials, machinery, labour etc., complete with initial lead upto 1 km and all lifts.  
 overlaps and wastage  
 welding joints considered for bars above 36 mm diameter.

as per NHAI-data

DATA:

**RATE ANALYSIS**UNIT :  
**1.00 tonne****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Rein.Steel with 2.5 % wastage	tonne	1.025	34000.00	34850.00
3	Welding electrodes 5 per joint and 14 joints per One	One	70.00	13.00	910.00
Total cost of Materials					<b>Rs: 35760.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	welding machine fuel charges	hour	10.00	16.00	160.00
		hour	10.00	67.20	672.00
Total hire charges of Machinery					<b>Rs: 832.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	welder	day	2.50	445.00	1112.50
2	Bar bender	Day	2.00	555.00	1110.00
3	mazdoor	Day	6.84	350.00	2394.00
Total cost of Labour					<b>4616.50</b>

labour component/unit qty 4616.50

Add contractor's profit and overhead charges 13.615% 628.50

labour component/unit qty (including contractor's profit) **5245.00**

A. Cost of Materials	35760.00
B. Hire charges of Machinery	832.00
C. Cost of Labour	4616.50
Total	41208.50
D.Add for contractor's profit and overheads on A+B+C	13.615% 5610.54
Lead Charges for 1Km for Steel (including Loading and Unloading Charges)	168.60 Rs/Tonne
Total cost for	1.00 tonne <b>46991.86</b>
Rate per/ TON.=(A+B+C+D) / I	<b>46991.86</b>

IRR-DAW-2-2

Providing and **laying insitu vibrated M-15** ( 28 days cube compressive strength less than 15 N / sq mm ) grade cement concrete using **80 mm down size** approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for plain concrete works with initial lead upto 1 km and

all lifts. ( Cement content : 250 kg /cum with use of super plasticiser equal to 0.4% of cement content , CA : 0.98 cum, Blending Ratio of CA -- 40:30:20:10, FA : 0.35 cum )

DATA:

## RATE ANALYSIS

UNIT:  
**240.00** cum

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix	kg	60000.00	5.35	321000.00
	Cement for incidentals @ 3 kg / cum	kg	720.00	5.35	3852.00
2	Coarse aggregate 80-40 mm	cum	94.08	650.00	61152.00
	Coarse aggregate 40-20 mm	cum	70.56	1175.00	82908.00
	Coarse aggregate 20-10 mm	cum	47.04	1225.00	57624.00
3	Coarse aggregate 10 mm below	cum	23.52	900.00	21168.00
	Fine aggregate (Un-screened )	cum	84.00	95.00	7980.00
4	Super Plasticizer or AEA	kg	240.00	55.00	13200.00
5	Use rate of shuttering	sqm	120.00	325.12	39014.40
Total cost of Materials				Rs:	<b>607898.40</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Batching plant	Hour	8.00	620.70	4965.60
	Fuel / Energy charges	Hour	8.00	308.20	2465.60
2	Air compressor 7 cmm ( ele )	Hour	8.00	131.90	1055.20
	Fuel / Energy charges	Hour	8.00	252.20	2017.60
3	Tipper	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Tower crane 5 t	Hour	16.00	867.10	13873.60
	Fuel / Energy charges	Hour	16.00	145.70	2331.20
5	Concrete bucket	Hour	40.00	15.80	632.00
	Fuel / Energy charges	Hour	40.00	0.00	0.00
6	10 hp pump ( ele )	Hour	8.00	6.70	53.60
	Fuel / Energy charges	Hour	8.00	56.00	448.00
7	Needle vibrator 60 mm dia ( ele )	Hour	16.00	9.70	155.20
	Fuel / Energy charges	Hour	16.00	8.40	134.40
8	Sundries	LS	10.00	30.00	300.00
Total hire charges of Machinery				Rs:	<b>52323.20</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Air compressor	Hour	8.00	164.80	1318.40
3	Crew for Tipper ( 4 )	Hour	32.00	177.50	5680.00
4	Crew for Tower crane ( 2 )	Hour	16.00	189.30	3028.80
5	Crew for Pump	Hour	8.00	83.30	666.40
6	Crew for Needle vibrator ( 2 )	Hour	16.00	158.20	2531.20
7	Mason Class-I	Day	4.00	445.00	1780.00
8	Foreman	Day	2.00	510.00	1020.00
9	mazdoor				
	for silo ( cement handling )	Day	2.00	350.00	700.00
	for batching plant	Day	2.00	350.00	700.00
	for conveyor system	Day	2.00	350.00	700.00
	for laying & vibrating	Day	6.00	350.00	2100.00
	for cleaning / washing / curing	Day	2.00	350.00	700.00
10	Labour cost for shuttering	sqm	120.00	132.75	15930.00
Total cost of Labour				Rs:	<b>39579.60</b>

labour component/unit qty 164.90

Add contractor's profit and overhead charges 13.615% 22.50

labour component/unit qty (including contractor's profit) **187.40****ABSTRACT:**

A. Cost of Materials		Rs: 607898.40
B. Hire charges of Machinery		Rs: 52323.20
C. Cost of Labour		Rs: 39579.60
	Total	Rs: 699801.20
Add for conveyor system @	3.00%	20994.04
Add for electric sub-station/ Demand charges @	2.5%	17495.03
Add for trestle bridge for tower crane track @	4.0%	27992.05
D.Add for contractor's profit and overheads on (A+B+C)	Total 13.615%	Rs: 766282.32
Lead Charges for 1 Km for FA 84.00 cum @	31.5 Rs./Cum	Rs. 104329.34
Lead Charges for 1 Km for CA 235.20 cum @	30.4 Rs./Cum	
Total cost for 240.00 cum		Rs: 880407.74
Rate per cum (A+B+C+D)/240		Rs: 3668.40

Providing and laying insitu vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **80 mm down size** approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for plain concrete works with initial lead upto 1 km and all lifts. ( Cement content : 300 kg /cum with use of 0.4% of cement content super plasticiser , CA : 0.90 cum, Blending Ratio of CA -- 40:30:20:10, FA : 0.40 cum )

IRR-DAW-2-2A  
New Item 1-2010-11

DATA:

## RATE ANALYSIS

UNIT:  
**240.00** cum

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix	kg	72000.00	5.35	385200.00
	Cement for incidentals @ 3 kg / cum	kg	720.00	5.35	3852.00

2	Coarse aggregate 80-40 mm	cum	86.40	650.00	56160.00
	Coarse aggregate 40-20 mm	cum	64.80	1175.00	76140.00
	Coarse aggregate 20-10 mm	cum	43.20	1225.00	52920.00
	Coarse aggregate 10 mm below	cum	21.60	900.00	19440.00
3	Fine aggregate (Un-Screened )	cum	96.00	95.00	9120.00
4	Super Plasticizer or AEA	kg	288.00	55.00	15840.00
5	Use rate of shuttering	sqm	120.00	325.12	39014.40
Total cost of Materials					Rs: 657686.40

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Batching plant	Hour	8.00	620.70	4965.60
	Fuel / Energy charges	Hour	8.00	308.20	2465.60
2	Air compressor 7 cmm ( ele )	Hour	8.00	131.90	1055.20
	Fuel / Energy charges	Hour	8.00	252.20	2017.60
3	Tipper	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Tower crane 5 t	Hour	16.00	867.10	13873.60
	Fuel / Energy charges	Hour	16.00	145.70	2331.20
5	Concrete bucket	Hour	40.00	15.80	632.00
	Fuel / Energy charges	Hour	40.00	0.00	0.00
6	10 hp pump ( ele )	Hour	8.00	6.70	53.60
	Fuel / Energy charges	Hour	8.00	56.00	448.00
7	Needle vibrator 60 mm dia ( ele )	Hour	16.00	9.70	155.20
	Fuel / Energy charges	Hour	16.00	8.40	134.40
8	Sundries	LS	10.00	30.00	300.00
Total hire charges of Machinery					Rs: 52323.20

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Air compressor	Hour	8.00	164.80	1318.40
3	Crew for Tipper ( 4 )	Hour	32.00	177.50	5680.00
4	Crew for Tower crane ( 2 )	Hour	16.00	189.30	3028.80
5	Crew for Pump	Hour	8.00	83.30	666.40
6	Crew for Needle vibrator ( 2 )	Hour	16.00	158.20	2531.20
7	Mason Class-I	Day	4.00	445.00	1780.00
8	Foreman	Day	2.00	510.00	1020.00
9	mazdoor for silo ( cement handling ) for batching plant for conveyor system for laying & vibrating for cleaning / washing / curing	Day	2.00 2.00 2.00 6.00 2.00	350.00 350.00 350.00 350.00 350.00	700.00 700.00 700.00 2100.00 700.00
10	Labour cost for shuttering	sqm	120.00	132.75	15930.00
Total cost of Labour					Rs: 39579.60

labour component/unit qty 164.90  
 Add contractor's profit and overhead charges 13.615% 22.50  
 labour component/unit qty (including contractor's profit) 187.40

**ABSTRACT:**

A. Cost of Materials	Rs: 657686.40
B. Hire charges of Machinery	Rs: 52323.20
C. Cost of Labour	Rs: 39579.60
Total	Rs: 749589.20
Add for conveyor system @ 3.00%	22487.68
Add for electric sub-station/ Demand charges @ 2.5%	18739.73
Add for trestle bridge for tower crane track @ 4.0%	29983.57
Total	Rs: 820800.18
D.Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 111751.94
Lead Charges for 1 Km for FA 96.00 cum @ 31.5 Rs./Cum	3024
Lead Charges for 1 Km for CA 216.00 cum @ 30.4 Rs./Cum	6566.40
Total cost for 240.00 cum	Rs: 942142.52
Rate per cum (A+B+C+D)/240	Rs: 3925.60

IRR-DAW-2-3

Providing and laying insitu vibrated M-10 ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using 80 mm down size approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for plain concrete works with initial lead upto 1 km and all lifts. ( Cement content : 220 kg /cum with use of super plasticiser, CA: 0.98 cum, Blending Ratio of CA --40:30:20:10, FA: 0.37 cum )

DATA:

**RATE ANALYSIS**UNIT:  
**240.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix	kg	52800	5.35	282480.00
	Cement for incidentals @ 3 kg / cum	kg	720.00	5.35	3852.00
2	Coarse aggregate 80-40 mm	cum	94.08	650.00	61152.00
	Coarse aggregate 40-20 mm	cum	70.56	1175.00	82908.00
	Coarse aggregate 20-10 mm	cum	47.04	1225.00	57624.00
	Coarse aggregate 10 mm below	cum	23.52	900.00	21168.00
3	Fine aggregate (Un-Screened )	cum	88.8	95.00	8436.00
4	Super Plasticizer or AEA	kg	211.20	55.00	11616.00
5	Use rate of shuttering	sqm	120.00	325.12	39014.40
Total cost of Materials					Rs: 568250.40

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Batching plant 2 x 1.5 cum	Hour	8.00	620.70	4965.60

	Fuel / Energy charges	Hour	8.00	308.20	2465.60
2	Air compressor 7 cmm ( ele )	Hour	8.00	131.90	1055.20
	Fuel / Energy charges	Hour	8.00	252.20	2017.60
3	Tipper	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Tower crane 5 t	Hour	16.00	867.10	13873.60
	Fuel / Energy charges	Hour	16.00	145.70	2331.20
5	Concrete bucket	Hour	40.00	15.80	632.00
	Fuel / Energy charges	Hour	40.00	0.00	0.00
6	10 hp pump ( ele )	Hour	8.00	6.70	53.60
	Fuel / Energy charges	Hour	8.00	56.00	448.00
7	Needle vibrator 60 mm dia ( ele )	Hour	16.00	9.70	155.20
	Fuel / Energy charges	Hour	16.00	8.40	134.40
8	Sundries	LS	10.00	30.00	300.00
Total hire charges of Machinery				Rs:	52323.20

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Air compressor	Hour	8.00	164.80	1318.40
3	Crew for Tipper ( 4 )	Hour	32.00	177.50	5680.00
4	Crew for Tower crane ( 2 )	Hour	16.00	189.30	3028.80
5	Crew for Pump	Hour	8.00	83.30	666.40
6	Crew for Needle vibrator ( 2 )	Hour	16.00	158.20	2531.20
7	Mason Class-I	Day	4.00	445.00	1780.00
8	Foreman	Day	2.00	510.00	1020.00
9	mazdoor for silo ( cement handling ) for batching plant for conveyor system for laying & vibrating for cleaning / washing / curing	Day	2.00 2.00 2.00 6.00 2.00	350.00 350.00 350.00 350.00 350.00	700.00 700.00 700.00 2100.00 700.00
10	Labour cost for shuttering	sqm	120.00	132.75	15930.00
Total cost of Labour				Rs:	39579.60

labour component/unit qty 164.90  
 Add contractor's profit and overhead charges 13.615% 22.50  
 labour component/unit qty (including contractor's profit) 187.40

**ABSTRACT:**

A. Cost of Materials	Rs:	568250.40
B. Hire charges of Machinery	Rs:	52323.20
C. Cost of Labour	Rs:	39579.60
	Total	Rs: 660153.20
Add for conveyor system @	3.00%	1980.60
Add for electric sub-station/ Demand charges @	2.5%	16503.83
Add for trestle bridge for tower crane track @	4.0%	26406.13
	Total	Rs: 722867.76
D.Add for contractor's profit and overheads on (A+B+C+other	13.615%	Rs. 98418.45
Lead Charges for 1 Km for FA 88.80 cum @ 31.5 Rs./Cum 2797.2		
Lead Charges for 1 Km for CA 235.20 cum @ 30.4 Rs./Cum 7150.08		
Total cost for 240.00 cum	cum	Rs: 831233.49
Rate per cum	(A+B+C+D)/240	Rs: 3463.50

IRR-DAW-2-4

Providing and laying insitu vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using 40 mm down size approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for RCC works of gallery, sluice, spillway crest, spillway d / s face, energy dissipating structures, training walls, piers, abutments and such other locations with initial lead upto 1 km and all lifts.  
 ( Cement content : 310 kg / cum with use of super plasticiser, CA : 0.90 cum, blending ratio of CA-50:30:20, FA : 0.40 cum )

DATA:

**RATE ANALYSIS**

UNIT:  
**240.00 cum**

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
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1	Cement for mix	kg	74400	5.35	398040.00
2	Cement for incidentals @ 3 kg / cum	kg	720.00	5.35	3852.00
	Coarse aggregate 40-20 mm	cum	108	1175.00	126900.00
	Coarse aggregate 20-10 mm	cum	64.8	1225.00	79380.00
	Coarse aggregate 10 mm below	cum	43.2	900.00	38880.00
3	Fine aggregate (Un-Screened )	cum	96	95.00	9120.00
4	Super Plasticizer or AEA	kg	297.60	55.00	16368.00
5	Use rate of shuttering	sqm	360.00	325.12	117043.20
6	Scaffolding of shuttering @		15%		17556.48
Total cost of Materials				Rs:	807139.68

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Batching plant 2 x 1.5 cum	Hour	8.00	620.70	4965.60
	Fuel / Energy charges	Hour	8.00	308.20	2465.60
2	Air compressor 7 cmm ( ele )	Hour	8.00	131.90	1055.20
	Fuel / Energy charges	Hour	8.00	252.20	2017.60
3	Tipper	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Tower crane 5 t	Hour	16.00	867.10	13873.60
	Fuel / Energy charges	Hour	16.00	145.70	2331.20
5	Concrete bucket	Hour	40.00	15.80	632.00
	Fuel / Energy charges	Hour	40.00	0.00	0.00
6	10 hp pump ( ele )	Hour	8.00	6.70	53.60
	Fuel / Energy charges	Hour	8.00	56.00	448.00
7	Needle vibrator 60 mm dia ( ele )	Hour	16.00	9.70	155.20
	Fuel / Energy charges	Hour	16.00	8.40	134.40
8	Sundries	LS	10.00	30.00	300.00
Total hire charges of Machinery				Rs:	52323.20

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Air compressor	Hour	8.00	164.80	1318.40
3	Crew for Tipper ( 4 )	Hour	32.00	177.50	5680.00
4	Crew for Tower crane ( 2 )	Hour	16.00	189.30	3028.80
5	Crew for Pump	Hour	8.00	83.30	666.40
6	Crew for Needle vibrator ( 2 )	Hour	16.00	158.20	2531.20
7	Mason Class-I	Day	4.00	445.00	1780.00
8	Foreman	Day	2.00	510.00	1020.00
9	mazdoor for silo ( cement handling ) for batching plant for conveyor system for laying & vibrating for cleaning / washing / curing	Day	2.00 2.00 2.00 6.00 2.00	350.00 350.00 350.00 350.00 350.00	700.00 700.00 700.00 2100.00 700.00
10	Labour cost for shuttering	sqm	360.00	132.75	47790.00
11	Labour cost for scaffolding @		15%		7168.50
Total cost of Labour				Rs:	78608.10

labour component/unit qty 327.50  
 Add contractor's profit and overhead charges 13.615% 44.60  
 labour component/unit qty (including contractor's profit) 372.10

**ABSTRACT:**

A. Cost of Materials	Rs: 807139.68	
B. Hire charges of Machinery	Rs: 52323.20	
C. Cost of Labour	Rs: 78608.10	
Add for aggregate conveyor system @	Total Rs: 938070.98	
3.0%	28142.13	
Add for electric sub-station / Demand charges @	2.50%	23451.77
Add for trestle bridge for tower crane track @	4.0%	37522.84
	Total Rs: 1027187.72	
D.Add for contractor's profit and overheads on (A+B+C+other)	13.615%	Rs: 139851.61
Lead Charges for 1 Km for FA 96.00 cum @	31.5 Rs./Cum	3024
Lead Charges for 1 Km for CA 216.00 cum @	30.4 Rs./Cum	6566.40
Total cost for 240.00 cum		Rs: 1176629.73
Rate per cum (A+B+C+D)/240		Rs: 4902.60

IRR-DAW-2-4A  
 new item2-2010-11

Providing and laying insitu vibrated M-25 ( 28 days cube compressive strength not less than 25 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for **RCC works of gallery, sluice, spillway crest, spillway d / s face, energy dissipating structures, training walls, piers, abutments and such other locations with initial lead upto 1 km and all lifts.**

( Cement content : 360 kg / cum with use of super plasticiser, CA : 0.90 cum, blending ratio of CA-50:30:20, FA : 0.40 cum )

DATA:

**RATE ANALYSIS****UNIT:****240.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix	kg	86400	5.35	462240.00
2	Cement for incidentals @ 3 kg / cum	kg	720.00	5.35	3852.00
	Coarse aggregate 40-20 mm	cum	108	1175.00	126900.00
	Coarse aggregate 20-10 mm	cum	64.8	1225.00	79380.00
	Coarse aggregate 10 mm below	cum	43.2	900.00	38880.00
3	Fine aggregate (Un-Screened )	cum	96	95.00	9120.00
4	Super Plasticizer or AEA	kg	345.60	55.00	19008.00
5	Use rate of shuttering	sqm	360.00	325.12	117043.20
6	Scaffolding of shuttering @		15%		17556.48
Total cost of Materials				Rs:	873979.68

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Batching plant 2 x 1.5 cum	Hour	8.00	620.70	4965.60
	Fuel / Energy charges	Hour	8.00	308.20	2465.60
2	Air compressor 7 cmm ( ele )	Hour	8.00	131.90	1055.20
	Fuel / Energy charges	Hour	8.00	252.20	2017.60
3	Tipper	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Tower crane 5 t	Hour	16.00	867.10	13873.60
	Fuel / Energy charges	Hour	16.00	145.70	2331.20
5	Concrete bucket	Hour	40.00	15.80	632.00
	Fuel / Energy charges	Hour	40.00	0.00	0.00
6	10 hp pump ( ele )	Hour	8.00	6.70	53.60
	Fuel / Energy charges	Hour	8.00	56.00	448.00
7	Needle vibrator 60 mm dia ( ele )	Hour	16.00	9.70	155.20
	Fuel / Energy charges	Hour	16.00	8.40	134.40
8	Sundries	LS	10.00	30.00	300.00
Total hire charges of Machinery					Rs: 52323.20

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Air compressor	Hour	8.00	164.80	1318.40
3	Crew for Tipper ( 4 )	Hour	32.00	177.50	5680.00
4	Crew for Tower crane ( 2 )	Hour	16.00	189.30	3028.80
5	Crew for Pump	Hour	8.00	83.30	666.40
6	Crew for Needle vibrator ( 2 )	Hour	16.00	158.20	2531.20
7	Mason Class-I	Day	4.00	445.00	1780.00
8	Foreman	Day	2.00	510.00	1020.00
9	mazdoor	Day		0.00	
	for silo ( cement handling )	Day	2.00	350.00	700.00
	for batching plant	Day	2.00	350.00	700.00
	for conveyor system	Day	2.00	350.00	700.00
	for laying & vibrating	Day	6.00	350.00	2100.00
	for cleaning / washing / curing	Day	2.00	350.00	700.00
10	Labour cost for shuttering	sqm	360.00	132.75	47790.00
11	Labour cost for scaffolding @	15%			7168.50
Total cost of Labour					Rs: 78608.10

labour component/unit qty 327.50  
 Add contractor's profit and overhead charges 13.615% 44.60  
 labour component/unit qty (including contractor's profit) **372.10**

**ABSTRACT:**

A. Cost of Materials	Rs: 873979.68
B. Hire charges of Machinery	Rs: 52323.20
C. Cost of Labour	Rs: 78608.10
	Total Rs: 1004910.98
Add for aggregate conveyor system @ 3.0%	30147.33
Add for electric sub-station / Demand charges @ 2.50%	25122.77
Add for trestle bridge for tower crane track @ 4.0%	40196.44
	Total Rs: 1100377.52
D.Add for contractor's profit and overheads on (A+B+C+other) 13.615%	149816.4
Lead Charges for 1 Km for FA 96.00 cum @ 31.5 Rs./Cum	3024
Lead Charges for 1 Km for CA 216.00 cum @ 30.4 Rs./Cum	6566.40
Total cost for 240.00 cum	Rs: 1259784.32
<b>Rate per cum</b>	Rs: 5249.10

IRR-DAW-2-4B  
 new item3-2010-11

Providing and laying insitu vibrated M-25 ( 28 days cube compressive strength not less than 25 N / sq mm ) grade cement concrete using 20 mm down size approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for RCC works of gallery, sluice, spillway crest, spillway d/s face, energy dissipating structures, training walls, piers, abutments and such other locations with initial lead upto 1 km and all lifts.

( Cement content : 380 kg / cum with use of super plasticiser,  
 CA : 0.90 cum, blending ratio of CA-65:35, FA : 0.40 cum )

DATA:

**RATE ANALYSIS**UNIT:  
240.00 cum**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix	kg	91200	5.35	487920.00
2	Cement for incidentals @ 3 kg / cum	kg	720.00	5.35	3852.00
	Coarse aggregate 20-10 mm	cum	140.4	1225.00	171990.00
	Coarse aggregate 10 mm below	cum	75.6	900.00	68040.00
3	Fine aggregate (Un-Screened )	cum	96	95.00	9120.00
4	Super Plasticizer or AEA	kg	364.80	55.00	20064.00
5	Use rate of shuttering	sqm	360.00	325.12	117043.20
6	Scaffolding of shuttering @	15%			17556.48
Total cost of Materials					Rs: 895585.68

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Batching plant 2 x 1.5 cum	Hour	8.00	620.70	4965.60
	Fuel / Energy charges	Hour	8.00	308.20	2465.60
2	Air compressor 7 cmm ( ele )	Hour	8.00	131.90	1055.20
	Fuel / Energy charges	Hour	8.00	252.20	2017.60
3	Tipper	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Tower crane 5 t	Hour	16.00	867.10	13873.60

5	Fuel / Energy charges Concrete bucket	Hour Hour	16.00 40.00	145.70 15.80	2331.20 632.00
6	Fuel / Energy charges 10 hp pump ( ele )	Hour Hour	40.00 8.00	0.00 6.70	0.00 53.60
7	Fuel / Energy charges Needle vibrator 60 mm dia ( ele )	Hour Hour	8.00 16.00	56.00 9.70	448.00 155.20
8	Fuel / Energy charges Sundries	Hour LS	16.00 10.00	8.40 30.00	134.40 300.00
Total hire charges of Machinery					Rs: 52323.20

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Air compressor	Hour	8.00	164.80	1318.40
3	Crew for Tipper ( 4 )	Hour	32.00	177.50	5680.00
4	Crew for Tower crane ( 2 )	Hour	16.00	189.30	3028.80
5	Crew for Pump	Hour	8.00	83.30	666.40
6	Crew for Needle vibrator ( 2 )	Hour	16.00	158.20	2531.20
7	Mason Class-I	Day	4.00	445.00	1780.00
8	Foreman	Day	2.00	510.00	1020.00
9	mazdoor	Day			0.00
	for silo ( cement handling )	Day	2.00	350.00	700.00
	for batching plant	Day	2.00	350.00	700.00
	for conveyor system	Day	2.00	350.00	700.00
	for laying & vibrating	Day	6.00	350.00	2100.00
	for cleaning / washing / curing	Day	2.00	350.00	700.00
10	Labour cost for shuttering	sqm	360.00	132.75	47790.00
11	Labour cost for scaffolding @	15%			7168.50
Total cost of Labour					Rs: 78608.10

labour component/unit qty 327.50

Add contractor's profit and overhead charges 13.615% 44.60

labour component/unit qty (including contractor's profit) 372.10**ABSTRACT:**

A. Cost of Materials	Rs: 895585.68
B. Hire charges of Machinery	Rs: 52323.20
C. Cost of Labour	Rs: 78608.10
	Rs: 1026516.98
Add for aggregate conveyor system @	3.0%
Add for electric sub-station / Demand charges @	2.50%
Add for trestle bridge for tower crane track @	4.0%
	Total
D.Add for contractor's profit and overheads on (A+B+C+other)	13.615%
Lead Charges for 1 Km for FA	96.00 cum @
Lead Charges for 1 Km for CA	216.00 cum @
Total cost for	240.00 cum
Rate per cum	(A+B+C+D)/240
	Rs: 153037.51
	31.5 Rs./Cum 3024
	30.4 Rs./Cum 6566.40
	Rs: 1286664.00
	Rs: 5361.10

IRR-DAW-2-5

Providing and laying insitu vibrated M-15 ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for plain concrete works with initial lead upto 1 km and all lifts. ( Cement content : 260 kg / cum with use of super plasticiser, CA : 0.90 cum, Blending Ratio of CA - 50:30:20, FA : 0.40 cum )

DATA:

**RATE ANALYSIS**

UNIT :

14.00 cum

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix.	kg	3640.00	5.35	19474.00
	Cement for incidentals @ 3 kg	kg	42.00	5.35	224.70
2	Coarse aggregate 40-20 mm	cum	6.3	1175.00	7402.50
	Coarse aggregate 20-10 mm	cum	3.78	1225.00	4630.50
	Coarse aggregate 10 mm below	cum	2.52	900.00	2268.00
3	Fine aggregate (Un-Screened )	cum	5.6	95.00	532.00
4	Super plasticizer	kg	14.56	55.00	800.80
5	Use rate of shuttering	sqm	14.00	216.75	3034.50
6	Use rate of scaffolding @	15%			455.18
Total cost of Materials					Rs: 38822.18

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate	Amount
				in Rs.	in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.0	51.70	413.60
	Fuel / Energy charges	Hour	8.0	28.00	224.00
2	10 hp pump ( ele )	Hour	1.0	6.70	6.70
	Fuel / Energy charges	Hour	1.0	56.00	56.00
3	Needle vibrator 40 mm dia ( ele )	Hour	8.0	8.00	64.00
	Fuel / Energy charges	Hour	8.0	5.60	44.80
Total hire charges of Machinery					Rs: 809.10

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	mazdoor	Day			
	for batching cement ( cement handling )	Day	2.00	350.00	700.00
	for batching other materials	Day	9.00	350.00	3150.00
	for loading mortar pans	Day	4.00	350.00	1400.00

	for laying	Day	3.00	350.00	1050.00
	for conveying concrete	Day	14.00	350.00	4900.00
	for cleaning / washing / curing	Day	1.00	350.00	350.00
6	Labour cost of shuttering	sqm	14.00	88.50	1239.00
7	Labour cost of scaffolding @	15%			185.85
Total cost of Labour				Rs:	16526.35
			1180.50		
			Add contractor's profit and overhead charges	13.615%	160.70
			<u>1341.20</u>		

**ABSTRACT:**

A. Cost of Materials	Rs: 38822.18
B. Hire charges of Machinery	Rs: 809.10
C. Cost of Labour	Rs: 16526.35
Total	Rs: 56157.63
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 7645.86
Lead Charges for 1 Km for FA	5.60 cum @ 31.5 Rs./Cum 176.4
Lead Charges for 1 Km for CA	12.60 cum @ 30.4 Rs./Cum 383.04
Total cost for	14.00 cum Rs: 64362.93
Rate per cum	(A+B+C+D)/14 Rs: 4597.40

IRR-DAW-2-6

Providing and laying **insitu vibrated M-15** ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates **with placing and sinking plums of size 150 to 80 mm upto 15 percent for gravity type structures** including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 1 km and all lifts. ( Cement content : 260 kg / cum of concrete with use of plums and super plasticiser of 0.4% of cement quantity, CA : 0.77 cum, Blending Ratio of CA : 50:30:20, FA : 0.34 cum, plums of size 150 to 80 mm : 0.25 cum )

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix	kg	4277	5.35	22881.95
	Cement for incidentals @ 3 kg / cum	kg	49.35	5.35	264.02
2	Coarse aggregate 40-20 mm	cum	6.33	1175.00	7437.75
	Coarse aggregate 20-10 mm	cum	3.8	1225.00	4655.00
	Coarse aggregate 10 mm below	cum	2.53	900.00	2277.00
3	Plums of size 150 to 80 mm	cum	4.11	350.00	1439.38
4	Fine aggregate (Un-Screened )	cum	5.59	95.00	531.34
5	Super Plasticizer	kg	17.11	55.00	940.94
6	Use rate of shuttering for 40 uses	sqm	16.45	216.75	3565.54
7	Scaffolding of shuttering @	15%			534.83
Total cost of Materials				Rs:	44527.75

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
3	Needle vibrator 60 mm dia ( ele )	Hour	8.00	9.70	77.60
	Fuel / Energy charges	Hour	8.00	8.40	67.20
Total hire charges of Machinery				Rs:	845.10

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor				
	for batching cement ( cement handling	Day	2.00	350.00	700.00
	for batching other materials	Day	9.00	350.00	3150.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for loading plums	Day	1.00	350.00	350.00
	for laying concrete and plums	Day	4.00	350.00	1400.00
	for conveying concrete	Day	13.99	350.00	4895.10
	for conveying plums	Day	3.00	350.00	1050.00
	for cleaning / washing / curing	Day	1.00	350.00	350.00
7	Labour for shuttering	sqm	16.45	88.50	1455.83
8	Labour for scaffolding @	15%			218.37
Total cost of Labour				Rs:	18970.80

labour component/unit qty	1153.20
Add contractor's profit and overhead charges	13.615% 157.00
labour component/unit qty (including contractor's profit)	<u>1310.20</u>

**ABSTRACT:**

A. Cost of Materials	Rs: 44527.75
B. Hire charges of Machinery	Rs: 845.10
C. Cost of Labour	Rs: <u>18970.80</u>
	Rs: <u>64343.65</u>
D.Add for contractor's profit and overheads on (A+B+C)	Total 13.615%
Lead Charges for 1 Km for FA	5.59 cum @ 31.5 Rs./Cum 176.1795
Lead Charges for 1 Km for CA and Plums	16.77 cum @ 30.4 Rs./Cum 509.88
Total cost for	16.45 cum
Rate per cum	(A+B+C+D)/16.45 Rs: <u>73790.10</u>
	Rs: <u>4485.70</u>

IRR-DAW-2-7

Providing and laying insitu vibrated M-10 ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for plain concrete works with initial lead upto 1 km and all lifts. ( Cement content 220 kg / cum with use of super plasticiser, CA : 0.90 cum, Blending Ratio of CA : 50:30:20, FA : 0.40 cum )

DATA:

**RATE ANALYSIS**UNIT:  
**16.53 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix	kg	3636.60	5.35	19455.81
	Cement for incidentals @ 3 kg/ cum	kg	49.59	5.35	265.31
2	Coarse aggregate 40-20 mm	cum	7.44	1175.00	8740.24
	Coarse aggregate 20-10 mm	cum	4.46	1225.00	5467.30
3	Coarse aggregate 10 mm below	cum	2.98	900.00	2677.86
4	Fine aggregate (Un-Screened )	cum	6.61	95.00	628.14
5	Super plasticizer	kg	14.55	55.00	800.05
6	Use rate of shuttering	sqm	16.53	216.75	3582.88
	Use rate of scaffolding @		15%		537.43
	Total cost of Materials			Rs:	<b>42155.02</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
3	Needle vibrator 40 mm dia ( ele )	Hour	8.00	8.00	64.00
	Fuel / Energy charges	Hour	8.00	5.60	44.80
	Total hire charges of Machinery			Rs:	<b>809.10</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	mazdoor				
	for batching cement ( cement handling	Day	2.00	350.00	700.00
	for batching other materials	Day	9.00	350.00	3150.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	3.00	350.00	1050.00
	for conveying concrete	Day	16.53	350.00	5785.50
	for cleaning / washing / curing	Day	1.00	350.00	350.00
6	Labour cost of shuttering	sqm	16.53	88.50	1462.91
7	Labour cost of scaffolding @		15%		219.44
	Total cost of Labour			Rs:	<b>17669.35</b>

labour component/unit qty	1068.90
Add contractor's profit and overhead charges	13.615% 145.50
labour component/unit qty (including contractor's profit)	<u>1214.40</u>

**ABSTRACT:**

A. Cost of Materials	Rs: 42155.02
B. Hire charges of Machinery	Rs: 809.10
C. Cost of Labour	Rs: <u>17669.35</u>
	Rs: <u>60633.47</u>
D.Add for contractor's profit and overheads on (A+B+C)	Total 13.615%
Lead Charges for 1 Km for FA	6.61 cum @ 31.5 Rs./Cum 208.278
Lead Charges for 1 Km for CA	14.88 cum @ 30.4 Rs./Cum 452.26
Total cost for	16.53 cum
Rate per cum	(A+B+C+D)/16.53 Rs: <u>69549.26</u>
	Rs: <u>4207.50</u>

IRR-DAW-2-8

Providing and laying insitu vibrated M-15 ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for plain concrete works with initial lead upto 1 km and all lifts. ( Cement content : 280 kg / cum with use of super plasticiser, CA : 0.80 cum, Blending Ratio of CA - 65:35, FA : 0.44 cum )

DATA:

**RATE ANALYSIS**UNIT:  
**15.87 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix	kg	4443.6	5.35	23773.26
	Cement for incidentals @ 3 kg/ cum	kg	47.61	5.35	254.71
2	Coarse aggregate 20-10 mm	cum	8.25	1225.00	10109.19
	Coarse aggregate 10 mm below	cum	4.44	900.00	3999.24
3	Fine aggregate (Un-Screened )	cum	6.98	95.00	663.37
4	Super plasticiser	kg	17.77	55.00	977.59
5	Use rate of shuttering	sqm	15.87	216.75	3439.82
6	Use rate of scaffolding @		15%		515.97
Total cost of Materials				Rs:	43733.15

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
3	Needle vibrator 40 mm dia ( ele )	Hour	8.00	8.00	64.00
	Fuel / Energy charges	Hour	8.00	5.60	44.80
Total hire charges of Machinery				Rs:	809.10

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	mazdoor				
	for batching cement ( cement handling	Day	2.00	350.00	700.00
	for batching other materials	Day	9.00	350.00	3150.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	3.00	350.00	1050.00
	for conveying concrete	Day	15.87	350.00	5554.50
	for cleaning / washing / curing	Day	1.00	350.00	350.00
6	Labour cost of shuttering	sqm	15.87	88.50	1404.50

7	Labour cost of scaffolding @	15%		210.68	
	Total cost of Labour			Rs: 17371.18	
labour component/unit qty	1094.60				
Add contractor's profit and overhead charges	13.615% 149.00				

**ABSTRACT:**

A. Cost of Materials		Rs: 43733.15
B. Hire charges of Machinery		Rs: 809.10
C. Cost of Labour		Rs: 17371.18
	Total	Rs: 61913.43
D.Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 8429.51
Lead Charges for 1 Km for FA	6.98 cum @	31.5 Rs./Cum 219.9582
Lead Charges for 1 Km for CA	12.70 cum @	30.4 Rs./Cum 385.96
Total cost for	15.87 cum	Rs: 70948.86
Rate per cum	(A+B+C+D)/15.87	Rs: 4470.60

IRR-DAW-2-9

Providing and laying insitu vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **20 mm** down size approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for RCC works of **spillway bridge, blockouts** and such other similar structures with congested reinforcement with **initial lead upto 1 km and all lifts.** ( Cement content : 330 kg / cum with use of super plasticiser, CA : 0.80 cum, Blending Ratio of CA -- 65:35, FA : 0.44 cum )

DATA:

**RATE ANALYSIS**UNIT:  
13.47 cum**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix	kg	4445.1	5.35	23781.29
	Cement for incidentals @ 3 kg/ cum	kg	40.41	5.35	216.19
2	Coarse aggregate 20-10 mm	cum	7.00	1225.00	8580.39
	Coarse aggregate 10 mm below	cum	3.77	900.00	3394.44
3	Fine aggregate (Un-Screened )	cum	5.93	95.00	563.05
4	Super plasticiser	ltr	17.78	55.00	977.92
5	Use rate of shuttering	sqm	33.68	216.75	7299.06
6	Scaffolding of shuttering @	100%			7299.06
	Total cost of Materials			Rs: 52111.40	

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
3	Needle vibrator 40 mm dia ( ele )	Hour	8.00	8.00	64.00
	Fuel / Energy charges	Hour	8.00	5.60	44.80
	Total hire charges of Machinery			Rs: 809.10	

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	mazdoor				0.00
	for batching cement ( cement handling )	Day	2.00	350.00	700.00
	for batching other materials	Day	9.00	350.00	3150.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	3.00	350.00	1050.00
	for conveying concrete	Day	13.47	350.00	4714.50
	for cleaning/ washing/ curing	Day	1.00	350.00	350.00
6	Labour cost of shuttering	sqm	33.68	88.50	2980.24
7	Labour cost of scaffolding @	100%			2980.24
	Total cost of Labour			Rs: 20876.48	

labour component/unit qty	1549.90
Add contractor's profit and overhead charges	13.615% 211.00
labour component/unit qty (including contractor's profit)	1760.90

**ABSTRACT:**

A. Cost of Materials		Rs: 52111.40
B. Hire charges of Machinery		Rs: 809.10
C. Cost of Labour		Rs: 20876.48
	Total	Rs: 73796.98
D.Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 10047.46
Lead Charges for 1 Km for FA	5.93 cum @	31.5 Rs./Cum 186.6942
Lead Charges for 1 Km for CA	10.78 cum @	30.4 Rs./Cum 327.59
Total cost for	13.47 cum	Rs: 84358.72
Rate per cum	(A+B+C+D)/13.47	Rs: 6262.70

IRR-DAW-2-10

Providing and forming porous concrete body drain of size **68.5 x 68.5 cm** with 23 cm diameter central hole using cement and 20 mm down approved, clean, hard, graded coarse aggregates in 1 : 3.50 proportion by volume including cost of all materials, machinery, labour, formwork, curing etc., complete with initial lead upto 1 km and all lifts. (M15 Cement content : 400kg/cum, CA : 1cum, Blending Ratio of CA -- 65:35)

DATA:

## RATE ANALYSIS

UNIT:  
20.00 Rm

## A. MATERIALS:

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement	kg	3424	5.35	18318.40
2	Coarse aggregate 20-10 mm	cum	5.56	1225.00	6815.90
3	Coarse aggregate 10-4.75 mm	cum	3.00	900.00	2696.40
4	Use rate of shuttering	sqm	76.00	54.25	4122.93
Total cost of Materials				Rs:	31953.63

## B. MACHINERY:

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	0.50	6.70	3.35
	Fuel / Energy charges	Hour	0.50	56.00	28.00
Total hire charges of Machinery				Rs:	668.95

## C. LABOUR:

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	83.30	41.65
3	Mason Class-I	Day	1.00	445.00	445.00
4	mazdoor for batching cement ( cement handling	Day	2.00	350.00	700.00
	for batching other materials	Day	6.00	350.00	2100.00
	for loading mortar pans	Day	2.00	350.00	700.00
	for laying & packing concrete	Day	2.00	350.00	700.00
	for conveying concrete	Day	8.56	350.00	2996.00
5	Fitter shuttering	Day	3.00	400.00	1200.00
Total cost of Labour				Rs:	10640.25

labour component/unit qty 532.00

Add contractor's profit and overhead charges 13.615% 72.40

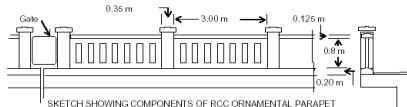
labour component/unit qty (including contractor's profit) 604.40

## ABSTRACT:

A. Cost of Materials	Rs: 31953.63
B. Hire charges of Machinery	Rs: 668.95
C. Cost of Labour	Rs: <u>10640.25</u>
Total	Rs: 43262.83
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Lead Charges for 1 Km for CA 8.56 cum @	30.4 Rs./Cum
Total cost for 20.00 Rm	260.22
Rate per Rm (A+B+C+D)/20	Rs: 49413.28
	Rs: 2470.70

IRR-DAW-2-11  
(a)

Providing and laying insitu vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for RCC solid parapet consisting of **35 cm x 20 cm kerb**, **35 cm x 35 cm x 1 m pillars spaced approximately at 3.35 m c / c, 12.5 cm thick wall 80 cm height with 12.5 cm thick and 35 cm wide coping slab for wall and 12 .5 cm thick 40 cm x 40 cm coping for pillars with top edges of kerb and coping chamfered / rounded as directed etc., complete ( excluding cost of providing and placing reinforcement steel and gate ) with initial lead upto 1 km and all lifts. ( Cement content 350 kg / cum with use of super plasticiser( 0.4% by wt. of cement), CA : 0.80 cum, Blending Ratio of CA-65:35, FA : 0.44 cum)**



DATA:

## RATE ANALYSIS

UNIT:  
36.00 Rm

## A. MATERIALS:

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement mix	kg	3034.5	5.35	16234.58
	Cement for incidentals @ 5 kg / cum	kg	43.35	5.35	231.92
2	Coarse aggregate 20-10 mm	cum	4.51	1225.00	5524.75
	Coarse aggregate 10-4.75 mm	cum	2.43	900.00	2187.00
3	Fine aggregate (Un-Screened )	cum	3.81	95.00	361.95
4	Super plasticiser	kg	12.14	55.00	667.59
5	Use rate of shuttering	sqm	95.00	216.75	20591.25
6	Scaffolding of shuttering @ 15%	LS	2.00	30.00	60.00
7	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	48947.73

## B. MACHINERY:

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
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1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
2	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	Needle vibrator 40 mm ( ele )	Hour	8.00	8.00	64.00
3	Fuel / Energy charges	Hour	8.00	5.60	44.80
3	10 hp pump ( ele )	Hour	0.50	6.70	3.35
	Fuel / Energy charges	Hour	0.50	56.00	28.00
	Total hire charges of Machinery				Rs: 777.75

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	83.30	41.65
3	Crew for Vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	2.00	445.00	890.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching cement ( cement handling )	Day	2.00	350.00	700.00
	for batching other materials	Day	9.00	350.00	3150.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying & packing concrete	Day	2.00	350.00	700.00
	for conveying concrete	Day	8.67	350.00	3034.50
	for curing & miscellaneous	Day	2.00	350.00	700.00
7	Labour for shuttering	sqm	95.00	88.50	8407.50
8	Labour for scaffolding @	15%			1261.13
	Total cost of Labour				Rs: 23757.98

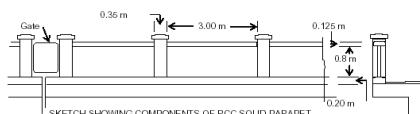
labour component/unit qty 659.90  
 Add contractor's profit and overhead charges 13.615% 89.80  
 labour component/unit qty (including contractor's profit) 749.70

**ABSTRACT:**

A. Cost of Materials	Rs: 48947.73
B. Hire charges of Machinery	Rs: 777.75
C. Cost of Labour	Rs: 23757.98
	Rs: 73483.46
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Lead Charges for 1 Km for FA	3.81 cum @ 31.5 Rs./Cum
Lead Charges for 1 Km for CA	6.94 cum @ 30.4 Rs./Cum
Total cost for	36.00 Rm
<b>Rate per Rm</b>	(A+B+C+D)/36
	Rs: 10004.77
	120.015
	210.98
	Rs: 83819.22
	Rs: 2328.30

IRR-DAW-2-12  
(b)

Providing and laying **insitu** vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates including cost of all materials, machinery, labour, formwork, centering, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete for **RCC ornamental parapet consisting of 35 cm x 20 cm kerb**, 35 cm x 35 cm x 1 m pillars spaced approximately at 3.5 m apart, 20 cm x 15 cm posts 80 cm height approximately 30 cm c / c with 12.5 cm thick and 35 cm wide coping slab for posts and pillars with top edges of kerb and coping chamfered or rounded as directed etc., **complete** ( excluding cost of providing and placing reinforcement steel and gate ) with initial lead upto 1 km and all lifts. ( Cement content : 350 kg / cum with use of super plasticiser(0.4% by wt. of cement, CA : 0.80 cum, Blending Ratio of CA--65:35, FA : 0.44 cum) )



DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate	Amount in Rs.
				in Rs.	
1	Cement mix	kg	2450	5.35	13107.50
	Cement for incidentals @ 5 kg / cum	kg	35.00	5.35	187.25
2	Coarse aggregate 20-10 mm	cum	3.64	1225.00	4459.00
	Coarse aggregate 10-4.75 mm	cum	1.96	900.00	1764.00
3	Fine aggregate (Un-Screened )	cum	3.08	95.00	292.60
4	Super plasticiser	kg	9.80	55.00	539.00
5	Use rate of shuttering	sqm	115.00	216.75	24926.25
6	Scaffolding of shuttering @	15%			3738.94
7	Sundries	LS	2.00	30.00	60.00
	Total cost of Materials				Rs: 49074.54

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	Needle vibrator 40 mm ( ele )	Hour	8.00	8.00	64.00
	Fuel / Energy charges	Hour	8.00	5.60	44.80

3	10 hp pump ( ele ) Fuel / Energy charges	Hour Hour	0.50 0.50	6.70 56.00	3.35 28.00
Total hire charges of Machinery					Rs: 777.75

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	83.30	41.65
3	Crew for Vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	2.00	445.00	890.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor				
	for batching cement ( cement handling )	Day	2.00	350.00	700.00
	for batching other materials	Day	9.00	350.00	3150.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying & packing concrete	Day	2.00	350.00	700.00
	for conveying concrete	Day	7.00	350.00	2450.00
	for curing & miscellaneous	Day	2.00	350.00	700.00
7	Labour for shuttering	sqm	115.00	88.50	10177.50
8	Labour for scaffolding @	15%			1526.63
Total cost of Labour					Rs: 25208.98

labour component/unit qty 700.20

Add contractor's profit and overhead charges 13.615% 95.30

labour component/unit qty (including contractor's profit) 795.50**ABSTRACT:**

A. Cost of Materials				Rs: 49074.54
B. Hire charges of Machinery				Rs: 777.75
C. Cost of Labour				Rs: 25208.98
D.Add for contractor's profit and overheads on (A+B+C)	Total	13.615%		Rs: 75061.26
Lead Charges for 1 Km for FA	3.08	cum @	31.5 Rs./Cum	97.02
Lead Charges for 1 Km for CA	5.60	cum @	30.4 Rs./Cum	170.24
Total cost for	36.00		Rm	Rs: 85548.11
Rate per Rm	(A+B+C+D)/36			Rs: 2376.30

IRR-DAW-2-13

Providing and laying **insitu M- 25** ( 28 days cube compressive strength not less than 25 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates for wearing coat including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position in alternate panels, levelling, compacting, finishing, curing, packing joints with asphalt mortar etc., **complete with initial lead upto 1 km and all lifts.**  
**( Cement content : 380 kg / cum with use of super plasticiser(0.4% by wt. of cement, CA : 0.80 cum, Blending Ratio of CA=65:35, FA : 0.45 cum)**

DATA:

**RATE ANALYSIS**UNIT:  
**11.70 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mix	kg	4446	5.35	23786.10
	Cement for incidentals @ 5 kg / cum	kg	58.50	5.35	312.98
2	Coarse aggregate 20-10 mm	cum	6.084	1225.00	7452.90
	Coarse aggregate 10 mm below	cum	3.276	900.00	2948.40
3	Fine aggregate (Un-Screened )	cum	5.265	95.00	500.18
4	Super Plasticizer	kg	17.78	55.00	978.12
5	Use rate of shuttering	sqm	5.85	216.75	1267.99
6	Sundries ( asphalt mortar etc )	LS	5.00	30.00	150.00
Total cost of Materials				Rs:	<b>37396.66</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300/200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	0.50	6.70	3.35
	Fuel / Energy charges	Hour	0.50	56.00	28.00
Total hire charges of Machinery				Rs:	<b>668.95</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	83.30	41.65
3	Mason Class-I	Day	3.00	445.00	1335.00
4	work inspector	Day	1.00	450.00	450.00
5	mazdoor for batching cement ( cement handling ) for batching materials for loading mortar pans for laying & compacting for conveying concrete for cleaning/ washing/ curing Labour cost for shuttering	Day	2.00 9.00 4.00 5.00 11.70 1.00 5.85	350.00 350.00 350.00 350.00 350.00 350.00 88.50	700.00 3150.00 1400.00 1750.00 4095.00 350.00 517.73
Total cost of Labour				Rs:	<b>15546.98</b>
labour component/unit qty 1328.80					
Add contractor's profit and overhead charges 13.615% 180.90					
labour component/unit qty (including contractor's profit) <b>1509.70</b>					

**ABSTRACT:**

A. Cost of Materials	Rs: 37396.66
B. Hire charges of Machinery	Rs: 668.95
C. Cost of Labour	Rs: 15546.98
Total	Rs: 53612.58
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Lead Charges for 1 Km for FA 5.27 cum @ 31.5 Rs./Cum	165.8475
Lead Charges for 1 Km for CA 9.36 cum @ 30.4 Rs./Cum	284.54
Total cost for 11.70 cum	Rs: 61362.32
Rate per cum	Rs: 5244.60

IRR-DAW-2-14

**Pre-cooling to control placement temperature of cement concrete** in the range of 18 to 21 C at the concrete placement point by inundation of coarse aggregates and adding flaked ice as part of mixing water including cost of all materials, machinery, labour etc., **complete with all leads and lifts.**

DATA:

**RATE ANALYSIS**UNIT:  
**500 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Sundries ( amonia gas etc)	LS	3.00	30.00	90.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>90.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Ice maker unit consisting of: Compressor 125 hp - 1 No Condenser with 30 hp motor - 1 No. Ice makers 10 t / day each - 3 Nos. Pump 2 hp for ice cutting - 3 Nos. Pump 2 hp for pumping water-3 Nos. Screw conveyor with 15 hp motor -1 Ice elevator with 5 hp motor - 1 No. Fuel / Energy charges for system	Hour	24.00	170.20	4084.80
			24.00	798.60	19166.40
Total hire charges of Machinery				Rs:	<b>23251.20</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs

1	Crew for Ice maker unit	Hour	24.00	131.80	3163.20
2	mazdoor for Ice chamber ( 2 x 3 )	Day	6.00	350.00	2100.00
	for miscellaneous works ( 1 x 3 )	Day	3.00	350.00	1050.00
	Total cost of Labour				Rs: 6313.20

labour component/unit qty 12.60  
 Add contractor's profit and overhead charges 13.615% 1.70  
 labour component/unit qty (including contractor's profit) 14.30

**ABSTRACT:**

A. Cost of Materials	Rs: 90.00
B. Hire charges of Machinery	Rs: 23251.20
C. Cost of Labour	Rs: 6313.20
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 29654.40
Total cost for 500.00 cum	13.615%
Rate per cum	(A+B+C+D)/500

IRR-DAW-2-15 Conveying and fixing elastomeric bearing for spillway bridge including cleaning and preparing surface, mixing and applying adhesive, fixing bearing in correct position etc., including cost of all materials except bearings, machinery, labour etc., complete with all leads and lifts.

DATA:

**RATE ANALYSIS**

UNIT:

**6.00 Nos.****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Synthetic adhesive ( Resin + Hardener)	kg	0.60	360.00	216.00
2	Sundries	LS	2.00	30.00	60.00
Total cost of Materials					Rs: 276.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Nil		0.00	0.00	0.00
Total hire charges of Machinery					Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Marker / Erector	Day	1.00	550.00	550.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour					Rs: 1700.00

labour component/unit qty 283.30  
 Add contractor's profit and overhead charges 13.615% 38.60  
 labour component/unit qty (including contractor's profit) 321.90

**ABSTRACT:**

A. Cost of Materials	Rs: 276.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1700.00
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 1976.00
Total cost for 6.00 Nos.	13.615%
Rate per Each	(A+B+C+D)/6

IRR-DAW-2-16 Providing and constructing 150 mm dia hume pipe weep holes for concrete / masonry walls including providing 20 x 20 x 20 cm size porous concrete block made of cement and 20 mm down coarse aggregate in 1 : 4 proportion including 10 cm thick sand backing at the junction of wall and soil back fill, cost of all materials, machinery, labour etc., complete with lead upto 1 km and all lifts.

DATA:

## RATE ANALYSIS

UNIT:  
3.00 Rm

## A. MATERIALS:

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	150 mm dia hume pipe	Rm	2.90	275.00	797.50
2	Cement	kg	3.00	5.35	16.05
3	20 - 10 mm coarse aggregate	cum	0.01	1225.00	9.80
4	Sand for filling	cum	0.02	95.00	1.90
Total cost of Materials				Rs:	825.25

## B. MACHINERY:

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Nil		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	0.00

## C. LABOUR:

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Mason Class-II	Day	0.25	400.00	100.00
2	mazdoor	Day	0.25	350.00	87.50
Total cost of Labour				Rs:	187.50

labour component/unit qty 62.50  
 Add contractor's profit and overhead charges 13.615% 8.50  
 labour component/unit qty (including contractor's profit) 71.00

## ABSTRACT:

A. Cost of Materials	Rs: 825.25
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 187.50
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 1012.75
Lead Charges for 1 Km for FA	0.02 cum @ 31.5 Rs./Cum 0.63
Lead Charges for 1 Km for CA	0.01 cum @ 30.4 Rs./Cum 0.24
Total cost for	3.00 Rm Rs: 1151.51
Rate per Rm	(A+B+C+D)/3 Rs: 383.80

IRR-DAW-2-17

Providing and forming expansion joint for spillway bridge consisting of 75 x 75 x 6 mm angles 2 numbers provided with 25 cm long 12 mm dia. anchors fixed to both flanges at 15 cm c/c and 140 x 6 mm plate welded on top of one of the angle including cost of all materials, machinery, labour, providing and fixing 38 mm thick joint filler board matching the thickness of wearing coat, painting etc., complete with lead upto 1 km and all lifts.

DATA:

## RATE ANALYSIS

UNIT:  
7.50 Rm

## A. MATERIALS:

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Structural steel plate	kg	50.70	37.40	1896.18
2	Structural steel angle	kg	104.50	37.50	3918.75
3	12 dia steel anchors	kg	27.40	34.00	931.60
4	Welding electrodes	Nos	70.00	13.00	910.00
5	Joint filler board 19 mm thick	sqm	1.00	630.00	630.00
6	Sundries ( cutting gas / paint etc.)	LS	1.50	30.00	45.00
Total cost of Materials				Rs:	8331.53

## B. MACHINERY:

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Welding set	Hour	8.00	16.00	128.00
	Fuel / Energy charges	Hour	8.00	67.20	537.60
2	Sundries (cutting torch/ welding guns etc)	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	725.60

## C. LABOUR:

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Marker / Fabricator / Erector	Day	1.50	550.00	825.00
2	Gas cutter / Welder	Day	1.50	445.00	667.50
3	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	2192.50

labour component/unit qty 292.30  
 Add contractor's profit and overhead charges 13.615% 39.80  
 labour component/unit qty (including contractor's profit) 332.10

## ABSTRACT:

A. Cost of Materials	Rs: 8331.53
B. Hire charges of Machinery	Rs: 725.60
C. Cost of Labour	Rs: 2192.50
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 11249.63
Lead Charges for 1Km for Steel (including Loading and Unloading Charges)	0.18 tonne @ 168.6 Rs./Tonne 30.78636
Total cost for	7.50 Rm Rs: 12812.06
Rate per Rm	(A+B+C+D)/7.50 Rs: 1708.30

IRR\_DAW-3

## MASONRY &amp; GUNITING WORKS :

IRR-DAW-3-1

Providing and constructing un-coursed rubble stone masonry using approved stones in cement mortar 1 : 3 proportion including cost of all materials, machinery, labour, scaffolding, cleaning, packing mortar, wedging stone chips, curing etc., complete with initial lead upto 1 km and all lifts.

( Cement content : 190 kg/cum of masonry, rubble stones : 0.85 cum,  
stone chips : 0.15 cum/cum, FA : 0.4 cum)

DATA:

## RATE ANALYSIS

UNIT:  
**25.00** cum

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mortar	kg	4750	5.35	25412.50
2	Rubble stones	cum	21.25	318.00	6757.50
3	Stone chips	cum	3.75	350.00	1312.50
4	Sand (Screened )	cum	10	165.00	1650.00
Total cost of Materials				Rs:	<b>35132.50</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
Total hire charges of Machinery				Rs:	<b>700.30</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	work inspector	Day	1.00	450.00	450.00
4	Mason Class-I	Day	2.50	445.00	1112.50
5	Mason Class-II	Day	4.00	400.00	1600.00
6	Chavali	Day	16.00	400.00	6400.00
7	mazdoor	Day	2.00	350.00	700.00
	for batching cement ( cement handling )	Day	6.00	350.00	2100.00
	for batching sand	Day	4.00	350.00	1400.00
	for loading mortar pans	Day	10.00	350.00	3500.00
	for laying & packing mortar	Day	1.00	350.00	350.00
	for loading chips	Day	4.00	350.00	1400.00
	for washing rubble / finishing / curing	Day	12.00	350.00	4200.00
Total cost of Labour				Rs:	<b>25053.40</b>

labour component/unit qty 1002.10

Add contractor's profit and overhead charges 13.615% 136.40

labour component/unit qty (including contractor's profit) **1138.50**

**ABSTRACT:**

A. Cost of Materials	Rs: 35132.50
B. Hire charges of Machinery	Rs: 700.30
C. Cost of Labour	Rs: 25053.40
Total	Rs: 60886.20
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 8289.66
Lead Charges for 1 Km for FA 10.00 cum @ 31.5 Rs./Cum	315
Lead Charges for 1 Km for Stones/Stone Chips 25.00 cum @ 30.4 Rs./Cum	760.00
Total cost for 25.00 cum	Rs: 70250.86
Rate per cum (A+B+C+D)/25	Rs: 2810.00

IRR-DAW-3-2

Providing and constructing un-coursed rubble stone masonry using approved stones in cement mortar 1 : 4 proportion including cost of all materials, machinery, labour, scaffolding, cleaning, packing mortar, wedging stone chips, curing etc., complete with initial lead upto

1 km and all lifts.

( Cement content : 143 kg/cum of masonry, rubble stones : 0.85 cum, stone chips : 0.15 cum/cum, FA : 0.4 cum)

For 1 cum masonry :-

DATA:

## RATE ANALYSIS

UNIT:  
**25.00** cum

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mortar	kg	3575	5.35	19126.25
2	Rubble stones	cum	21.25	318.00	6757.50
3	Stone chips	cum	3.75	350.00	1312.50
4	Sand (Screened )	cum	10	165.00	1650.00
Total cost of Materials				Rs:	<b>28846.25</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr(ele)	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
Total hire charges of Machinery				Rs:	<b>700.30</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	work inspector	Day	1.00	450.00	450.00
4	Mason Class-I	Day	2.50	445.00	1112.50
5	Mason Class-II	Day	4.00	400.00	1600.00
6	Chavali	Day	16.00	400.00	6400.00
7	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	<b>25053.40</b>

for batching sand	Day	6.00	350.00	2100.00
for loading mortar pans	Day	4.00	350.00	1400.00
for laying & packing mortar	Day	10.00	350.00	3500.00
for loading chips	Day	1.00	350.00	350.00
for washing rubble / finishing / curing	Day	4.00	350.00	1400.00
for conveying mortar / chips	Day	12.00	350.00	4200.00
<b>Total cost of Labour</b>			<b>Rs:</b>	<b>25053.40</b>
labour component/unit qty		1002.10		
Add contractor's profit and overhead charges	13.615%	136.40		
labour component/unit qty (including contractor's profit)		<b>1138.50</b>		

**ABSTRACT:**

A. Cost of Materials			Rs: 28846.25
B. Hire charges of Machinery			Rs: 700.30
C. Cost of Labour			Rs: 25053.40
D.Add for contractor's profit and overheads on (A+B+C)	13.615%	136.40	Rs: 54599.95
Lead Charges for 1 Km for FA	10.00	cum @	31.5 Rs./Cum 315
Lead Charges for 1 Km for Stones/Stone Chips	25.00	cum @	30.4 Rs./Cum 760.00
Total cost for	25.00		cum
<b>Rate per cum</b>		(A+B+C+D)/25	<b>Rs: 63108.73</b>
			Rs: 2524.30

IRR-DAW-3-3

Providing and **constructing** coursed rubble face stone masonry using approved rubble stones in **cement mortar 1 : 3** proportion including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, curing etc., with initial lead upto 1 km and all lifts.  
 ( Thickness of the CR face assumed: 0.75 m, Cement content : 178 kg/cum of masonry, rubble stones : 0.35 cum, stone chips : 0.15 cum/cum, FA : 0.375 cum, CR stones 30 x 30 x 45 cm : 9.75 No, CR stones 30 x 30 x 60 cm : 3.25 No )

DATA:

**RATE ANALYSIS**UNIT:  
**25.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mortar	kg	4450	5.35	23807.50
2	Coursed rubble stone 30 x 30 x 45 cm	Nos	244	23.00	5612.00
3	Coursed rubble stone 30 x 30 x 60 cm	Nos	82	26.00	2132.00
4	Rubble stones	cum	8.75	318.00	2782.50
5	Stone chips	cum	3.75	350.00	1312.50
6	Sand (Screened )	cum	9.375	165.00	1546.88
<b>Total cost of Materials</b>				<b>Rs:</b>	<b>37193.38</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
<b>Total hire charges of Machinery</b>				<b>Rs:</b>	<b>700.30</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	work inspector	Day	1.00	450.00	450.00
4	Stone chiseller CI -II	Day	7.00	400.00	2800.00
5	Mason Class-I	Day	2.50	445.00	1112.50
6	Mason Class-II	Day	4.00	400.00	1600.00
7	Chavali	Day	16.00	400.00	6400.00
8	mazdoor				
	for batching cement ( cement handling )	Day	2.00	350.00	700.00
	for batching sand	Day	6.00	350.00	2100.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying & packing mortar	Day	10.00	350.00	3500.00
	for loading chips	Day	1.00	350.00	350.00
	for washing rubble / finishing / curing	Day	4.00	350.00	1400.00
	for conveying mortar / chips	Day	12.00	350.00	4200.00
<b>Total cost of Labour</b>				<b>Rs:</b>	<b>27853.40</b>

labour component/unit qty		1114.10		
Add contractor's profit and overhead charges	13.615%	151.70		
labour component/unit qty (including contractor's profit)		<b>1265.80</b>		

**ABSTRACT:**

A. Cost of Materials			Rs: 37193.38
B. Hire charges of Machinery			Rs: 700.30
C. Cost of Labour			Rs: 27853.40
D.Add for contractor's profit and overheads on (A+B+C)	13.615%	136.40	Rs: 65747.08
Lead Charges for 1 Km for FA	9.38	cum @	31.5 Rs./Cum 295.3125
Lead Charges for 1 Km for Stones/Stone Chips	26.81	cum @	30.4 Rs./Cum 815.02
Total cost for	25.00		cum
<b>Rate per cum</b>		(A+B+C+D)/25	<b>Rs: 75808.87</b>
			Rs: 3032.40

IRR-DAW-3-4

Providing and **constructing** coursed rubble face stone masonry using approved rubble stones in **cement mortar 1 : 4** proportion including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, curing etc., with initial lead upto 1 km and all lifts.  
 ( Cement content : 134 kg/cum of masonry, rubble stones : 0.35 cum, stone chips : 0.15 cum/cum, FA : 0.375 cum, CR stones 30 x 30 x 45 cm : 9.75 No, CR stones 30 x 30 x 60 cm : 3.25 No )

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	UNIT: 25.00 cum	
				Rate in Rs.	Amount in Rs
1	Cement for mortar	kg	3350	5.35	17922.50
2	Coursed rubble stone 30 x 30 x 45 cm	Nos	244	23.00	5612.00
3	Coursed rubble stone 30 x 30 x 60 cm	Nos	82	26.00	2132.00
4	Rubble stones	cum	8.75	318.00	2782.50
5	Stone chips	cum	3.75	350.00	1312.50
6	Sand (Screened )	cum	9.375	165.00	1546.88
Total cost of Materials				Rs:	<b>31308.38</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
Total hire charges of Machinery				Rs:	<b>700.30</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	work inspector	Day	1.00	450.00	450.00
4	Stone chiseller Cl -II	Day	7.00	400.00	2800.00
5	Mason Class-I	Day	2.50	445.00	1112.50
6	Mason Class-II	Day	4.00	400.00	1600.00
7	Chavali	Day	16.00	400.00	6400.00
8	mazdoor for batching cement ( cement handling )	Day	2.00	350.00	700.00
	for batching sand	Day	6.00	350.00	2100.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying & packing mortar	Day	10.00	350.00	3500.00
	for loading chips	Day	1.00	350.00	350.00
	for washing rubble / finishing / curing	Day	4.00	350.00	1400.00
	for conveying mortar / chips	Day	12.00	350.00	4200.00
Total cost of Labour				Rs:	<b>27853.40</b>

labour component/unit qty 1114.10

Add contractor's profit and overhead charges 13.615% 151.70

labour component/unit qty (including contractor's profit) **1265.80**

**ABSTRACT:**

A. Cost of Materials	Rs: 31308.38	
B. Hire charges of Machinery	Rs: 700.30	
C. Cost of Labour	Rs: 27853.40	
Total	Rs: 59862.08	
D.Add for contractor's profit and overheads on (A+B+C)	13.615%	
Lead Charges for 1 Km for FA	9.38 cum @ 31.5 Rs./Cum	Rs: 8150.22
Lead Charges for 1 Km for Stones/Stone Chips	26.81 cum @ 30.4 Rs./Cum	Rs: 815.02
Total cost for	25.00 cum	Rs: 69122.63
Rate per cum	(A+B+C+D)/25	Rs: 2764.90

IRR-DAW-3-5

Providing and **constructing chisel drafted and hammer dressed face stone masonry** with approved stones in cement mortar 1 : 3 proportion including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, curing etc., complete with initial lead upto 1 km and all lifts.  
 ( Cement content : 167 kg/cum of masonry, rubble stones : 0.35 cum, stone chips : 0.15 cum/cum, FA : 0.35 cum, Dressed stones 30 x 30 x 45 cm : 10 No, Dressed stones 30 x 30 x 60 cm : 3.40 No )

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mortar	kg	4175	5.35	22336.25
2	Coursed rubble stone 30 x 30 x 45 cm	Nos	250	23.00	5750.00
3	Coursed rubble stone 30 x 30 x 60 cm	Nos	85	26.00	2210.00
4	Rubble stones	cum	8.75	318.00	2782.50
5	Stone chips	cum	3.75	350.00	1312.50
6	Sand (Screened )	cum	8.75	165.00	1443.75
Total cost of Materials					Rs: 35835.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
Total hire charges of Machinery					Rs: 700.30

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	work inspector	Day	1.00	450.00	450.00
4	Stone chiseller Cl -I	Day	14.00	445.00	6230.00
5	Stone chiseller Cl -II	Day	7.00	400.00	2800.00
6	Mason Class-I	Day	2.50	445.00	1112.50
7	Mason Class-II	Day	4.00	400.00	1600.00
8	Chavali	Day	16.00	400.00	6400.00
9	mazdoor				
	for batching cement ( cement handling )	Day	2.00	350.00	700.00
	for batching sand	Day	6.00	350.00	2100.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying & packing mortar	Day	10.00	350.00	3500.00
	for loading chips	Day	1.00	350.00	350.00
	for washing rubble / finishing / curing	Day	4.00	350.00	1400.00
	for conveying mortar / chips	Day	12.00	350.00	4200.00
Total cost of Labour					Rs: 34083.40

labour component/unit qty 1363.30  
 Add contractor's profit and overhead charges 13.615% 185.60  
 labour component/unit qty (including contractor's profit) 1548.90

**ABSTRACT:**

A. Cost of Materials	Rs: 35835.00	
B. Hire charges of Machinery	Rs: 700.30	
C. Cost of Labour	Rs: 34083.40	
Total	Rs: 70618.70	
D.Add for contractor's profit and overheads on (A+B+C)	13.615%	
Lead Charges for 1 Km for FA	8.75 cum @ 31.5 Rs./Cum	Rs: 9614.74
Lead Charges for 1 Km for Stones/Stone Chips	27.22 cum @ 30.4 Rs./Cum	Rs: 827.34
Total cost for	25.00 cum	Rs: 81336.40
Rate per cum	(A+B+C+D)/25	Rs: 3253.50

IRR-DAW-3-6

Providing and **constructing chisel drafted and hammer dressed face stone masonry** with approved stones in cement mortar 1 : 4 proportion including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, curing etc., complete with initial lead upto 1 km and all lifts.  
 ( Cement content : 125 kg/cum of masonry, rubble stones : 0.35 cum, stone chips : 0.15 cum/cum, FA : 0.35 cum, Dressed stones 30 x 30 x 45 cm : 10 No, Dressed stones 30 x 30 x 60 cm : 3.40 No )

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement for mortar	kg	3125	5.35	16718.75
2	Coursed rubble stone 30 x 30 x 45 cm	Nos	250	23.00	5750.00
3	Coursed rubble stone 30 x 30 x 60 cm	Nos	85	26.00	2210.00

4	Rubble stones	cum	8.75	318.00	2782.50
5	Stone chips	cum	3.75	350.00	1312.50
6	Sand (Screened )	cum	8.75	165.00	1443.75
Total cost of Materials					Rs: 30217.50

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ltr ( ele )	Hour	8.00	51.70	413.60
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	10 hp pump ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
Total hire charges of Machinery					Rs: 700.30

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	1.00	83.30	83.30
3	work inspector	Day	1.00	450.00	450.00
4	Stone chiseller Cl -I	Day	14.00	445.00	6230.00
5	Stone chiseller Cl -II	Day	7.00	400.00	2800.00
6	Mason Class-I	Day	2.50	445.00	1112.50
7	Mason Class-II	Day	4.00	400.00	1600.00
8	Chavali	Day	16.00	400.00	6400.00
9	mazdoor for batching cement ( cement handling for batching sand for loading mortar pans for laying & packing mortar for loading chips for washing rubble / finishing / curing for conveying mortar / chips	Day	2.00 6.00 4.00 10.00 1.00 4.00 12.00	350.00 350.00 350.00 350.00 350.00 350.00 350.00	700.00 2100.00 1400.00 3500.00 350.00 1400.00 4200.00
Total cost of Labour					Rs: 34083.40

labour component/unit qty 1363.30

Add contractor's profit and overhead charges 13.615% 185.60

labour component/unit qty (including contractor's profit) 1548.90**ABSTRACT:**

A. Cost of Materials	Rs: 30217.50
B. Hire charges of Machinery	Rs: 700.30
C. Cost of Labour	Rs: 34083.40
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 65001.20
Lead Charges for 1 Km for FA 8.75 cum @ 31.5 Rs./Cum 275.625	Rs: 8849.91
Lead Charges for 1 Km for Stones/Stone Chips 27.22 cum @ 30.4 Rs./Cum 827.34	
Total cost for 25.00 cum	Rs: 74954.07
Rate per cum (A+B+C+D)/25	Rs: 2998.20

IRR-DAW-3-7

Providing cement mortar pointing to coursed rubble face stone masonry  
 50 mm deep in CM 1 : 2 proportion by volume including raking and cleaning  
 joints, pressing mortar into joints, cost of all materials, labour, scaffolding,  
 finishing, curing etc., complete with initial lead upto 1 km and all lifts.

DATA:

**RATE ANALYSIS**

UNIT:

100.00 sqm

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement	kg	455.446	5.35	2436.64
2	Sand (Screened )	cum	0.735	165.00	121.28
Total cost of Materials					Rs: 2557.91

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL (Manual mixing )		0.00	0.00	0.00
Total hire charges of Machinery					Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Mason Class-I	Day	10.00	445.00	4450.00
2	mazdoor	Day	10.00	350.00	3500.00

Total cost of Labour

labour component/unit qty 79.50

Add contractor's profit and overhead charges 13.615% 10.80

labour component/unit qty (including contractor's profit) **90.30**

Rs: 7950.00

**ABSTRACT:**

A. Cost of Materials	Rs: 2557.91
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 7950.00
Total	Rs: 10507.91
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 1430.65
Lead Charges for 1 Km for FA	0.74 cum @ 31.5 Rs./Cum
Total cost for	100.00 sqm
Rate per sqm	(A+B+C+D)/100

IRR-DAW-3-8

Providing cement mortar pointing to coursed rubble face stone masonry

50 mm deep in CM 1 : 3 proportion by volume including raking and cleaning joints, pressing mortar into joints, cost of all materials, labour, scaffolding, finishing, curing etc., complete with initial lead upto 1 km and all lifts.

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement	kg	321.80	5.35	1721.63
2	Sand (Screened )	cum	0.74	165.00	121.28
Total cost of Materials					Rs: 1842.91

UNIT:  
**100.00** sqm**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL Manual mixing )		0.00	0.00	0.00
Total hire charges of Machinery					Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Mason Class-I	Day	10.00	445.00	4450.00
2	mazdoor	Day	10.00	350.00	3500.00

Total cost of Labour

Rs: 7950.00

labour component/unit qty 79.50

Add contractor's profit and overhead charges 13.615% 10.80

labour component/unit qty (including contractor's profit) **90.30****ABSTRACT:**

A. Cost of Materials	Rs: 1842.91
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 7950.00
Total	Rs: 9792.91
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 1333.3
Lead Charges for 1 Km for FA	0.74 cum @ 31.5 Rs./Cum
Total cost for	100.00 sqm
Rate per sqm	(A+B+C+D)/100

Rs: 111.50

IRR\_DAW-4

**CONTRACTION JOINT WORKS:**

IRR-DAW-4-1

Providing 25 mm thick guniting to rock or masonry surface in cement

mortar 1 : 3 proportion by weight including cost of all materials, machinery, labour, raking-out and cleaning joints, scaffolding wherever required and all other ancillary operations etc., complete with initial lead upto 1 km and all lifts.

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cement	kg	609.90	5.35	3262.97
2	Sand (Screened )	cum	1.09	165.00	179.85
3	Use rate of grout hose 25 m	Hour	8.00	5.78	46.25
4	Use rate of water hose 25 m	Hour	8.00	5.78	46.25
5	Use rate of guniting nozzle	Hour	8.00	3.50	28.00
6	Sundries	LS	2.00	30.00	60.00
Total cost of Materials					Rs: 3623.32

UNIT:  
**36.00** sqm**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Guniting equipment	Hour	8.00	110.10	880.80
	Fuel / Energy charges	Hour	8.00	0.00	0.00
2	Air compressor 8.5 cmm ( ele )	Hour	8.00	170.80	1366.40
	Fuel / Energy charges	Hour	8.00	315.20	2521.60
3	Pump 10 hp ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
4	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs: 4891.50

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Guniting equipment	Hour	8.00	219.70	1757.60
2	Crew for Air compressor	Hour	8.00	164.80	1318.40
3	Crew for pump	Hour	1.00	83.30	83.30
4	Mason Cl II	Day	1.00	400.00	400.00
5	mazdoor for cement handling	Day	2.00	350.00	700.00
	for sand	Day	2.00	350.00	700.00
	mazdoor for other works	Day	2.00	350.00	700.00
Total cost of Labour					Rs: 5659.30

labour component/unit qty 157.20  
 Add contractor's profit and overhead charges 13.615% 21.40  
 labour component/unit qty (including contractor's profit) 178.60

**ABSTRACT:**

A. Cost of Materials	Rs: 3623.32
B. Hire charges of Machinery	Rs: 4891.50
C. Cost of Labour	Rs: 5659.30
	Total Rs: 14174.12
Add for scaffolding	3%
	Total Rs: 14528.47
D.Add for contractor's profit and overheads on (A+B+C+other)	13.615%
Lead Charges for 1 Km for FA 1.09 cum @ 31.5 Rs./Cum	Rs. 1978.05
Total cost for 36.00 sqm	34.335
Rate per sqm (A+B+C+D)/36	Rs: 16540.85
	Rs: 459.50

IRR-DAW-4-2

Providing and **constructing contraction joints by fixing 16 SWG 60 cm wide annealed copper sheets** in two lines with 8 mm dia steel dowel rods on either side at one metre interval, forming 125 x 125 mm size groove in between copper strips for filling asphalt including fixing 15 mm dia two legged G.I pipe with U - bend at bottom for circulation of steam at intervals and forming 150 mm dia formed drain behind water seals including cost of all materials, machinery, labour, filling asphalt, circulation of steam through pipes etc., complete with all leads and lifts. consider 12 m height of contraction joint for analysis.

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Copper sheet 16 SWG	kg	215.00	695.00	149425.00
2	Reinforcement steel 8 mm dia	kg	30.00	34.00	1020.00
3	GI pipe 15 mm dia	Rm	24.00	100.00	2400.00
4	Asphalt	kg	192.00	46.00	8832.00
5	Elbows / Nipple / Plugs etc.,	LS	5.00	17.00	85.00
6	Soldering materials	LS	40.00	17.00	680.00
Total cost of Materials					Rs: 162442.00

UNIT:  
12.00 Rm

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Steam circulation arrangement	LS	8.00	17.00	136.00
	Fuel charges ( gas for heating )	LS	10.00	17.00	170.00
Total hire charges of Machinery					Rs: 306.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Welder	Day	1.00	445.00	445.00
2	Tinsmith	Day	1.00	445.00	445.00
3	Bar bender	Day	0.50	555.00	277.50
4	Pipe fitter	Day	0.50	510.00	255.00
5	Mason Class-I	Day	0.50	445.00	222.50
6	mazdoor	Day	1.00	350.00	350.00
Total cost of Labour					Rs: 1995.00

labour component/unit qty 166.30  
 Add contractor's profit and overhead charges 13.615% 22.60  
 labour component/unit qty (including contractor's profit) 188.90

**ABSTRACT:**

A. Cost of Materials	Rs: 162442.00
B. Hire charges of Machinery	Rs: 306.00
C. Cost of Labour	Rs: 1995.00
D. Add for contractor's profit and overheads on (A+B+C)	Total 13.615%
Total cost for 12.00 Rm	
Rate per Rm (A+B+C+D)/12	Rs: 164743.00
	Rs: 22429.76
	Rs: 187172.76
	Rs: 15597.70

IRR-DAW-4-3

Providing and **constructing contraction joints by fixing 310 mm wide central bulb type approved quality PVC water stop** in two lines with 8 mm diameter steel dowel rods on either side at 1m interval, forming 125 x 125 mm size groove in between two water stops, providing & fixing 15 mm dia two legged G.I pipe with U-bend at bottom for circulation steam at interval, forming 150 mm diameter formed drain behind water seals including filling groove with asphalt, circulation of steam at intervals, cost of all materials, machinery, labour etc., complete with all leads and lifts.

DATA:

**RATE ANALYSIS**UNIT:  
12.00 Rm.**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	PVC water stops 310 mm wide	Rm	24.50	470.00	11515.00
2	Reinforcement steel 8 mm dia	kg	30.00	34.00	1020.00
3	GI pipe 15 mm dia	Rm	24.00	100.00	2400.00
4	Asphalt	kg	192.00	46.00	8832.00
5	Elbows / Nipple / Plugs etc.,	LS	5.00	17.00	85.00
6	Vulcanizing materials	LS	25.00	17.00	425.00
Total cost of Materials					Rs: 24277.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Steam circulation arrangement	LS	8.00	17.00	136.00
	Fuel charges ( gas for heating )	LS	10.00	17.00	170.00
Total hire charges of Machinery					Rs: 306.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Welder	Day	0.50	445.00	222.50
2	Bar bender	Day	0.50	555.00	277.50
3	Pipe fitter	Day	0.50	510.00	255.00
4	Mason Class-I	Day	0.50	445.00	222.50
5	mazdoor	Day	1.00	350.00	350.00
Total cost of Labour					Rs: 1327.50

labour component/unit qty 110.60  
 Add contractor's profit and overhead charges 13.615% 15.10  
 labour component/unit qty (including contractor's profit) 125.70

**ABSTRACT:**

A. Cost of Materials	Rs: 24277.00
B. Hire charges of Machinery	Rs: 306.00
C. Cost of Labour	Rs: 1327.50
D. Add for contractor's profit and overheads on (A+B+C)	Total 13.615%
Total cost for 12.00 Rm.	
Rate per Rm. (A+B+C+D)/12	Rs: 25910.50
	Rs: 3527.71
	Rs: 29438.21
	Rs: 2453.20

IRR-DAW-4-4

Providing and **constructing contraction joints by fixing 16 SWG 60 cm wide annealed copper sheets** in single line with 8 mm dia steel dowel rods on either side at 1 metre interval including cost of all materials, machinery, labour etc., complete with all leads and lifts.

DATA:

**RATE ANALYSIS**UNIT:  
8.7 Rm.**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Copper sheet 16 SWG	kg	77.00	695.00	53515.00
2	Reinforcement steel 8 mm dia	kg	15.00	34.00	510.00
3	Soldering materials	LS	10.00	17.00	170.00
Total cost of Materials					Rs: 54195.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Sundries such as soldering gun etc.,	LS	3.00	30.00	90.00
	Fuel charges ( gas )	LS	5.00	17.00	85.00
Total hire charges of Machinery					Rs: 175.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Welder	Day	0.5	445.00	222.50
2	Tinsmith	Day	0.5	445.00	222.50
3	Bar bender	Day	0.5	555.00	277.50
4	Mason Class-I	Day	0.5	445.00	222.50
5	mazdoor	Day	0.5	350.00	175.00
Total cost of Labour					Rs: 1120.00

labour component/unit qty 128.70  
 Add contractor's profit and overhead charges 13.615% 17.50  
 labour component/unit qty (including contractor's profit) 146.20

**ABSTRACT:**

A. Cost of Materials	Rs: 54195.00
B. Hire charges of Machinery	Rs: 175.00
C. Cost of Labour	Rs: 1120.00
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 55490.00
Total cost for 8.70 Rm	Rs: 7554.96
Rate per Rm (A+B+C+D)/8.70	Rs: 63044.96
	Rs: 7246.50

IRR-DAW-4-5

Providing and **constructing contraction joints by fixing 23 cm wide central bulb type PVC water stop in single line supported by 10 mm dia steel dowel rods on either side at 1 metre interval including cost of all materials, machinery, labour, vulcanising joints etc., complete with all leads and lifts.**

DATA:

**RATE ANALYSIS**UNIT:  
8.70 Rm**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	PVC water seal 23 cm wide	Rm	9.00	45.00	405.00
2	Reinforcement steel 10 mm dia	kg	10.00	34.00	340.00
3	Vulcanising materials	LS	2.00	17.00	34.00
Total cost of Materials					Rs: 779.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Sundries such as heater etc.,	LS	0.50	30.00	15.00
	Fuel charges for heating	LS	0.50	17.00	8.50
Total hire charges of Machinery					23.50

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Welder	Day	0.50	445.00	222.50
2	Bar bender	Day	0.50	555.00	277.50
3	Mason Class-I	Day	0.50	445.00	222.50
4	mazdoor	Day	0.50	350.00	175.00
Total cost of Labour					Rs: 897.50

labour component/unit qty 103.20  
 Add contractor's profit and overhead charges 13.615% 14.10  
 labour component/unit qty (including contractor's profit) 117.30

**ABSTRACT:**

A. Cost of Materials	Rs: 779.00
B. Hire charges of Machinery	Rs: 23.50
C. Cost of Labour	Rs: 897.50
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 1700.00
Total cost for 8.70 Rm	Rs: 231.46
Rate per Rm (A+B+C+D)/8.70	Rs: 1931.46
	Rs: 222.00

IRR\_DAW-5

**EARTH / ROCKFILL EMBANKMENT WORKS :**

IRR-DAW-5-1

Providing **heaving embankment** using selected **impervious soil** from **approved borrow areas** in layers of **25 to 30 cm** before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transportation, spreading soil in layer of specified thickness, breaking clods, sectioning, **watering**, compacting to density control of **not less than 95 percent** or as stipulated using **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc.,** complete with initial lead upto 1 km and all lifts.

DATA:

**RATE ANALYSIS**UNIT:  
825.00 cum**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
Total cost of Materials					Rs: 0.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Angle dozer 90 hp	Hour	5.50	1715.50	9435.25
	Fuel / Energy charges	Hour	5.50	610.50	3357.75
2	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
3	Tippers 5.00 cum capacity 5 Nos.	Hour	40.00	446.70	17868.00
	Fuel / Energy charges	Hour	40.00	299.90	11996.00

4	Pump 5 hp ( ele )	Hour	4.00	3.00	12.00
5	Fuel / Energy charges	Hour	4.00	28.00	112.00
5	Water tanker 8000 ltr	Hour	8.00	402.50	3220.00
5	Fuel / Energy charges	Hour	8.00	299.90	2399.20
6	Vibratory Roller 8 tonne	Hour	6.50	1342.20	8724.30
6	Fuel / Energy charges	Hour	6.50	1031.40	6704.10
7	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs: 84523.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Dozer	Hour	5.50	236.60	1301.30
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	40.00	177.50	7100.00
4	Crew for Pump	Hour	4.00	83.30	333.20
5	Crew for Water tanker	Hour	8.00	177.50	1420.00
6	Crew for Roller	Hour	6.50	263.60	1713.40
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour					Rs: 16060.70

labour component/unit qty 19.50  
 Add contractor's profit and overhead charges 13.615% 2.70  
 labour component/unit qty (including contractor's profit) 22.20

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 84523.00
C. Cost of Labour	Rs: 16060.70
D.Add for contractor's profit and overheads on (A+B+C)	Total 100583.70
Total cost for 825.00 cum	Rs: 13694.47
Rate per cum (A+B+C+D)/825	Rs: 114278.17
	Rs: 138.50

IRR-DAW-5-2

**Providing cut-off trench filling using selected impervious soil from approved borrow areas in layers of 25 to 30 cm before compaction** including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transportation, spreading soil to specified thickness, breaking clods, sectioning, **watering**, compacting to density control of **not less than 95 percent** using **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller** as stipulated etc., complete with initial lead upto 1 km and all lifts.

DATA:

**RATE ANALYSIS**

UNIT :

825.00 cum

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials					Rs: 0.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Angle dozer 90 hp	Hour	5.50	1715.50	9435.25
2	Fuel / Energy charges	Hour	5.50	610.50	3357.75
2	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
2	Fuel / Energy charges	Hour	8.00	872.70	6981.60
3	Tipplers 5.00 cum capacity 6 Nos.	Hour	48.00	446.70	21441.60
3	Fuel / Energy charges	Hour	48.00	299.90	14395.20
4	Pump 5 hp ( ele )	Hour	4.00	3.00	12.00
4	Fuel / Energy charges	Hour	4.00	28.00	112.00
5	Water tanker 8000 ltr	Hour	8.00	402.50	3220.00
5	Fuel / Energy charges	Hour	8.00	299.90	2399.20
6	Vibratory Roller 8 tonne	Hour	6.50	1342.20	8724.30
6	Fuel / Energy charges	Hour	6.50	1031.40	6704.10
7	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs: 90495.80

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Dozer	Hour	5.50	236.60	1301.30
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Pump	Hour	4.00	83.30	333.20
5	Crew for Water tanker	Hour	8.00	177.50	1420.00
6	Crew for Roller	Hour	6.50	263.60	1713.40
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour					Rs: 17480.70

labour component/unit qty 21.20  
 Add contractor's profit and overhead charges 13.615% 2.90  
 labour component/unit qty (including contractor's profit) 24.10

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 90495.80
C. Cost of Labour	Rs: 17480.70
D.Add for contractor's profit and overheads on (A+B+C)	Total 107976.50
Total cost for 825.00 cum	Rs: 14701
Rate per cum (A+B+C+D)/825	Rs: 122677.50
	Rs: 148.70

IRR-DAW-5-3

**Providing casing embankment using semi-pervious soil from approved borrow areas in layers of 25 to 30 cm before compaction including cost of all materials, machinery, labour, all other operations such as excavation, sorting out, transportation, spreading soil in layers of specified thickness, breaking clods, sectioning, watering, compacting to density control of not less than 95 percent using Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller as stipulated etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**630 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Angle dozer 90 hp	Hour	4.00	1715.50	6862.00
	Fuel / Energy charges	Hour	4.00	610.50	2442.00
2	Shovel 0.85 cum	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
3	Tipper 5 cum	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Pump 5 hp ( ele )	Hour	3.00	3.00	9.00
	Fuel / Energy charges	Hour	3.00	28.00	84.00
5	Water tanker 8000 ltr	Hour	5.00	402.50	2012.50
	Fuel / Energy charges	Hour	5.00	299.90	1499.50
6	Vibratory Roller 8 tonne	Hour	5.00	1342.20	6711.00
	Fuel / Energy charges	Hour	5.00	1031.40	5157.00
7	Sundries	LS	5.00	30.00	150.00
	Total hire charges of Machinery			Rs:	<b>69452.60</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Dozer	Hour	4.00	236.60	946.40
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	32.00	177.50	5680.00
4	Crew for Pump	Hour	3.00	83.30	249.90
5	Crew for Water tanker	Hour	5.00	177.50	887.50
6	Crew for Roller	Hour	5.00	263.60	1318.00
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
	Total cost of Labour			Rs:	<b>13274.60</b>

labour component/unit qty 21.10  
 Add contractor's profit and overhead charges 13.615% 2.90  
 labour component/unit qty (including contractor's profit) 24.00

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 69452.60
C. Cost of Labour	Rs: 13274.60
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 82727.20
Total cost for 630.00 cum	Rs: 11263.31
Rate per cum	Rs: 93990.51
	Rs: 149.20

IRR-DAW-5-4

**Providing casing embankment using semi-pervious soil available from excavation in layers of 25 to 30 cm before compaction including cost of all materials, machinery, labour, all other operations such as re-excavation, sorting out, transportation, spreading in layers of specified thickness, breaking clods, sectioning, watering, compacting to specified density control of not less than 95 percent using Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller as stipulated etc.,complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**970.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Angle dozer 90 hp	Hour	4.60	1715.50	7891.30
	Fuel / Energy charges	Hour	4.60	610.50	2808.30
2	Shovel 0.85 cum	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
3	Tipper 5 cum	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20
4	Pump 5 hp ( ele )	Hour	4.00	3.00	12.00
	Fuel / Energy charges	Hour	4.00	28.00	112.00
5	Water tanker 8000 ltr	Hour	8.00	402.50	3220.00
	Fuel / Energy charges	Hour	8.00	299.90	2399.20
6	Vibratory Roller 8 tonne	Hour	7.00	1342.20	9395.40
	Fuel / Energy charges	Hour	7.00	1031.40	7219.80
7	Sundries	LS	5.00	30.00	150.00
	Total hire charges of Machinery			Rs:	<b>89679.20</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Dozer	Hour	4.60	236.60	1088.36
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Pump	Hour	4.00	83.30	333.20
5	Crew for Water tanker	Hour	8.00	177.50	1420.00
6	Crew for Roller	Hour	7.00	263.60	1845.20
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour					Rs: 17399.56

labour component/unit qty 17.90

Add contractor's profit and overhead charges 13.615% 2.40

labour component/unit qty (including contractor's profit) 20.30

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 89679.20
C. Cost of Labour	Rs: 17399.56
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 107078.76
Total cost for 970.00 cum	13.615% Rs: 14578.77
Rate per cum (A+B+C+D)/970	Rs: 121657.53
	Rs: 125.40

IRR-DAW-5-4-A

(New Item1 - 2011-12)

**Providing casing embankment** using semi-pervious soil available from excavation in layers of 25 to 30 cm before compaction including cost of all materials, machinery, labour, all other operations such as re-excavation, sorting out, transportation, spreading in layers of specified thickness, breaking clods, sectioning, **watering**, compacting to specified density control of **not less than 90 percent** using 2 Tonne Roller as stipulated etc., complete with initial lead upto 1 km and all lifts.  
(For Maintenance Works)

DATA:

**RATE ANALYSIS**

UNIT :

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
Total cost of Materials					Rs: 0.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Angle dozer 90 hp	Hour	4.60	1715.50	7891.30
	Fuel / Energy charges	Hour	4.60	610.50	2808.30
2	Shovel 0.85 cum	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
3	Tipper 5 cum	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20
4	Pump 5 hp ( ele )	Hour	4.00	3.00	12.00
	Fuel / Energy charges	Hour	4.00	28.00	112.00
5	Water tanker 8000 ltr	Hour	8.00	402.50	3220.00
	Fuel / Energy charges	Hour	8.00	299.90	2399.20
6	Vibratory Roller 8 tonne	Hour	7.00	1342.20	9395.40
	Fuel / Energy charges	Hour	7.00	1031.40	7219.80
7	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery					Rs: 89679.20

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Dozer	Hour	4.60	236.60	1088.36
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Pump	Hour	4.00	83.30	333.20
5	Crew for Water tanker	Hour	8.00	177.50	1420.00
6	Crew for Roller	Hour	7.00	263.60	1845.20
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour					Rs. 17399.56

labour component/unit qty 17.90

Add contractor's profit and overhead charges 13.615% 2.40

labour component/unit qty (including contractor's profit) 20.30

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 89679.20
C. Cost of Labour	Rs: 17399.56
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 107078.76
Total cost for 970.00 cum (A+B+C+D)/970	Rs: 14578.77
Deduct Rate for Proctor's density Control of 95% using 8T roller as per IRR-PMW-3-23	Rs: 121657.53
Add Rate for Proctor's Density control of 90% using 2T Roller as per IRR-PMW-3-24	45.80
Rate per cum	6.20
Rate per cum	85.80

IRR-DAW-5-5

Providing homogeneous embankment using soil from approved borrow

area in layers of 25 to 30 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transportation, spreading soil in layer of specified thickness, breaking clods, sectioning, watering, compacting to density control of not less than

95 percent or as stipulated using Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.

DATA:

**RATE ANALYSIS**

UNIT :

807.00 cum

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials					Rs. 0.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Angle dozer 90 hp	Hour	5.40	1715.50	9263.70
	Fuel / Energy charges	Hour	5.40	610.50	3296.70
2	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
3	Tippers 5.00 cum capacity 5 Nos.	Hour	40.00	446.70	17868.00
	Fuel / Energy charges	Hour	40.00	299.90	11996.00
4	Pump 5 hp ( ele )	Hour	4.00	3.00	12.00
	Fuel / Energy charges	Hour	4.00	28.00	112.00
5	Water tanker 8000 ltr	Hour	8.00	402.50	3220.00
	Fuel / Energy charges	Hour	8.00	299.90	2399.20
6	Vibratory Roller 8 tonne	Hour	6.40	1342.20	8590.08
	Fuel / Energy charges	Hour	6.40	1031.40	6600.96
7	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs. 84053.04

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Dozer	Hour	5.40	236.60	1277.64
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	40.00	177.50	7100.00
4	Crew for Pump	Hour	4.00	83.30	333.20
5	Crew for Water tanker	Hour	8.00	177.50	1420.00
6	Crew for Roller	Hour	6.40	263.60	1687.04
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour					Rs. 16010.68

labour component/unit qty 19.80

Add contractor's profit and overhead charges 13.615% 2.70

labour component/unit qty (including contractor's profit) 22.50

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 84053.04
C. Cost of Labour	Rs: 16010.68
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 100063.72
Total cost for 807.00 cum (A+B+C+D)/807	Rs: 13623.68
Rate per cum	Rs: 113687.40
Rate per cum	Rs: 140.90

IRR-DAW-5-6 Providing embankment adjacent to masonry / concrete structures and filling trial pits using impervious soil from approved borrow areas in layers of 10 to 15 cm and compacting each layer to density control of not less than 95 percent using pneumatic tampers or by vibratory earth rammers including cost of all materials, machinery, labour, picking previous layer, spreading soil in layer, breaking clods, watering etc., complete with initial lead upto 1 km and all lifts.

DATA:

## RATE ANALYSIS

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	UNIT : 80 cum	
				Rate in Rs.	Amount in Rs
1	Use rate of air hose	Hour	16.00 0.00	11.56 0.00	185.00 0.00
	Total cost of Materials			Rs:	<b>185.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Angle dozer 90 hp	Hour	0.15	1715.50	257.33
	Fuel / Energy charges	Hour	0.15	610.50	91.58
2	Shovel 0.85 cum	Hour	0.80	1706.60	1365.28
	Fuel / Energy charges	Hour	0.80	872.70	698.16
3	Tipper 5 cum	Hour	3.00	446.70	1340.10
	Fuel / Energy charges	Hour	3.00	299.90	899.70
4	Air compressor 8.5 cmm ( ele )	Hour	8.00	170.80	1366.40
	Fuel / Energy charges	Hour	8.00	315.20	2521.60
5	Pump 5 hp ( ele )	Hour	0.40	3.00	1.20
	Fuel / Energy charges	Hour	0.40	28.00	11.20
6	Water tanker 8000 ltr	Hour	0.80	402.50	322.00
	Fuel / Energy charges	Hour	0.80	299.90	239.92
7	Pneumatic tampers 2 Nos.	Hour	16.00	20.70	331.20
	Fuel / Energy charges	Hour	16.00	0.00	0.00
	Sundries	LS	1.00	30.00	30.00
	Total hire charges of Machinery			Rs:	<b>9475.66</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Dozer	Hour	0.15	236.60	35.49
2	Crew for Shovel	Hour	0.80	236.60	189.28
3	Crew for Tipper	Hour	3.00	177.50	532.50
4	Crew for Air compressor	Hour	8.00	164.80	1318.40
5	Crew for Pump	Hour	0.40	83.30	33.32
6	Crew for Water tanker	Hour	0.80	177.50	142.00
7	Crew for Pneumatic tamper	Hour	16.00	263.60	4217.60
8	work inspector	Day	1.00	450.00	450.00
9	mazdoor	Day	5.00	350.00	1750.00
	Total cost of Labour			Rs:	<b>8668.59</b>

labour component/unit qty 108.40  
 Add contractor's profit and overhead charges 13.615% 14.80  
 labour component/unit qty (including contractor's profit) **123.20**

**ABSTRACT:**

A. Cost of Materials	Rs: 185.00
B. Hire charges of Machinery	Rs: 9475.66
C. Cost of Labour	Rs: 8668.59
	Rs: 18329.25
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for 80.00 cum	13.615%
Rate per cum (A+B+C+D)/80	Rs: 2495.53
	Rs: 20824.78
	Rs: 260.30

IRR-DAW-5-7

Providing and constructing rockfill embankment with 300 mm down graded stones and quarry spalls from approved source including cost of all materials, machinery, labour, spreading stones and spalls in layers, hand packing, wedging, finishing the surface to required slopes etc., complete with initial lead upto 1 km and all lifts.

DATA:

## RATE ANALYSIS

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	UNIT : 400 cum	
				Rate in Rs.	Amount in Rs
1	Use rate of drill rod 2.5 m long	Rm	387.00	41.69	16135.32
	Reconditioning charges @ 10%				1613.53
2	Use rate of air hose 6 Nos.	Hour	60.00	11.56	693.75
3	Explosive small dia	kg	118.00	70.00	8280.00
4	Electric detonators	Nos	159.00	11.00	1749.00
5	Detonator ordinary	Nos	8.00	7.00	56.00
6	Fuse coil	Rm	200.00	9.00	1800.00
7	Sundries ( waste tyres etc )	LS	10.00	30.00	300.00
	Total cost of Materials			Rs:	<b>30607.60</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Air compressor 8.5cmm( diesel )3 Nos	Hour	30.00	275.60	8268.00
	Fuel / Energy charges	Hour	30.00	892.50	26775.00
2	Jack hammer 6 Nos	Hour	60.00	19.80	1188.00
	Fuel / Energy charges	Hour	60.00	0.00	0.00
3	Angle dozer 90 hp	Hour	4.00	1715.50	6862.00
	Fuel / Energy charges	Hour	4.00	610.50	2442.00
4	Shovel 0.85 cum	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
5	Tipper 5 cum	Hour	24.00	446.70	10720.80
	Fuel / Energy charges	Hour	24.00	299.90	7197.60
Total hire charges of Machinery					Rs: <b>84087.80</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Air compressor	Hour	30.00	210.90	6327.00
2	Crew for Jack hammer	Hour	60.00	329.60	19776.00
3	Crew for Shovel	Hour	8.00	236.60	1892.80
4	Crew for Tipper	Hour	24.00	177.50	4260.00
5	Crew for Dozer	Hour	4.00	236.60	946.40
6	Blaster	Day	1.00	510.00	510.00
7	Helper blaster	Day	1.00	400.00	400.00
8	work inspector	Day	2.00	450.00	900.00
9	Mason Class-II	Day	2.00	400.00	800.00
10	mazdoor	Day	10.00	350.00	3500.00
Total cost of Labour					Rs: <b>39312.20</b>

labour component/unit qty 98.30  
 Add contractor's profit and overhead charges 13.615% 13.40  
 labour component/unit qty (including contractor's profit) **111.70**

**ABSTRACT:**

A. Cost of Materials	Rs: 30607.60
B. Hire charges of Machinery	Rs: 84087.80
C. Cost of Labour	Rs: 39312.20
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: 154007.60
Total cost for 400.00 cum	13.615% Rs: 20968.14
Rate per cum	(A+B+C+D)/400 Rs: <b>174975.74</b>
	Rs: 437.40

IRR-DAW-5-8

**Providing and constructing dry rubble rock-toe** using rubble and stone chips from approved source including cost of all materials, machinery, labour, hand packing rubble and stone chips, finishing top and sides to required slopes etc., complete with initial lead upto 1 km and all lifts.

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	UNIT :	
				Rate in Rs.	Amount in Rs
1	Use rate of drill rod 1.5 m long	Rm	97.00	41.69	4044.25
	Reconditioning charges @ 10%				404.43
2	Use rate of air hose	Hour	15.00	11.56	173.44
3	Explosive small dia	kg	30.00	70.00	2100.00
4	Electric detonator	Nos	40.00	11.00	440.00
5	Detonator ordinary	Nos	2.00	7.00	14.00
6	Fuse coil	Rm	50.00	9.00	450.00
7	Sundries	LS	2.00	30.00	60.00
Total cost of Materials					Rs: <b>7686.12</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Air compressor 8.5 cmm ( diesel )	Hour	7.50	275.60	2067.00
	Fuel / Energy charges	Hour	7.50	892.50	6693.75
2	Jack hammer	Hour	15.00	19.80	297.00
	Fuel / Energy charges	Hour	15.00	0.00	0.00
3	Shovel 0.85 cum	Hour	2.00	1706.60	3413.20
	Fuel / Energy charges	Hour	2.00	872.70	1745.40
4	Tipper 5 cum	Hour	6.00	446.70	2680.20
	Fuel / Energy charges	Hour	6.00	299.90	1799.40
Total hire charges of Machinery					Rs: <b>18695.95</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Air compressor	Hour	7.50	210.90	1581.75
2	Crew for Jack hammer	Hour	15.00	329.60	4944.00
3	Crew for Shovel	Hour	2.00	236.60	473.20
4	Crew for Tipper	Hour	6.00	177.50	1065.00
5	Blaster	Day	0.50	510.00	255.00
6	Helper blaster	Day	1.00	400.00	400.00
7	work inspector	Day	1.00	450.00	450.00
8	Mason Class-II	Day	7.00	400.00	2800.00
9	mazdoor	Day	19.00	350.00	6650.00
Total cost of Labour					Rs: <b>18618.95</b>

labour component/unit qty	186.20
Add contractor's profit and overhead charges	13.615% 25.40
labour component/unit qty (including contractor's profit)	<u><b>211.60</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 7686.12
B. Hire charges of Machinery	Rs: 18695.95
C. Cost of Labour	Rs: 18618.95
	Total Rs: 45001.02
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for Rate per cum	100.00 cum (A+B+C+D)/100
	Rs: 6126.89
	Rs: <u><b>51127.91</b></u>
	Rs: <b>511.30</b>

IRR-DAW-5-9

Providing and **constructing dry rubble rock-toe** with rubble and stone chips from **dump yard (Spoil Bank)** including cost of all materials, machinery, labour, hand packing rubble and stone chips, finishing top and sides to required slopes etc., complete **with initial lead upto 1 km and all lifts.**

**Note:**

Useful rubble and stone chips will be issued at dump yard at the issue rate for usefull rubble / stone chips. Sorting out and breaking charges included in rate analysis.

DATA:

**RATE ANALYSIS**

UNIT :

**100 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Useful rubble ( at dump yard )	cum	100.00	155.00	15500.00
2	Useful stone chips ( at dump yard )	cum	15.00	185.00	2775.00
Total cost of Materials					Rs: <b>18275.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Shovel 0.85 cum	Hour	2.00	1706.60	3413.20
	Fuel / Energy charges	Hour	2.00	872.70	1745.40
2	Tipper 5 cum	Hour	6.00	446.70	2680.20
	Fuel / Energy charges	Hour	6.00	299.90	1799.40
Total hire charges of Machinery					Rs: <b>9638.20</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Shovel	Hour	2.00	236.60	473.20
2	Crew for Tipper	Hour	6.00	177.50	1065.00
3	Mason Class-II	Day	7.00	400.00	2800.00
4	work inspector	Day	1.00	450.00	450.00
6	Stone breaker	Day	2.00	400.00	800.00
7	mazdoor	Day	21.00	350.00	7350.00
Total cost of Labour					Rs: <b>12938.20</b>

labour component/unit qty	129.40
Add contractor's profit and overhead charges	13.615% 17.60
labour component/unit qty (including contractor's profit)	<u><b>147.00</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 18275.00
B. Hire charges of Machinery	Rs: 9638.20
C. Cost of Labour	Rs: 12938.20
	Total Rs: 40851.40
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for Rate per cum	100.00 cum (A+B+C+D)/100
	Rs: 5561.92
	Rs: <u><b>46413.32</b></u>
	Rs: <b>464.10</b>

IRR-DAW-5-9-A  
(New Item 4 -2012-13)

Providing and **constructing Dry rock Pitching for Groynes** using **Un-Coursed rubble stone of size 300 mm thick** and **Un-Coursed rubble stone chips from Quarry to site of work** including cost of all materials, Machinery, Labour charge hand packing Un-Course rubble stone &chips to the designed profile **with all leads and lifts etc**

DATA:

**RATE ANALYSIS**

UNIT :

**100 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Un Coursed Rubble Stones at quarry	cum	100.00	318.00	31800.00
2	Stone Chips at Quarry	cum	15.00	350.00	5250.00
Total cost of Materials					Rs: <b>37050.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Shovel 0.85 cum for loading tipper at the worksite	Hour	2.00	1706.60	3413.20
	Fuel / Energy charges	Hour	2.00	872.70	1745.40
2	Tipper 5 cum	Hour	6.00	446.70	2680.20
	Fuel / Energy charges	Hour	6.00	299.90	1799.40
Total hire charges of Machinery					Rs: <b>9638.20</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Crew for Shovel	Hour	2.00	236.60	473.20
2	Crew for Tipper	Hour	6.00	177.50	1065.00
3	Mason Class-II	Day	7.00	400.00	2800.00
4	work inspector	Day	1.00	450.00	450.00
6	Stone breaker	Day	2.00	400.00	800.00
7	mazdoor	Day	21.00	350.00	7350.00
Total cost of Labour					Rs: <b>12938.20</b>

labour component/unit qty	129.40
Add contractor's profit and overhead charges	13.615% 17.60
labour component/unit qty (including contractor's profit)	<u><b>147.00</b></u>

labour component/unit qty (including contractor's profit)	<b>147.00</b>
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**ABSTRACT:**

A. Cost of Materials	Rs: 37050.00
B. Hire charges of Machinery	Rs: 9638.20
C. Cost of Labour	Rs: 12938.20
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 59626.40
Total cost for	100.00 cum Rate per cum (A+B+C+D)/100
	13.615% Rs: 8118.13 Rs: 67744.53 Rs: 677.40

IRR-DAW-5-10 Providing and laying 30 cm diameter open jointed hume pipes with collars in rock-toe for drainage including cost of all materials, machinery, labour etc., complete with lead upto 1 km and all lifts.

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	100 Rm	
				Rate in Rs.	Amount in Rs
1	Hume pipe 300 mm dia.with collar	Rm	100.00	600.00	60000.00
			0.00	0.00	
	Total cost of Materials				<b>Rs: 60000.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
			0.00	0.00	
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Mason CI- II	Day	2	400.00	800.00
2	mazdoor	Day	6	350.00	2100.00
	Total cost of Labour			Rs:	<b>2900.00</b>

labour component/unit qty	29.00
Add contractor's profit and overhead charges	13.615% 3.90
labour component/unit qty (including contractor's profit)	<b>32.90</b>

**ABSTRACT:**

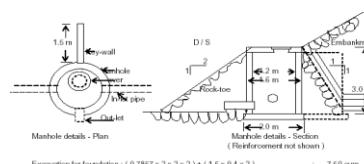
A. Cost of Materials	Rs: 60000.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2900.00
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 62900.00
Total cost for	100.00 Rm Rate per Rm (A+B+C+D)/100
	13.615% Rs: 8563.84 Rs: 71463.84 Rs: 714.60

IRR\_DAW-6

**FILTER & PITCHING WORKS :**

IRR-DAW-6-1 Providing and constructing 1.20 m internal diameter and average 3 m height RCC manhole with 60 cm dia. top cover in M-15 grade cement concrete using 20 mm down graded, clean, hard coarse aggregate, 20 cm thick for bed / sides / top slab / 1.5 m long cut-off wall and 7.5 cm thick for cover including providing 12 mm dia reinforcement bars at 30 cm c / c bothways for bed / sides / cut-off wall / top slab / rungs and 8 mm dia bars at 15 cm c / c bothways for cover, excavation for foundation, providing 30 cm dia hume pipe outlet, cost of all materials, machinery, labour, formwork, scaffolding, batching, mixing, laying, vibrating, finishing, curing etc., complete with lead upto 1 km and all lifts.

(Cement content : 300 kg/cum , CA : 0.80 cum, Blending Ratioof CA -- 65:35,  
FA : 0.44 cum, superplasticizer (0.4% by wt. of cement)



DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	1 Each	
				Rate in Rs.	Amount in Rs
1	Cement	kg	1331.70	5.35	7124.60
	Cement for incidentals @ 3 kg / cum	kg	13.32	5.35	71.25
2	Coarse aggregate 20 to 10 mm	cum	2.31	1225.00	2827.64
	Coarse aggregate 10 to 4.75 mm	cum	1.24	900.00	1118.63
3	Fine aggregate (Un-Screened )	cum	1.95	95.00	185.55
4	Super plasticiser	kg	23.65	55.00	1300.51
5	Reinforcement steel with 5 % wastage	kg	163.70	34.00	5565.63
6	Binding wire	kg	4.00	60.00	240.00
7	Hume pipe 300 mm dia	Rm	1.00	600.00	600.00
8	Use rate of shuttering	sqm	36.00	216.75	7803.00
9	Scaffolding of shuttering @ 5%	LS	2.00	30.00	390.15
10	Sundries	LS			60.00
	Total cost of Materials			Rs:	<b>27286.95</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Concrete mixer 300 / 200 ( ele )	Hour	4.00	51.70	206.80
	Fuel / Energy charges	Hour		28.00	112.00
2	Needle vibrator 40 mm dia ( ele )	Hour	4.00	8.00	32.00
	Fuel / Energy charges	Hour		5.60	22.40
3	Pump 5 hp ( ele )	Hour	0.50	3.00	1.50
	Fuel / Energy charges	Hour		28.00	14.00
4	Sundries	LS	1.00	30.00	30.00
Total hire charges of Machinery					Rs: <b>418.70</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Mason CI- II	Day	1.00	400.00	400.00
2	Bar bender	Day	1.00	555.00	555.00
3	work inspector	Day	1.00	450.00	450.00
4	mazdoor	Day	2.00	350.00	700.00
	for excavation for foundation	Day	1.00	350.00	350.00
	for bar bending	Day	5.00	350.00	1750.00
	for concreting	Day	2.00	350.00	700.00
	for excavation for foundation	Day	4.00	350.00	1400.00
	for concreting	Day	1.00	350.00	350.00
	for curing	sqm	36.00	88.50	3186.00
Total cost of Labour					Rs: <b>9841.00</b>

labour component/unit qty 9841.00

Add contractor's profit and overhead charges 13.615% 1339.90

labour component/unit qty (including contractor's profit) **11180.90****ABSTRACT:**

A. Cost of Materials	Rs: 27286.95
B. Hire charges of Machinery	Rs: 418.70
C. Cost of Labour	Rs: 9841.00
	Total Rs: 37546.65
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Lead Charges for 1 Km for FA	1.95 cum @ 31.5 Rs./Cum 61.52454
Lead Charges for 1 Km for CA	3.55 cum @ 30.4 Rs./Cum 107.96
Lead Charges for 1Km for Steel (including Loading and Unloading Charges)	0.16 tonne @ 168.6 Rs./Tonne 27.598977
Total cost for	1.00 Each 42855.71
Rate per Each	(A+B+C+D)/1.00 Rs: 42855.70

IRR-DAW-6-2

Providing and **constructing longitudinal and cross graded filter drains** using sand and 80-20 mm and 20 mm down graded aggregates satisfying specified filter criteria in layers as per specifications including cost of all materials, machinery, labour, laying to required slopes, compaction etc. complete **with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	UNIT : 100 cum	
				Rate in Rs.	Amount in Rs
1	Fine aggregate (Un-Screened )	cum	47.50	95.00	4512.50
2	Coarse aggregate 80-40 mm	cum	17.865	650.00	11612.25
3	Coarse aggregate 40-20 mm	cum	1.99	1175.00	2332.38
4	Coarse aggregate 20-10 mm	cum	24.49	1225.00	29997.19
5	Coarse aggregate 10 mm down	cum	8.16	900.00	7346.25
Total cost of Materials					Rs: <b>55800.56</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery					Rs: <b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	38.00	350.00	13300.00
Total cost of Labour					Rs: <b>13750.00</b>

labour component/unit qty 137.50

Add contractor's profit and overhead charges 13.615% 18.70

labour component/unit qty (including contractor's profit) **156.20**

**ABSTRACT:**

A. Cost of Materials	Rs: 55800.56
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 13750.00
	Total Rs: 69550.56
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 9469.31
Total cost for 100.00 cum	Rs: 79019.87
Rate per cum	(A+B+C+D)/100
	Rs: 790.20

IRR-DAW-6-3

Providing and **constructing 1.40 m thick vertical or inclined graded filter media** consisting of 20 cm thick sand layers, 25 cm thick 20 mm down coarse aggregate layers and 50 cm thick 80-20 mm coarse aggregate layer using approved materials satisfying specified filter criteria as per specifications including cost of all materials, machinery, labour, laying to required slope, compaction etc., **complete with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Fine aggregate (Un-Screened )	cum	28.60	95.00	2717.00
2	Coarse aggregate 80-40 mm	cum	32.13	650.00	20884.50
3	Coarse aggregate 40-20 mm	cum	3.57	1175.00	4194.75
4	Coarse aggregate 20-10 mm	cum	28.13	1225.00	34453.13
5	Coarse aggregate 10 mm down	cum	8.93	900.00	8032.50
	Total cost of Materials				Rs: 70281.88

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
	Total hire charges of Machinery				Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	38.00	350.00	13300.00
	Total cost of Labour				Rs: 13750.00

labour component/unit qty 137.50  
 Add contractor's profit and overhead charges 13.615% 18.70  
 labour component/unit qty (including contractor's profit) 156.20

**ABSTRACT:**

A. Cost of Materials	Rs: 70281.88
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 13750.00
	Total Rs: 84031.88
D.Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 11440.94
Total cost for 100.00 cum	Rs: 95472.82
Rate per cum	(A+B+C+D)/100
	Rs: 954.70

IRR-DAW-6-4

Providing and **constructing graded filter media below and behind rock-toe** consisting of 20 cm thick sand, 25 cm thick 20 - 4.75 mm and 40 cm thick 80 - 20 mm size graded coarse aggregates satisfying filter criteria as per specifications including cost of all materials, labour, machinery, laying to required slope, compaction etc., complete **with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Fine aggregate (Un-Screened )	cum	23.55	95.00	2237.25
2	Coarse aggregate 80-40 mm	cum	42.39	650.00	27553.50
3	Coarse aggregate 40-20 mm	cum	4.71	1175.00	5534.25
4	Coarse aggregate 20-10 mm	cum	22.05	1225.00	27011.25
5	Coarse aggregate 10 mm down	cum	7.35	900.00	6615.00
	Total cost of Materials				Rs: 68951.25

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
	Total hire charges of Machinery				Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	34.00	350.00	11900.00
	Total cost of Labour				Rs: 12350.00

labour component/unit qty 123.50  
 Add contractor's profit and overhead charges 13.615% 16.80  
 labour component/unit qty (including contractor's profit) 140.30

**ABSTRACT:**

A. Cost of Materials	Rs: 68951.25
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 12350.00
	Total Rs: 81301.25
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 13.615% 11069.17
Total cost for Rate per cum (A+B+C+D)/100	Rs: 92370.42
	Rs: 923.70

IRR-DAW-6-4-A  
(New Item2- 2011-12)  
Providing and **constructing graded filter media below and behind rock-toe** consisting of 30 cm thick 80 - 20 mm size graded coarse aggregates satisfying filter criteria as per specifications including cost of all materials, labour, machinery, laying to required slope, compaction etc., complete **with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	100 cum Amount in Rs
1	Coarse aggregate 80-40 mm	cum	35.00	650.00	22750.00
2	Coarse aggregate 40-20 mm	cum	55.00	1175.00	64625.00
3	Coarse aggregate 20-10 mm	cum	5.00	1225.00	6125.00
4	Coarse aggregate 10 mm down	cum	5.00	900.00	4500.00
	Total cost of Materials				Rs: 98000.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
	Total hire charges of Machinery				Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	12.00	350.00	4200.00
	Total cost of Labour				Rs: 4650.00
	labour component/unit qty		46.50		
	Add contractor's profit and overhead charges		13.615% 6.30		
	labour component/unit qty (including contractor's profit)		52.80		

**ABSTRACT:**

A. Cost of Materials	Rs: 98000.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 4650.00
	Total Rs: 102650.00
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 13.615% 13975.8
Total cost for Rate per cum (A+B+C+D)/100	Rs: 116625.80
	Rs: 1166.30

IRR-DAW-6-5  
Providing and **laying filter media consisting of 2 layers of 250 gsm poly-propylene non-woven filter fabric and 400 mm thick 20 mm down graded coarse aggregate for vertical / inclined and horizontal filter blanket for embankment including cost of all materials, machinery, labour etc., complete with lead upto 50 m for aggregate and all leads for fabric and all lifts.**



DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	100 sqm Amount in Rs
1	PP filter fabric 250 gsm	sqm	220.00	150.00	33000.00
2	20 - 10 mm CA @ 75 %	cum	30.00	1225.00	36750.00
	10 mm down CA @ 25 %	cum	10.00	900.00	9000.00
	Total cost of Materials				Rs: 78750.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
	Total hire charges of Machinery				Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	14.00	350.00	4900.00
	Total cost of Labour				Rs: 5350.00

labour component/unit qty	53.50
Add contractor's profit and overhead charges	13.615% 7.30
labour component/unit qty (including contractor's profit)	<b>60.80</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 78750.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 5350.00
	Rs: 84100.00
Total	Rs: 11450.22
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	100.00 sqm
Rate per	sqm
(A+B+C+D)/100	Rs: 95550.22
	Rs: 955.50

IRR-DAW-6-6

Providing and **constructing 45 cm thick chimney filter** using clean approved sand satisfying filter criteria including cost of all materials, machinery, labour, compacting etc., complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	100 cum	
				Rate in Rs.	Amount in Rs
1	Sand (Un-Screened)	cum	105.00	95.00	9975.00
			0.00	0.00	
Total cost of Materials				Rs:	<b>9975.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs	
1	NIL		0.00	0.00	0.00	0.00
			0.00	0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>	

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs	
1	work inspector	Day	1.00	450.00	450.00	
2	mazdoor	Day	30.00	350.00	10500.00	
					Rs:	<b>10950.00</b>
Total cost of Labour				Rs:		
labour component/unit qty	109.50					
Add contractor's profit and overhead charges	13.615% 14.90					
labour component/unit qty (including contractor's profit)	<b>124.40</b>					

**ABSTRACT:**

A. Cost of Materials	Rs: 9975.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 10950.00
	Rs: 20925.00
Total	Rs: 2848.94
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	100.00 cum
Rate per	cum
(A+B+C+D)/100	Rs: 23773.94
	Rs: 237.70

IRR-DAW-6-7

Providing and **constructing 90 cm thick transition cum filter media behind rockfill** using approved sand and 80-20 mm and 20 mm down graded aggregates satisfying the filter criteria in layers of 30 cm thickness each as per specifications including cost of all materials, machinery, labour, laying each layer to required slope, compaction etc., complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	100 cum	
				Rate in Rs.	Amount in Rs
1	Sand (Un-Screened )	cum	34.00	95.00	3230.00
2	Coarse aggregate 80-40 mm	cum	30.60	650.00	19890.00
3	Coarse aggregate 40-20 mm	cum	3.40	1175.00	3995.00
4	Coarse aggregate 20-10 mm	cum	25.50	1225.00	31237.50
5	Coarse aggregate 10 mm down	cum	8.50	900.00	7650.00
				Rs:	<b>66002.50</b>
Total cost of Materials				Rs:	

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs	
1	NIL		0.00	0.00	0.00	0.00
			0.00	0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>	

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs	
1	work inspector	Day	1.00	450.00	450.00	
2	mazdoor	Day	40.00	350.00	14000.00	
					Rs:	<b>14450.00</b>
Total cost of Labour				Rs:		
labour component/unit qty	144.50					
Add contractor's profit and overhead charges	13.615% 19.70					
labour component/unit qty (including contractor's profit)	<b>164.20</b>					

**ABSTRACT:**

A. Cost of Materials	Rs: 66002.50
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 14450.00
	Rs: 80452.50
Total	13.615%
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Total	10953.61

Total cost for Rate per cum.	100.00 cum. (A+B+C+D)/100	Rs: <b>91406.11</b> Rs: <b>914.10</b>
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IRR-DAW-6-8  
**Providing and constructing 60 cm thick hand packed rough stone revetment with 65 to 75 cm long through stones at 1.50 m c / c over a backing of 45 cm thick graded filter media consisting of sand, 10 mm and 40 mm size approved graded aggregates laid in layers of 15 cm thick each including cost of all materials, machinery, labour, laying to required slopes, wedging with chips, finishing etc. complete with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	UNIT : 100 sqm	
				Rate in Rs.	Amount in Rs
1	Sand (Un-Screened )	cum	15.30	95.00	1453.50
2	Coarse aggregate 10 mm down	cum	15.30	900.00	13770.00
3	Coarse aggregate 40-20 mm	cum	15.30	1175.00	17977.50
4	Stone chips	cum	9.00	350.00	3150.00
5	Rough stones ( rubble ) 30 to 45 cm long	cum	57.60	318.00	18316.80
6	Through stones 65 to 75 cm long	Nos	44.00	59.00	2596.00
Total cost of Materials				Rs:	<b>57263.80</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery			0.00	Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class-II	Day	10.00	400.00	4000.00
3	mazdoor	Day	33.00	350.00	11550.00
Total cost of Labour				Rs:	<b>16000.00</b>

labour component/unit qty	160.00
Add contractor's profit and overhead charges	13.615% 21.80
labour component/unit qty (including contractor's profit)	<b>181.80</b>

**ABSTRACT:**

A. Cost of Materials	Rs: <b>57263.80</b>
B. Hire charges of Machinery	Rs: <b>0.00</b>
C. Cost of Labour	Rs: <b>16000.00</b>
D.Add for contractor's profit and overheads on (A+B+C)	Total Rs: <b>73263.80</b>
Total cost for	13.615%
Rate per sqm	<b>83238.67</b>
	Rs: <b>832.40</b>

IRR-DAW-6-9

Providing and constructing 60 cm thick hand packed rough stone revetment with 65 to 75 cm long through stones at 1.50 m c / c over a backing of 60 cm thick graded filter media consisting of sand, 10 mm and 40 mm size approved graded aggregates laid in layers of 20 cm thick each including cost of all materials, machinery, labour, laying to required slopes, wedging with chips, finishing etc. complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	UNIT : 100 sqm	
				Rate in Rs.	Amount in Rs
1	Sand (Un-Screened )	cum	20.40	95.00	1938.00
2	Coarse aggregate 10 mm down	cum	20.40	900.00	18360.00
3	Coarse aggregate 40-20 mm	cum	20.40	1175.00	23970.00
4	Stone chips	cum	9.00	350.00	3150.00
5	Rough stones ( rubble ) 30 to 45 cm long	cum	57.60	318.00	18316.80
6	Through stones 65 to 75 cm long	Nos	44.00	59.00	2596.00
Total cost of Materials				Rs:	<b>68330.80</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery			0.00	Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class-II	Day	10.00	400.00	4000.00
3	mazdoor	Day	39.00	350.00	13650.00
Total cost of Labour					Rs. 18100.00

labour component/unit qty 181.00  
 Add contractor's profit and overhead charges 13.615% 24.60  
 labour component/unit qty (including contractor's profit) **205.60**

**ABSTRACT:**

A. Cost of Materials	Rs: 68330.80
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 18100.00
D.Add for contractor's profit and overheads on (A+B+C)	Rs. 86430.80
Total cost for 100.00 sqm	13.615%
Rate per sqm	(A+B+C+D)/100
	Rs: 98198.35
	Rs: 982.00

IRR-DAW-6-10 Providing and **constructing 60 cm thick hand packed rough stone riprap over a backing of 45 cm thick graded filter media** consisting of sand, 10 mm and 40 mm size graded approved aggregates laid in layers of 15 cm thick each including cost of all materials, machinery, labour, laying to required slopes, wedging with stone chips etc., complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Sand (Un-Screened )	cum	15.30	95.00	1453.50
2	Coarse aggregate 10 mm down	cum	15.30	900.00	13770.00
3	Coarse aggregate 40-20 mm	cum	15.30	1175.00	17977.50
4	Stone chips	cum	9.00	350.00	3150.00
5	Rough stones ( rubble )	cum	60.00	318.00	19080.00
Total cost of Materials					Rs: 55431.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery					Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class-II	Day	5.00	400.00	2000.00
3	mazdoor	Day	28.00	350.00	9800.00
Total cost of Labour					Rs: 12250.00

labour component/unit qty 122.50  
 Add contractor's profit and overhead charges 13.615% 16.70  
 labour component/unit qty (including contractor's profit) **139.20**

**ABSTRACT:**

A. Cost of Materials	Rs: 55431.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 12250.00
D.Add for contractor's profit and overheads on (A+B+C)	Rs. 67681.00
Total cost for 100.00 sqm.	13.615%
Rate per sqm.	(A+B+C+D)/100
	Rs: 76895.77
	Rs: 769.00

IRR-DAW-6-11 Providing and **constructing 75 cm thick hand packed rough stone riprap over a backing of 45 cm thick graded filter media** consisting of sand, 10 mm and 40 mm size graded approved aggregates laid in layers of 15 cm thick each including cost of all materials, machinery, labour, laying to required slopes, wedging with stone chips, etc., complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Sand (Un-Screened )	cum	15.30	95.00	1453.50
2	Coarse aggregate 10 mm down	cum	15.30	900.00	13770.00
3	Coarse aggregate 40-20 mm	cum	15.30	1175.00	17977.50
4	Stone chips	cum	11.00	350.00	3850.00
5	Rough stones ( rubble )	cum	75.00	318.00	23850.00
Total cost of Materials					Rs: 60901.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery					Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class-II	Day	6.00	400.00	2400.00
3	mazdoor	Day	30.00	350.00	10500.00
Total cost of Labour					Rs: 13350.00

labour component/unit qty 133.50  
 Add contractor's profit and overhead charges 13.615% 18.20  
 labour component/unit qty (including contractor's profit) 151.70

**ABSTRACT:**

A. Cost of Materials	Rs: 60901.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 13350.00
Total	Rs: 74251.00
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for 100.00 sqm	10109.27
Rate per sqm	Rs: 84360.27
(A+B+C+D)/100	Rs: 843.60

IRR-DAW-6-12

Providing and **constructing 90 cm thick hand packed rough stone riprap over a backing of 45 cm thick graded filter media** consisting of sand, 10 mm and 40 mm size graded approved aggregates laid in layers of 15 cm thick each including cost of all materials, machinery, labour, laying to required slopes, wedging with stone chips etc., **complete with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Sand (Un-Screened )	cum	15.30	95.00	1453.50
2	Coarse aggregate 10 mm down	cum	15.30	900.00	13770.00
3	Coarse aggregate 40-20 mm	cum	15.30	1175.00	17977.50
4	Stone chips	cum	13.50	350.00	4725.00
5	Rough stones ( rubble )	cum	90.00	318.00	28620.00
Total cost of Materials					Rs: 66546.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery					Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class-II	Day	8.00	400.00	3200.00
3	mazdoor	Day	34.00	350.00	11900.00
Total cost of Labour					Rs: 15550.00

labour component/unit qty 155.50  
 Add contractor's profit and overhead charges 13.615% 21.20  
 labour component/unit qty (including contractor's profit) 176.70

**ABSTRACT:**

A. Cost of Materials	Rs: 66546.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 15550.00
Total	Rs: 82096.00
D.Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for 100.00 sqm	11177.37
Rate per sqm	Rs: 93273.37
(A+B+C+D)/100	Rs: 932.70

IRR-DAW-6-13

Providing and **laying Hariyala or other approved quality turfing sods** for the slopes of earthen embankments over 20 mm thick sand backing including cost of all materials, machinery, labour including preparing surface, spreading sand, watering for 15 days etc., complete with **initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Sand for filling	cum	2.00	95.00	190.00
2	Hariyala turfing sods	sqm	100.00	28.00	2800.00
Total cost of Materials					Rs: 2990.00

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery					Rs: 0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	Cartman with double bullock cart	Day	2.00	465.00	930.00
2	mazdoor	Day	15.00	350.00	5250.00
Total cost of Labour					Rs: <b>6180.00</b>

labour component/unit qty 61.80  
 Add contractor's profit and overhead charges 13.615% 8.40  
 labour component/unit qty (including contractor's profit) **70.20**

**ABSTRACT:**

A. Cost of Materials	Rs: 2990.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 6180.00
D.Add for contractor's profit and overheads on (A+B+C)	Rs: 9170.00
Lead Charges for 1 Km for FA 2.00 cum @ 13.615%	31.5 Rs./Cum
Total cost for 100.00 sqm.	Rs. 1248.5
Rate per sqm. (A+B+C+D)/100	Rs: <b>10481.50</b>
	Rs: <b>104.80</b>

## Chapter - II

## TUNNEL AND ALLIED WORKS - Standard Data

(WLL BE WITH E-N-C & TO INCORPORATE CHANGES YEARLY/ AS NEEDED)  
FOR THE YEAR :2016-17

**Index- code****TUNNEL AND ALLIED WORKS - DATA RATES**

IRR-TAW

**Directions to add Seigniorage Charges and Additional Lead Charges****Seigniorage Charges:**

1. The unit rate for work item in the Standard Data is **exclusive of Seigniorage Charges** wherever applicable.
2. The appropriate Seigniorage Charges for relevant materials are to be added to the Unit rate of work item while preparing the estimate. (i.e., to the data itself)
3. The Provision towards Contractor's Profit and Overhead charges **should not be operated on** the Seigniorage Charges while adding Seigniorage Charges to the data in the estimate

**Additional Lead and Lift Charges:**

1. Unless otherwise specified the basic rates are inclusive of all lifts.
2. For concrete, masonry and reinforcement items **wherever** initial lead of 1km is considered in the basic rate, the additional lead charges are to be added as follows:

Additional lead charges for Steel, sand, coarse aggregate, stones and stone chips shall be worked out for total lead involved and 1 km lead charges included in basic rate shall be deducted from total lead charges. No loading and unloading charges shall be allowed for any item.

In case of Cement and Steel, Loading and unloading charges are already added in the work item while arriving the unit rate and hence should not be added again

Example:

Total lead for sand from approved sand quarry :	15 Km
Initial lead included in the basic rate in the SR :	1 Km
Additional lead charges : Lead charges for 5 km	Rs. 84.00
Lead charges for next 10 km	Rs. 126
Total lead charges for 15 km /cum	Rs. 210.00
Less 1 km initial lead charges /cum	Rs. 31.50 (-)
Net additional lead charges / cum	Rs. 178.50

3. The Leads for Steel shall be from the nearest market place to the Project area

4. For earth/rockfill embankments **wherever** initial lead of 1km is considered in the basic rate, the additional lead charges are to be added as follows:

Additional lead charges for Earth, Murrum etc., shall be worked out for total lead involved and 1 km lead charges included in basic rate shall be deducted from total lead charges. No loading and unloading charges shall be allowed for any item. (same as above)

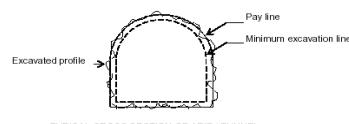
Example:

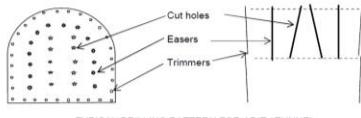
Total lead for earth from approved borrow area :	15 Km
Initial lead included in the basic rate in the SR :	1 Km
Additional lead charges : Lead charges for 5 km	Rs. 84.00
Lead charges for next 10 km	Rs. 126
Total lead charges for 15 km /cum	Rs. 210.00
Less 1 km initial lead charges /cum	Rs. 31.50 (-)
Net additional lead charges / cum	Rs. 178.50

5. The initial lead up to 50 m as mentioned in some standard data items is meant for manual lead within the working area. For conveyance of materials, the lead required from quarry/Borrow area/ Dump Area to worksite shall be added to the data without deducting the 50 m initial lead charges

**TAW -Work Items****IRR-TAW-1 EXCAVATION :**

**IRR-TAW-1-1 Excavation for adit by tunnelling methods in all types of rock** including cost of all materials, machinery, labour, scaling excavated surface, ventilation, lighting, drainage, removing and hauling the excavated muck outside adit upto specified dump area and all other ancillary operations etc., complete **with initial lead upto 1km and all lifts.**





TYPICAL DRILLING PATTERN FOR ADIT / TUNNEL

DATA:

**RATE ANALYSIS**

UNIT :

**38.50 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Small dia explosive	kg	40.00	70.00	2800.00
2	Delay detonators	Nos	54.00	20.00	1080.00
3	Electric detonators	Nos	5.00	11.00	55.00
4	Detonating fuse coil	Rm	50.00	9.00	450.00
5	Use rate of drill rod 2.5 m long Reconditioning charges @ 10%	Rm	119.00	41.69	4961.51
6	Use rate of air hose	Hour	20.00	5.78	115.63
7	Use rate of water hose	Hour	20.00	5.78	115.63
8	Sundries( paint / template etc )	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>10133.91</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling jumbo	Hour	8.00	368.40	2947.20
	Fuel / Energy charges	Hour	8.00	42.80	342.40
2	Air compressor 15 cmm ( ele )	Hour	5.00	138.80	694.00
	Fuel / Energy charges	Hour	5.00	700.50	3502.50
3	Jack hammer ( 4 x 5 hrs )	Hour	20.00	19.80	396.00
	Fuel / Energy charges	Hour	20.00	0.00	0.00
4	Pusher leg	Hour	20.00	12.70	254.00
	Fuel / Energy charges	Hour	20.00	0.00	0.00
5	Convey mucker	Hour	6.50	822.80	5348.20
	Fuel / Energy charges	Hour	6.50	195.00	1267.50
6	Dumper ( 1 x 6.5 hrs )	Hour	6.50	580.70	3774.55
	Fuel / Energy charges	Hour	6.50	399.90	2599.35
7	Pump 10 hp ( ele )	Hour	5.00	6.70	33.50
	Fuel / Energy charges	Hour	5.00	56.00	280.00
8	Ventilation fans 20 hp	Hour	1.00	11.50	11.50
	Fuel / Energy charges	Hour	1.00	112.10	112.10
9	Sundries(explosive van / magazine )	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>21622.80</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling jumbo	Hour	8.00	175.80	1406.40
2	Crew for Air compressor	Hour	5.00	175.80	879.00
3	Crew for Jack hammer	Hour	20.00	329.60	6592.00
4	Crew for Convey mucker	Hour	6.50	175.80	1142.70
5	Crew for Dumper	Hour	6.50	227.10	1476.15
6	Crew for Pump	Hour	5.00	83.30	416.50
7	Crew for ventilation fans	Hour	1.00	28.70	28.70
8	Surveyor	Day	0.50	645.00	322.50
9	Foreman	Day	1.00	510.00	510.00
10	Fitter / Mechanic	Day	2.00	475.00	950.00
11	Blaster ( Licensed )	Day	1.00	510.00	510.00
12	Helper blasting	Day	2.00	400.00	800.00
13	Hammerman	Day	2.00	400.00	800.00
14	work inspector 1 in each shift	Day	3.00	450.00	1350.00

15	Khalasi for mucking shift 4 Nos	Day	4.00	445.00	1780.00
16	mazdoor for mucking shift 4 Nos for other 2 shifts 1 No each shift for cleaning & miscellaneous	Day	4.00	350.00	1400.00
		Day	2.00	350.00	700.00
		Day	2.00	350.00	700.00
Total cost of Labour				Rs:	<b>21763.95</b>

labour component/unit qty 565.30  
 Add contractor's profit and overhead charges 13.615% 77.00  
 labour component/unit qty (including contractor's profit) **642.30**

**ABSTRACT:**

A. Cost of Materials	Rs: 10133.91
B. Hire charges of Machinery	Rs: 21622.80
C. Cost of Labour	Rs: <u>21763.95</u>
	Total Rs: <u>53520.66</u>
Add for Air and Water line @ 1.00%	Rs: 535.21
Add for Ventilation @ 4.50%	Rs: 2408.43
Add for Lighting @ 1.60%	Rs: 856.33
Add for Ele sub-station / Demand charges @ 2.50%	Rs: <u>1338.02</u>
	Total Rs: <u>58658.64</u>
D.Add for contractor's profit and overheads on (A+B+C+other percentages) 13.615%	Rs: 7986.37
Total cost for 38.50 cum	Rs: <b><u>66645.01</u></b>
<b>Rate per cum</b> (A+B+C+D)/38.50	Rs: <b><u>1731.00</u></b>

**IRR-TAW-1-2 Excavation for vertical / inclined shaft in all types of soft / hard rock** including cost of all materials, machinery, labour, shoring, strutting, scaling excavated surface, ventilation, lighting, drainage, removing and hauling excavated muck outside shaft upto specified dump area and all other ancillary operations etc., complete with initial lead upto 1 km and all lifts.

**DATA****RATE ANALYSIS****UNIT :****30.00 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Small dia explosive	kg	32.00	70.00	2240.00
2	Electric detonator	Nos	65.00	11.00	715.00
3	Detonating fuse coil	Rm	50.00	9.00	450.00
4	Use rate of drill rod 1.6 m long	Rm	95.00	26.85	2551.07
5	Reconditioning charges @ 10%				255.11
6	Use rate of air hose	Hour	18.00	23.13	416.25
7	Use rate of water hose	Hour	16.00	23.13	370.00
8	Use rate of rail track	Shift	3.00	127.46	382.39
9	Use rate of mucking bucket	Hour	24.00	21.30	511.25
10	Sundries( paint / template etc )	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>7951.06</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor 15 cmm ( ele )	Hour	4.50	138.80	624.60
	Fuel / Energy charges	Hour	4.50	700.50	3152.25
2	Jack hammer ( 4 x 4 hrs )	Hour	16.00	19.80	316.80
	Fuel / Energy charges	Hour	16.00	0.00	0.00
3	Pump 10 hp ( ele )	Hour	4.00	6.70	26.80
	Fuel / Energy charges	Hour	4.00	56.00	224.00
4	Pump 20 hp electric	Hour	2.00	12.30	24.60
	Fuel / Energy charges	Hour	2.00	112.10	224.20
5	Winch 35 hp electric	Hour	28.00	129.40	3623.20
	Fuel / Energy charges	Hour	28.00	137.30	3844.40
6	Tipping tub 1.5 cum	Hour	24.00	64.20	1540.80
	Fuel / Energy charges	Hour	24.00	0.00	0.00
7	Sundries(explosive van / magazine )	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>13661.65</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Air compressor	Hour	4.50	175.80	791.10
2	Crew for Jack hammer	Hour	16.00	329.60	5273.60

3	Crew for Pump 10 hp	Hour	4.00	83.30	333.20
4	Crew for Pump 20 hp	Hour	2.00	83.30	166.60
5	Crew for Winch	Hour	28.00	263.60	7380.80
6	Surveyor	Day	0.50	645.00	322.50
7	Foreman	Day	4.00	510.00	2040.00
8	Fitter / Mechanic	Day	2.00	475.00	950.00
9	Blaster ( Licensed )	Day	1.00	510.00	510.00
10	Helper blasting	Day	2.00	400.00	800.00
11	Hammerman 1 No. in each shift	Day	3.00	400.00	1200.00
12	work inspector 1 in each shift	Day	4.00	450.00	1800.00
13	Khalasi for mucking 2 Nos in each shift	Day	6.00	445.00	2670.00
14	mazdoor for mucking 8 Nos in each shift	Day	24.00	350.00	8400.00
	for other 2 shifts 1 No / shift	Day	2.00	350.00	700.00
	for cleaning & miscellaneous	Day	2.00	350.00	700.00
<b>Total cost of Labour</b>				<b>Rs: 34037.80</b>	

labour component/unit qty 1134.60

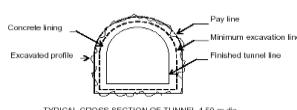
Add contractor's profit and overhead charges 13.615% 154.50

labour component/unit qty (including contractor's profit) **1289.10****ABSTRACT:**

A. Cost of Materials	Rs: 7951.06
B. Hire charges of Machinery	Rs: 13661.65
C. Cost of Labour	Rs: 34037.80
	Total Rs: 55650.51
Add for Air and Water line @ 1.00%	Rs: 556.51
Add for Ventilation @ 4.50%	Rs: 2504.27
Add for Lighting @ 1.60%	Rs: 890.41
Add for Ele sub-station / Demand charges @ 2.50%	Rs: 1391.26
	Total Rs: 60992.96
D.Add for contractor's profit and overheads on (A+B+C+other percentages) 13.615%	Rs: 8304.19
Total cost for 30.00 cum	Rs: 69297.15
<b>Rate per cum (A+B+C+D)/30.00</b>	<b>Rs: 2309.90</b>

**IRR-TAW-1-3 Excavation for tunnel by tunnelling methods in rock not requiring supports** including cost of all materials, machinery, labour, scaling excavated surface, removing under-cuts, ventilation, lighting, drainage, removing and hauling the excavated muck outside tunnel upto specified dump area and all other ancillary operations etc., complete **with initial lead upto 1 km and all lifts.**

DATA: Size of tunnel assumed ( finished section )	:	4.50 m dia
Shape of tunnel assumed for excavation	:	D - shape
Height of tunnel assumed ( finished section )	:	4.50 m
Length of tunnel assumed	:	1000 m
Thickness of CC lining	:	0.30 m
Pay-line margin assumed	:	0.20 m
Diameter of tunnel upto pay line for excavation	:	5.50 m
Distance of dump yard from face	:within	500 m
Haulage of excavated muck	:	By dumpers



DATA: **RATE ANALYSIS** UNIT : **48.60 cum**

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Small dia explosive	kg	54.00	70.00	3780.00
2	Delay detonators	Nos	68.00	20.00	1360.00
3	Electric detonators	Nos	10.00	11.00	110.00
4	Detonating fuse coil	Rm	50.00	9.00	450.00

5	Use rate of drill rod 2.5 m long Reconditioning charges @ 10%	Rm	150.00	41.69	6254.00 625.40
6	Use rate of air hose	Hour	24.00	5.78	138.75
7	Use rate of water hose	Hour	24.00	5.78	138.75
8	Sundries( paint / template etc )	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>12916.90</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling jumbo	Hour	10.00	368.40	3684.00
	Fuel / Energy charges	Hour	10.00	42.80	428.00
2	Air compressor 15 cmm ( ele )	Hour	6.50	138.80	902.20
	Fuel / Energy charges	Hour	6.50	700.50	4553.25
3	Jack hammer ( 4 x 6.5 hrs )	Hour	26.00	19.80	514.80
	Fuel / Energy charges	Hour	26.00	0.00	0.00
4	Pusher leg	Hour	26.00	12.70	330.20
	Fuel / Energy charges	Hour	26.00	0.00	0.00
5	Convey mucker	Hour	6.00	822.80	4936.80
	Fuel / Energy charges	Hour	6.00	195.00	1170.00
6	Dumper ( 2 x 6 hrs )	Hour	12.00	580.70	6968.40
	Fuel / Energy charges	Hour	12.00	399.90	4798.80
7	Pump 10 hp ( ele )	Hour	6.50	6.70	43.55
	Fuel / Energy charges	Hour	6.50	56.00	364.00
8	Ventilation fans 20 hp	Hour	2.00	11.50	23.00
	Fuel / Energy charges	Hour	2.00	112.10	224.20
9	Sundries(explosive van / magazine )	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>29001.20</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling jumbo	Hour	10.00	175.80	1758.00
2	Crew for Air compressor	Hour	6.50	175.80	1142.70
3	Crew for Jack hammer	Hour	26.00	329.60	8569.60
4	Crew for Convey mucker	Hour	6.00	175.80	1054.80
5	Crew for Dumper	Hour	12.00	227.10	2725.20
6	Crew for Pump	Hour	6.50	83.30	541.45
7	Crew for ventilation fans	Hour	2.00	28.70	57.40
8	Surveyor	Day	0.50	645.00	322.50
9	Foreman	Day	1.00	510.00	510.00
10	Fitter / Mechanic	Day	2.00	475.00	950.00
11	Blaster ( Licensed )	Day	1.00	510.00	510.00
12	Helper blasting	Day	2.00	400.00	800.00
13	Hammerman	Day	2.00	400.00	800.00
14	work inspector 1 in each shift	Day	3.00	450.00	1350.00
15	Khalasi for mucking shift 4 Nos	Day	4.00	445.00	1780.00
16	mazdoor for mucking shift 8 Nos for other 2 shifts 1 No each shift for cleaning & miscellaneous	Day	8.00 2.00 2.00	350.00 350.00 350.00	2800.00 700.00 700.00
Total cost of Labour				Rs:	<b>27071.65</b>

labour component/unit qty 557.00  
 Add contractor's profit and overhead charges 13.615% 75.80  
 labour component/unit qty (including contractor's profit) **632.80**

**ABSTRACT:**

A. Cost of Materials	Rs: 12916.90
B. Hire charges of Machinery	Rs: 29001.20
C. Cost of Labour	Rs: 27071.65
Total	Rs: 68989.75
Add for Air and Water line @ 1.00%	Rs: 689.90
Add for Ventilation @ 4.50%	Rs: 3104.54
Add for Lighting @ 1.60%	Rs: 1103.84
Add for Ele sub-station / Demand charges @ 2.50%	Rs: 1724.74
Total	Rs: 75612.77
D.Add for contractor's profit and overheads on (A+B+C+other percentages) 13.615%	Rs: 10294.68
Total cost for 48.60 cum	Rs: 85907.44
Rate per cum (A+B+C+D)/48.60	Rs: 1767.60

**IRR-TAW-1-4 Excavation for tunnel by tunnelling methods including excavation for supports in all types of soil / rock strata requiring supports ( excluding cost of providing supports ) including cost of all other materials, machinery, labour, scaling excavated surface, ventilation, lighting, drainage, removing and hauling the excavated muck outside tunnel upto specified dump area and all other ancillary operations etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS****UNIT :****46.00 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Small dia explosive	kg	41.00	70.00	2870.00
2	Delay detonators	Nos	77.00	20.00	1540.00
3	Electric detonators	Nos	10.00	11.00	110.00
4	Detonating fuse coil	Rm	50.00	9.00	450.00
5	Use rate of drill rod 2.5 m long Reconditioning charges @ 10%	Rm	144.00	41.69	6003.84
6	Use rate of air hose	Hour	24.00	5.78	138.75
7	Use rate of water hose	Hour	24.00	5.78	138.75
8	Sundries( paint / template etc )	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>11911.72</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling jumbo	Hour	11.00	368.40	4052.40
	Fuel / Energy charges	Hour	11.00	42.80	470.80
2	Air compressor 15 cmm ( ele )	Hour	6.00	138.80	832.80
	Fuel / Energy charges	Hour	6.00	700.50	4203.00
3	Jack hammer ( 4 x 6 hrs )	Hour	24.00	19.80	475.20
	Fuel / Energy charges	Hour	24.00	0.00	0.00
4	Pusher leg	Hour	24.00	12.70	304.80
	Fuel / Energy charges	Hour	24.00	0.00	0.00
5	Convey mucker	Hour	6.00	822.80	4936.80
	Fuel / Energy charges	Hour	6.00	195.00	1170.00
6	Dumper ( 2 x 6 hrs )	Hour	12.00	580.70	6968.40
	Fuel / Energy charges	Hour	12.00	399.90	4798.80
7	Pump 10 hp ( ele )	Hour	6.00	6.70	40.20
	Fuel / Energy charges	Hour	6.00	56.00	336.00
8	Ventilation fans 20 hp	Hour	2.00	11.50	23.00
	Fuel / Energy charges	Hour	2.00	112.10	224.20
9	Sundries(explosive van / magazine )	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>28896.40</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling jumbo	Hour	11.00	175.80	1933.80
2	Crew for Air compressor	Hour	6.00	175.80	1054.80
3	Crew for Jack hammer	Hour	24.00	329.60	7910.40
4	Crew for Convey mucker	Hour	6.00	175.80	1054.80
5	Crew for Dumper	Hour	12.00	227.10	2725.20
6	Crew for Pump	Hour	6.00	83.30	499.80
7	Crew for ventilation fans	Hour	2.00	28.70	57.40
8	Surveyor	Day	0.50	645.00	322.50
9	Foreman	Day	1.00	510.00	510.00
10	Fitter / Mechanic	Day	2.00	475.00	950.00
11	Blaster ( Licensed )	Day	1.00	510.00	510.00
12	Helper blasting	Day	2.00	400.00	800.00
13	Hamerman 2 Nos	Day	2.00	400.00	800.00
14	work inspector 1 in each shift	Day	3.00	450.00	1350.00
15	Khalasi for mucking shift 4 Nos	Day	4.00	445.00	1780.00
16	mazdoor for mucking shift 8 Nos for other 2 shifts 1 No each shift for cleaning & miscellaneous	Day	8.00 2.00 2.00	350.00 350.00 350.00	2800.00 700.00 700.00
Total cost of Labour				Rs:	<b>26458.70</b>

labour component/unit qty

575.20

Add contractor's profit and overhead charges

13.615% 78.30

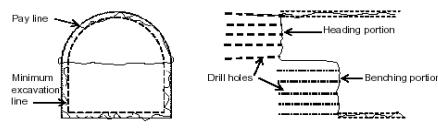
labour component/unit qty (including contractor's profit)

**653.50**

**ABSTRACT:**

A. Cost of Materials	Rs: 11911.72
B. Hire charges of Machinery	Rs: 28896.40
C. Cost of Labour	Rs: 26458.70
	Total Rs: <u>67266.82</u>
Add for Air and Water line @ 1.00%	Rs: 672.67
Add for Ventilation @ 4.50%	Rs: 3027.01
Add for Lighting @ 1.60%	Rs: 1076.27
Add for Ele sub-station / Demand charges @ 2.50%	Rs: 1681.67
	Total Rs: <u>73724.44</u>
D.Add for contractor's profit and overheads on (A+B+C+other percentages) 13.615%	Rs: 10037.58
Total cost for 46.00 cum	Rs: <b>83762.02</b>
<b>Rate per cum</b> (A+B+C+D)/46.0	Rs: <b>1820.90</b>

**IRR-TAW-1-5 Excavation for tunnel by heading and benching tunnelling methods including excavation for supports in all types of soil / rock strata requiring supports ( excluding cost of providing supports ) for roof before benching including cost of all other materials, machinery, labour, scaling excavated surface, ventilation, lighting, drainage removing and hauling excavated muck outside tunnel upto specified dump area and all other ancillary operations etc., complete with initial lead upto 1 km and all lifts.**



TYPICAL CROSS SECTION OF TUNNEL FOR HEADING &amp; BENCHING

DATA:

**RATE ANALYSIS**

UNIT :

**50.00 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Small dia explosive	kg	44.00	70.00	3080.00
2	Delay detonators	Nos	84.00	20.00	1680.00
3	Electric detonator	Nos	10.00	11.00	110.00
4	Detonating fuse coil	Rm	50.00	9.00	450.00
5	Use rate of drill rod 2.5 m long	Rm	157.00	41.69	6545.85
	Reconditioning charges @ 10%				654.59
6	Use rate of air hose	Hour	26.00	5.78	150.31
7	Use rate of water hose	Hour	26.00	5.78	150.31
8	Sundries( paint / template etc )	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>12881.06</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling jumbo	Hour	12.00	368.40	4420.80
	Fuel / Energy charges	Hour	12.00	42.80	513.60
2	Air compressor 15 cmm ( ele )	Hour	6.50	138.80	902.20
	Fuel / Energy charges	Hour	6.50	700.50	4553.25
3	Jack hammer ( 4 x 6.5 hrs )	Hour	26.00	19.80	514.80
	Fuel / Energy charges	Hour	26.00	0.00	0.00
4	Pusher leg	Hour	26.00	12.70	330.20
	Fuel / Energy charges	Hour	26.00	0.00	0.00
5	Convey mucker	Hour	6.50	822.80	5348.20
	Fuel / Energy charges	Hour	6.50	195.00	1267.50
6	Dumper ( 2 x 6.5 hrs )	Hour	13.00	580.70	7549.10
	Fuel / Energy charges	Hour	13.00	399.90	5198.70
7	Pump 10 hp ( ele )	Hour	6.50	6.70	43.55
	Fuel / Energy charges	Hour	6.50	56.00	364.00
8	Ventilation fans 20 hp	Hour	3.00	11.50	34.50

	Fuel / Energy charges	Hour	3.00	112.10	336.30
9	Sundries(explosive van / magazine )	LS	2.00	30.00	60.00
	Total hire charges of Machinery			Rs:	<b>31436.70</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling jumbo	Hour	12.00	175.80	2109.60
2	Crew for Air compressor	Hour	6.50	175.80	1142.70
3	Crew for Jack hammer	Hour	26.00	329.60	8569.60
4	Crew for Convey mucker	Hour	6.50	175.80	1142.70
5	Crew for Dumper	Hour	13.00	227.10	2952.30
6	Crew for Pump	Hour	6.50	83.30	541.45
7	Crew for Ventilation fan	Hour	3.00	28.70	86.10
8	Surveyor	Day	0.50	645.00	322.50
9	Foreman	Day	1.00	510.00	510.00
10	Fitter / Mechanic	Day	2.00	475.00	950.00
11	Blaster ( Licensed )	Day	2.00	510.00	1020.00
12	Helper blasting	Day	4.00	400.00	1600.00
13	Hammerman 2 Nos	Day	2.00	400.00	800.00
14	work inspector 1 in each shift	Day	3.00	450.00	1350.00
15	Khalasi for pushing muck in heading portion for mucking shift 4 Nos	Day	4.00	445.00	1780.00
16	mazdoor for mucking shift 8 Nos for other 2 shifts 1 No each shift for cleaning &miscellaneous	Day	8.00	350.00	2800.00
			2.00	350.00	700.00
			2.00	350.00	700.00
	Total cost of Labour			Rs:	<b>30856.95</b>

labour component/unit qty 617.10  
 Add contractor's profit and overhead charges 13.615% 84.00  
 labour component/unit qty (including contractor's profit) **701.10**

**ABSTRACT:**

A. Cost of Materials	Rs: 12881.06
B. Hire charges of Machinery	Rs: 31436.70
C. Cost of Labour	Rs: 30856.95
	Total Rs: <b>75174.71</b>
Add for Air and Water line @ 1.00%	Rs: 751.75
Add for Ventilation @ 4.50%	Rs: 3382.86
Add for Lighting @ 1.60%	Rs: 1202.80
Add for Ele sub-station / Demand charges @ 2.50%	Rs: 1879.37
	Total Rs: <b>82391.49</b>
D.Add for contractor's profit and overheads on (A+B+C+other percentages) 13.615%	Rs: 11217.60
Total cost for 50.00 cum	Rs: <b>93609.09</b>
<b>Rate per cum</b> (A+B+C+D)/50.0	Rs: <b>1872.20</b>

**NOTE:** Where mucking is to be carried out through shaft using winch and mucking tub system increase the basic rates for items IRR-TAW-1-3, IRR-TAW-1-4 & IRR-TAW-1-5 by 8 percent.

**IRR-TAW-1-6 Removing and hauling muck** overfallen due to natural causes such as geological faults etc., out of tunnel including breaking large fragments by blasting if necessary and disposing off the same in specified dump area or as directed including cost of all materials, machinery, labour, ventilation, drainage, lighting and all other ancillary operations etc., complete **with initial lead upto 1 km and all lifts.**

**DATA****RATE ANALYSIS****UNIT :****100.00 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of drill rod Reconditioning charges @ 10%	Rm	15.00	26.85	402.80
2	Explosive small dia.	kg	8.00	70.00	560.00
3	Detonator ( ele )	Nos.	30.00	11.00	330.00
4	Detonating fuse coil	Rm	20.00	9.00	180.00
5	Use rate of air hose	Hour	4.00	5.78	23.13
6	Use rate of water hose	Hour	4.00	5.78	23.13

7	Sundries	LS	1.00	30.00	30.00
	Total cost of Materials			Rs:	<b>1589.33</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor 15 cmm ( ele )	Hour	1.00	138.80	138.80
	Fuel / Energy charges	Hour	1.00	700.50	700.50
2	Jack hammer	Hour	4.00	19.80	79.20
	Fuel / Energy charges	Hour	4.00	0.00	0.00
3	Pump 10 hp ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
4	Convey mucker	Hour	6.00	822.80	4936.80
	Fuel / Energy charges	Hour	6.00	195.00	1170.00
5	Dumper 4.5 cum	Hour	12.00	580.70	6968.40
	Fuel / Energy charges	Hour	12.00	399.90	4798.80
6	Sundries	LS	1.00	30.00	30.00
	Total hire charges of Machinery			Rs:	<b>18885.20</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Air compressor	Hour	1.00	175.80	175.80
2	Crew for Jack hammer	Hour	4.00	329.60	1318.40
3	Crew for Pump	Hour	1.00	83.30	83.30
4	Crew for Convey mucker	Hour	6.00	175.80	1054.80
5	Crew for Dumper	Hour	12.00	227.10	2725.20
6	Blaster ( Licensed )	Day	0.50	510.00	255.00
7	Helper blasting	Day	0.50	400.00	200.00
8	mazdoor	Day	8.00	350.00	2800.00
	Total cost of Labour			Rs:	<b>8612.50</b>

labour component/unit qty

86.10

Add contractor's profit and overhead charges

13.615% 11.70

labour component/unit qty (including contractor's profit)

**97.80****ABSTRACT:**

A. Cost of Materials		Rs: 1589.33
B. Hire charges of Machinery		Rs: 18885.20
C. Cost of Labour		Rs: 8612.50
	Total	Rs: 29087.03
Add for Air and Water line @	1.00%	Rs: 290.87
Add for Ventilation @	4.50%	Rs: 1308.92
Add for Lighting @	1.60%	Rs: 465.39
Add for Ele sub-station / Demand charges @	2.50%	Rs: 727.18
	Total	Rs: 31879.38
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615%	Rs: 4340.38
Total cost for	100.00 cum	Rs: 36219.76
Rate per cum	(A+B+C+D)/100.0	Rs: 362.20

**IRR\_TAW-2 DEWATERING & GUNITING WORKS :**

**IRR-TAW-2-1 Dewatering tunnel by pumping out water collected by natural drainage inside tunnel** including providing sump wherever necessary, cost of all materials, machinery, labour, drainage, lighting, ventilation and all other ancillary operations etc., complete.

DATA

**RATE ANALYSIS**

UNIT :

**15.00 Kwhr****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of G.I.pipe 100 mm dia	Hour	1.00	4.67	4.67
2	Sundries	LS	0.10	30.00	3.00
	Total cost of Materials			Rs:	<b>7.67</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Electric pump 20 hp	Hour	1.00	12.30	12.30
2	Fuel / Energy charges	Hour	1.00	112.10	112.10
3	Sundries(Starter/Switches etc)	LS	0.10	30.00	3.00

Total hire charges of Machinery	Rs:	<b>127.40</b>
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**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew charges for Pump	Hour	1.00	83.30	83.30
2	Laying & dismantling pipe	LS	0.05	30.00	1.50
3	mazdoor	Day	0.10	350.00	35.00
Total cost of Labour				Rs:	<b>119.80</b>

labour component/unit qty 8.00  
 Add contractor's profit and overhead charges 13.615% 1.10  
 labour component/unit qty (including contractor's profit) **9.10**

**ABSTRACT:**

A. Cost of Materials	Rs:	7.67
B. Hire charges of Machinery	Rs:	127.40
C. Cost of Labour	Rs:	119.80
	Total	Rs: <u><b>254.87</b></u>
Add for Air and Water line @ 1.00%	Rs:	2.55
Add for Ventilation @ 4.50%	Rs:	11.47
Add for Lighting @ 1.60%	Rs:	4.08
Add for Ele sub-station / Demand charges @ 2.50%	Rs:	6.37
	Total	Rs: <u><b>279.33</b></u>
D.Add for contractor's profit and overheads on (A+B+C+other percentages) 13.615%	Rs:	38.03
Total cost for 15.00 Kwhr	Rs:	<b>317.36</b>
<b>Rate per Kwhr</b> (A+B+C+D)/15.0	Rs:	<b>21.20</b>

**IRR-TAW-2-2 Providing 25 mm thick guniting to sides and arch of tunnel in cement mortar 1 : 3 proportion by weight including cost of all materials, machinery, labour, ventilation, lighting, drainage and all other ancillary operations etc., complete with lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**36.00 sqm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	600.00	5.35	3210.00
2	Sand (Screened)	cum	1.10	165.00	181.50
3	Use rate of grout hose 20 m	Hour	8.00	5.78	46.25
4	Use rate of water hose 20 m	Hour	8.00	5.78	46.25
5	Use rate of guniting nozzle	Hour	8.00	3.50	28.00
6	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>3572.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Guniting equipment	Hour	8.00	110.10	880.80
	Fuel / Energy charges	Hour	8.00	0.00	0.00
2	Air compressor 8.5 cmm ( ele )	Hour	8.00	170.80	1366.40
	Fuel / Energy charges	Hour	8.00	315.20	2521.60
3	Pump 10 hp ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
4	Drilling jumbo	Hour	4.00	368.40	1473.60
	Fuel / Energy charges	Hour	4.00	42.80	171.20
5	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>6536.30</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Guniting equipment	Hour	8.00	219.70	1757.60
2	Crew for Air compressor	Hour	8.00	164.80	1318.40
3	Crew for pump	Hour	1.00	83.30	83.30
4	Crew for Drilling jumbo	Hour	4.00	175.80	703.20
5	Mason Cl I	Day	1.00	445.00	445.00
6	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour				Rs:	<b>6407.50</b>

labour component/unit qty	178.00
Add contractor's profit and overhead charges	13.615% 24.20
labour component/unit qty (including contractor's profit)	<u><b>202.20</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 3572.00
B. Hire charges of Machinery	Rs: 6536.30
C. Cost of Labour	Rs: 6407.50
	Total Rs: <u><b>16515.80</b></u>
Add for Air and Water line @ 1.00%	Rs: 165.16
Add for Ventilation @ 4.50%	Rs: 743.21
Add for Lighting @ 1.60%	Rs: 264.25
Add for Ele sub-station / Demand charges @ 2.50%	Rs: <u><b>412.90</b></u>
	Total Rs: <u><b>18101.32</b></u>
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615% Rs: 2464.49
Lead Charges for 1 Km for FA 1.10 cum @ 31.5 Rs./Cum	34.65
Total cost for 36.00 sqm	Rs: <b>20600.46</b>
Rate per sqm (A+B+C+D)/36.0	Rs: <b>572.20</b>

IRR-TAW-2-3 Shortcreting in two layers (each layer+38 mm thickness) for slabs duly fixing chain weld wire mesh  
(new4 - 2011-

12) 100 x 100x5 mm in between the two layers including cost and conveyance of all materials, labour charges, all heads, lifts, centering, scaffolding, machine mixing, laying concrete with shortcrete machine etc. complete as per specification and as directed by Engineer-in-Charge

Data RATE ANALYSIS UNIT : **36.00** sqm

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	1548.00	5.35	8281.80
2	Sand (Screened)	cum	2.41	165.00	397.65
3	Coarse aggregate 10-4.75 mm size	cum	1.03	900.00	927.00
4	Use rate of grout hose 20 m	Hour	8.00	5.78	46.25
5	Use rate of water hose 20 m	Hour	8.00	5.78	46.25
6	Use rate of guniting nozzle	Hour	8.00	3.50	28.00
7	Welded steel wire fabric 100 x 100 x 5 m	kg	108.00	185.00	19980.00
8	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>29766.95</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Guniting equipment	Hour	8.00	110.10	880.80
	Fuel / Energy charges	Hour	8.00	0.00	0.00
2	Air compressor 8.5 cmm ( ele )	Hour	8.00	170.80	1366.40
	Fuel / Energy charges	Hour	8.00	315.20	2521.60
3	Pump 10 hp ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
4	Drilling jumbo	Hour	4.00	368.40	1473.60
	Fuel / Energy charges	Hour	4.00	42.80	171.20
5	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>6536.30</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Guniting equipment	Hour	8.00	219.70	1757.60
2	Crew for Air compressor	Hour	8.00	164.80	1318.40
3	Crew for pump	Hour	1.00	83.30	83.30
4	Crew for Drilling jumbo	Hour	4.00	175.80	703.20
5	Mason Cl I	Day	1.00	445.00	445.00
6	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour				Rs:	<b>6407.50</b>

labour component/unit qty	178.00
Add contractor's profit and overhead charges	13.615% 24.20
labour component/unit qty (including contractor's profit)	<u><b>202.20</b></u>

**ABSTRACT:**

A. Cost of Materials		Rs:	29766.95
B. Hire charges of Machinery		Rs:	6536.30
C. Cost of Labour		Rs:	6407.50
	Total	Rs:	<u>42710.75</u>
Add for Air and Water line @	1.00%	Rs:	427.11
Add for Ventilation @	4.50%	Rs:	1921.98
Add for Lighting @	1.60%	Rs:	683.37
Add for Ele sub-station / Demand charges @	2.50%	Rs:	<u>1067.77</u>
	Total	Rs:	<u>46810.98</u>
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615%	Rs:	6373.32
Lead Charges for 1 Km for FA	2.41 cum @ 31.5 Rs./Cum	Rs:	75.915
Lead Charges for 1 Km for CA	1.03 cum @ 30.4 Rs./Cum	Rs:	31.312
Total cost for	36.00 sqm	Rs:	<b>53291.52</b>
<b>Rate per sqm</b>	(A+B+C+D)/36.0	Rs:	<b>1480.30</b>

**IRR\_TAW-3 TEMPORARY & PERMANENT SUPPORTS :****IRR-TAW-3-1 Providing and fixing 25 mm diameter steel rock bolts with mechanical / wedge type**

**anchorage** including drilling 35 mm dia holes, providing 15 cm long 20 mm thick steel tapered wedge, 10 mm thick plate washers and nuts, tightening bolt by torque wrench, cost of all materials, machinery, labour, ventilation, lighting, drainage and all other ancillary operations etc., complete **with lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**20.00 Rm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rein.Steel with 5 % wastage	kg	86.91	34.00	2955.07
2	Steel plate for washers	kg	65.94	37.40	2466.16
	Steel plate for wedges	kg	6.18	37.40	231.20
3	M S Nuts for bolts	kg	4.00	80.00	320.00
4	Use rate of drill rod	Rm	20.00	41.69	833.87
	Reconditioning charges @	10%			83.39
5	Use rate of air hose 4 Nos	Hour	6.00	5.78	34.69
6	Use rate of water hose 4 Nos	Hour	6.00	5.78	34.69
7	Sundries ( gas for cutting / heating etc )	LS	5.00	30.00	150.00
Total cost of Materials				Rs:	<b>7109.05</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor 15 cmm ( ele )	Hour	1.50	138.80	208.20
	Fuel / Energy charges	Hour	1.50	700.50	1050.75
2	Pump 10 hp ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
3	Jack hammer	Hour	6.00	19.80	118.80
	Fuel / Energy charges	Hour	6.00	0.00	0.00
4	Pusher leg	Hour	6.00	12.70	76.20
	Fuel / Energy charges	Hour	6.00	0.00	0.00
5	Drilling jumbo	Hour	4.00	368.40	1473.60
	Fuel / Energy charges	Hour	4.00	42.80	171.20
6	Sundries ( lathe, blower etc )	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>3311.45</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Air compressor	Hour	1.50	175.80	263.70
2	Crew for pump	Hour	1.00	83.30	83.30
3	Crew for Jack hammer	Hour	6.00	329.60	1977.60
4	Crew for Drilling jumbo	Hour	4.00	175.80	703.20
5	Fitter	Day	0.50	475.00	237.50
6	Gas cutter	Day	1.00	445.00	445.00
7	Turner	Day	1.00	510.00	510.00
8	Blacksmith	Day	1.00	445.00	445.00
9	Khalasi ( 2 x 0.5 )	Day	1.00	445.00	445.00
10	Hammerman	Day	0.50	400.00	200.00
11	mazdoor	Day	2.00	350.00	700.00

Total cost of Labour		Rs: <b>6010.30</b>
labour component/unit qty	300.50	
Add contractor's profit and overhead charges	13.615% 40.90	
labour component/unit qty (including contractor's profit)	<b>341.40</b>	
<b>ABSTRACT:</b>		
A. Cost of Materials		Rs: 7109.05
B. Hire charges of Machinery		Rs: 3311.45
C. Cost of Labour		Rs: <b>6010.30</b>
	Total	Rs: <b>16430.80</b>
Add for Air and Water line @	1.00%	Rs: 164.31
Add for Ventilation @	4.50%	Rs: 739.39
Add for Lighting @	1.60%	Rs: 262.89
Add for Ele sub-station / Demand charges @	2.50%	Rs: 410.77
	Total	Rs: <b>18008.16</b>
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615%	Rs: 2451.81
Lead Charges for 1Km for Steel (including Loading and Unloading Charges)	0.16 tonne @ 168.6 Rs./Tonne	26.81340638
Total cost for Rate per Rm	20.00 Rm	Rs: <b>20486.79</b>
(A+B+C+D)/20.00		Rs: <b>1024.30</b>

**IRR-TAW-3-2 Providing and fixing 25 mm diameter steel rock bolts with resin bond cement capsule**

**anchorage** including drilling 35 mm dia holes, inserting grout capsule, driving bolt,fixing 10 mm thick plate washers and nuts and tightening the same by torque wrench after hardening of cement grout, cost of all materials, machinery, labour, ventilation, lighting, drainage and other ancillary operations etc., **complete with lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **20.00 Rm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rein.Steel with 5 % wastage	kg	86.91	34.00	2955.07
2	Steel plate for washers	kg	65.94	37.40	2466.16
3	Resin bond cement grout capsule	Nos.	2.00	37.40	74.80
4	M S Nuts for bolts	kg	4.00	80.00	320.00
5	Use rate of drill rod	Rm	20.00	41.69	833.87
	Reconditioning charges @	10%			83.39
6	Use rate of air hose 4 Nos	Hour	6.00	5.78	34.69
7	Use rate of water hose 4 Nos	Hour	6.00	5.78	34.69
8	Sundries(gas for cutting etc)	LS	3.00	30.00	90.00
Total cost of Materials				Rs:	<b>6892.65</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor 15 cmm ( ele )	Hour	1.50	138.80	208.20
	Fuel / Energy charges	Hour	1.50	700.50	1050.75
2	Pump 10 hp ( ele )	Hour	1.00	6.70	6.70
	Fuel / Energy charges	Hour	1.00	56.00	56.00
3	Jack hammer	Hour	6.00	19.80	118.80
	Fuel / Energy charges	Hour	6.00	0.00	0.00
4	Pusher leg	Hour	6.00	12.70	76.20
	Fuel / Energy charges	Hour	6.00	0.00	0.00
5	Drilling jumbo	Hour	4.00	368.40	1473.60
	Fuel / Energy charges	Hour	4.00	42.80	171.20
6	Sundries ( lathe, etc )	LS	3.00	30.00	90.00
Total hire charges of Machinery				Rs:	<b>3251.45</b>

**C. LABOUR:**

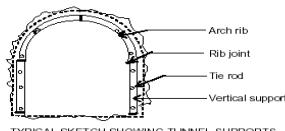
SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Air compressor	Hour	1.50	175.80	263.70
2	Crew for pump	Hour	1.00	83.30	83.30
3	Crew for Jack hammer	Hour	6.00	329.60	1977.60
4	Crew for Drilling jumbo	Hour	4.00	175.80	703.20
5	Fitter	Day	0.50	400.00	200.00
6	Gas cutter	Day	1.00	445.00	445.00

7	Turner	Day	1.00	510.00	510.00
8	Khalasi ( 2 x 0.5 )	Day	1.00	445.00	445.00
9	Hammerman	Day	0.50	400.00	200.00
10	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	<b>5527.80</b>
labour component/unit qty			276.40		
Add contractor's profit and overhead charges			13.615%	37.60	
labour component/unit qty (including contractor's profit)				<b>314.00</b>	

**ABSTRACT:**

A. Cost of Materials		Rs:	6892.65
B. Hire charges of Machinery		Rs:	3251.45
C. Cost of Labour		Rs:	<b>5527.80</b>
	Total	Rs:	<u>15671.90</u>
Add for Air and Water line @	1.00%	Rs:	156.72
Add for Ventilation @	4.50%	Rs:	705.24
Add for Lighting @	1.60%	Rs:	250.75
Add for Ele sub-station / Demand charges @	2.50%	Rs:	391.80
	Total	Rs:	<u>17176.40</u>
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615%	Rs:	2338.57
Lead Charges for 1Km for Steel (including Loading and Unloading Charges)	0.15      tonne @    20.00 Rm	168.6 Rs./Tonne	25.77114225
Total cost for		Rs:	<b>19540.74</b>
<b>Rate per Rm</b>	(A+B+C+D)/20.0	Rs:	<b>977.00</b>

**IRR-TAW-3-3** Providing, fabricating and **fixing in position** permanent structural steel supports as per details including cost of all materials, machinery, labour, cutting, bending, welding, grinding, lighting, ventilation, drainage and all other ancillary operations etc., complete with initial lead upto **1 km and all lifts.**



Data

**RATE ANALYSIS**

UNIT :

**1.00** tonne**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel beams	kg	760.00	37.50	28500.00
2	Structural steel plates	kg	115.00	37.40	4301.00
3	Steel bars for tie rods & anchors	kg	150.00	34.00	5100.00
4	For cutting sections: Oxygen gas @ 2.4 cum / t Acetylene gas @ 0.8 cum / t	cum	2.40	42.00	100.80
5	For welding sections: Electrodes 4 x 300 mm @ 125 Nos / t	Nos.	0.80	335.00	268.00
6	For field connections: M.S.Bolts / Nuts & Washers	kg	125.00	13.00	1625.00
7	Sundries	LS	50.00	80.00	4000.00
Total cost of Materials				Rs:	<b>44044.80</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Bending machine	Hour	8.00	42.60	340.80
	Fuel / Energy charges	Hour	8.00	84.10	672.80
2	Welding set	Hour	16.00	16.00	256.00
	Fuel / Energy charges	Hour	16.00	67.20	1075.20
3	Drilling Jumbo	Hour	12.00	368.40	4420.80
	Fuel / Energy charges	Hour	12.00	42.80	513.60
4	Sundries ( lathe / drilling / grinder )	LS	30.00	30.00	900.00
Total hire charges of Machinery				Rs:	<b>8179.20</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling Jumbo	Hour	12.00	175.80	2109.60
2	Crew for Bending machine	Hour	8.00	131.80	1054.40
3	For cutting & preparing sections:				
	Structural steel Marker	Day	1.00	550.00	550.00
	Gas cutter	Day	2.00	445.00	890.00
	Fitter	Day	2.00	475.00	950.00
	Turner / Driller	Day	3.00	510.00	1530.00
	Khalasi	Day	2.00	445.00	890.00
	Helper fabrication	Day	4.00	400.00	1600.00
4	For welding sections:				
	Welder	Day	2.00	445.00	890.00
	Helper fabrication	Day	2.00	400.00	800.00
	Khalasi	Day	2.00	445.00	890.00
5	For erection of supports:				
	Foreman	Day	1.00	510.00	510.00
	Structural steel Erector	Day	2.00	550.00	1100.00
	Helper erector	Day	2.00	400.00	800.00
	Khalasi	Day	4.00	445.00	1780.00
Total cost of Labour				Rs:	<b>16344.00</b>

labour component/unit qty 16344.00

Add contractor's profit and overhead charges 13.615% 2225.20labour component/unit qty (including contractor's profit) 18569.20**ABSTRACT:**

A. Cost of Materials	Rs: 44044.80
B. Hire charges of Machinery	Rs: 8179.20
C. Cost of Labour	Rs: <u>16344.00</u>
	Total Rs: <u>68568.00</u>
Add for Air and Water line @ 1.00%	Rs: 685.68
Add for Ventilation @ 4.50%	Rs: 3085.56
Add for Lighting @ 1.60%	Rs: 1097.09
Add for Ele sub-station / Demand charges @ 2.50%	Rs: <u>1714.20</u>
	Total Rs: <u>75150.53</u>
D.Add for contractor's profit and overheads on (A+B+C+other percentages) 13.615%	Rs: 10231.74
Lead Charges for 1Km for Steel (including Loading and Unloading Charges) 1.03 tonne @ 168.6 Rs./Tonne	172.815
Total cost for Rate per tonne 1.00 tonne	Rs: <b>85555.09</b>
Rate per tonne (A+B+C+D)/1.0	Rs: <b>85555.10</b>

**IRR-TAW-3-4 Providing, fabricating and fixing in position temporary structural steel supports as per details**

and dismantling the same before concreting including cost of all materials, machinery, labour, cutting, bending, welding, grinding, ventilation, lighting, drainage and all other ancillary operations etc., complete with initial lead upto 1 km and all lifts.

**DATA****RATE ANALYSIS****UNIT :****1.00 tonne****A. MATERIALS (for 20 uses):**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel beams	kg	760.00	37.50	28500.00
2	Structural steel plates	kg	115.00	37.40	4301.00
3	Tie rods & anchors	kg	150.00	34.00	5100.00
4	For cutting sections:				
	Oxygen gas @ 2.40 cum / t	cum	2.40	42.00	100.80
	Acetylene @ 0.8 cum / t	cum	0.80	335.00	268.00
5	For welding sections:				
	Electrodes @ 125 Nos / t	Nos.	125.00	13.00	1625.00
6	For field connections:				
	M.S.Bolts / Nuts / Washers	kg	50.00	80.00	4000.00
7	Sundries	LS	20.00	30.00	600.00
Total cost of Materials for 20 uses of supports				Rs:	<b>44494.80</b>
Cost per use considering 20 uses				Rs:	<b>2224.74</b>

**B. MACHINERY (for fabrication):**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Bending machine	Hour	8.00	42.60	340.80
	Fuel / Energy charges	Hour	8.00	84.10	672.80
2	Welding set	Hour	16.00	16.00	256.00
	Fuel / Energy charges	Hour	16.00	67.20	1075.20
3	Sundries	LS	30.00	30.00	900.00
Total hire charges of Machinery				Rs:	3244.80
Cost per use considering 20 uses				Rs:	162.24

**B. MACHINERY (for erection and dismantling):**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling Jumbo	Hour	18.00	368.40	6631.20
	Fuel / Energy charges	Hour	18.00	42.80	770.40
2	Sundries	LS	10.00	30.00	300.00
Total hire charges of Machinery				Rs:	7701.60

**C. LABOUR ( for fabrication ):**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Bending machine	Hour	8.00	131.80	1054.40
2	For cutting & preparing sections:				
	Structural steel Marker	Day	1.00	550.00	550.00
	Gas cutter	Day	2.00	445.00	890.00
	Fitter	Day	2.00	475.00	950.00
	Turner / Driller	Day	3.00	510.00	1530.00
	Khalasi	Day	2.00	445.00	890.00
	Helper fabrication	Day	4.00	400.00	1600.00
3	For welding sections:				
	Welder	Day	2.00	445.00	890.00
	Helper fabrication	Day	2.00	400.00	800.00
	Khalasi	Day	2.00	445.00	890.00
Total cost of Labour				Rs:	10044.40
Cost per use considering 20 uses				Rs:	502.22

**C. LABOUR ( for erection ):**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling jumbo	Hour	8.00	175.80	1406.40
2	For erection of supports:				
	Foreman	Day	1.00	510.00	510.00
	Structural steel Erector	Day	2.00	550.00	1100.00
	Helper erector	Day	2.00	400.00	800.00
	Khalasi	Day	4.00	445.00	1780.00
3	For dismantling of supports:				
	Foreman	Day	0.50	510.00	255.00
	Structural steel Erector	Day	1.00	550.00	550.00
	Helper erector	Day	1.00	400.00	400.00
	Khalasi	Day	2.00	445.00	890.00
Total cost of Labour				Rs:	7691.40

labour component/unit qty 8193.60  
 Add contractor's profit and overhead charges 13.615% 1115.60  
 labour component/unit qty (including contractor's profit) 9309.20

**ABSTRACT:**

A. Cost of Materials		Rs: 2224.74
B. Hire charges of Machinery for fabrication		Rs: 162.24
C. Hire charges of Machinery for erection and dismantling		Rs: 7701.60
D. Cost of Labour for fabrication		Rs: 502.22
E. Cost of Labour for erection and dismantling		Rs: 7691.40
Add for Air and Water line @	1.00%	Rs: 182.82
Add for Ventilation @	4.50%	Rs: 822.70
Add for Lighting @	1.60%	Rs: 292.52
Add for Ele sub-station / Demand charges @	2.50%	Rs: 457.06
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	Total 13.615%	Rs: 20037.29
		Rs: 2728.08

Lead Charges for 1Km for Steel (including Loading and Unloading Charges)	1.03	tonne @ 168.6 Rs./Tonne	172.815
Total cost for		1.00 tonne	Rs: <b>22938.18</b>
<b>Rate per tonne</b>	(A+B+C+D)/1.0		Rs: <b>22938.20</b>

IRR-TAW-3-5 Providing and fixing hard variety cut jungle wood for lagging / blocking locations in tunnel wherever required including cost of all materials, machinery, labour, fixing in position, lighting, ventilation, drainage etc complete with all leads and lifts.

DATA:

**RATE ANALYSIS**

UNIT :

**1.00 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cut jungle wood	cum	1.05	23000.00	24150.00
2	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>24210.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling jumbo	Hour	2.00	368.40	736.80
	Fuel / Energy charges	Hour	2.00	42.80	85.60
Total hire charges of Machinery				Rs:	<b>822.40</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling jumbo	Hour	2.00	175.80	351.60
2	Carpenter CI II	Day	1.00	400.00	400.00
3	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	<b>1451.60</b>

labour component/unit qty 1451.60  
 Add contractor's profit and overhead charges 13.615% 197.60  
 labour component/unit qty (including contractor's profit) **1649.20**

**ABSTRACT:**

A. Cost of Materials	Rs: 24210.00
B. Hire charges of Machinery	Rs: 822.40
C. Cost of Labour	Rs: 1451.60
	Total Rs: 26484.00
Add for Air and Water line @ 1.00%	Rs: 264.84
Add for Ventilation @ 4.50%	Rs: 1191.78
Add for Lighting @ 1.60%	Rs: 423.74
Add for Ele sub-station / Demand charges @ 2.50%	Rs: 662.10
	Total Rs: 29026.46
D.Add for contractor's profit and overheads on (A+B+C+other percentages) 13.615%	Rs: 3951.95
Total cost for 1.00 cum	Rs: 32978.42
<b>Rate per cum</b> (A+B+C+D)/1.0	Rs: <b>32978.40</b>

**IRR\_TAW-4 MASONRY WORKS :**

IRR-TAW-4-1 Providing and **constructing un-coursed rubble stone masonry with approved stones from tunnel excavated muck in cement mortar 1 : 6 proportion** for backfilling over cuts / slips on tunnel sides due to geological faults etc., including cost of all materials, machinery, labour, cleaning,scaffolding, packing mortar, wedging stone chips, curing, ventilation, lighting, drainage complete with lead upto 1 km and all lifts.  
 (cement content : 95 kg/cum of masonry, Rubble stones : 0.83 cum, Stone chips : 0.13 cum, FA : 0.40 cum)

DATA

**RATE ANALYSIS**

UNIT :

**10.00 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	950.00	5.35	5082.50
2	Rubble stones	cum	8.30	318.00	2639.40
3	Stone chips	cum	1.25	350.00	437.50

4	Sand (Screened)	cum	4.00	165.00	660.00
			TOTAL	Rs:	8819.40
	Add for scaffolding @		2.5%	Rs:	220.49
	Total cost of Materials			Rs:	<b>9039.89</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	10 hp pump ( ele ) Fuel / energy charges	Hour	1.00	6.70	6.70
	Total hire charges of Machinery	Hour	1.00	56.00	56.00
				Rs:	<b>62.70</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Pump	Hour	1.00	83.30	83.30
2	work inspector	Day	1.00	450.00	450.00
3	Mason Class-I	Day	1.00	445.00	445.00
4	Mason Class-II	Day	2.00	400.00	800.00
5	mazdoor for sorting out rubble in dump yard for conveying rubble for preparing mortar for loading mortar pans for laying & packing mortar for washing rubble / finishing / curing for conveying mortar / chips	Day	1.00 2.00 2.00 1.00 4.00 1.00 3.00	350.00 350.00 350.00 350.00 350.00 350.00 350.00	350.00 700.00 700.00 350.00 1400.00 350.00 1050.00
				TOTAL	Rs: 6678.30
	Add for labour for scaffolding @		15.0%	Rs:	1001.75
	Total cost of Labour			Rs:	<b>7680.05</b>

labour component/unit qty

768.00

Add contractor's profit and overhead charges

13.615% 104.60

labour component/unit qty (including contractor's profit)

**872.60****ABSTRACT:**

A. Cost of Materials		Rs:	9039.89
B. Hire charges of Machinery		Rs:	62.70
C. Cost of Labour		Rs:	<b>7680.05</b>
		Total	Rs: 16782.63
Add for Air and Water line @	1.00%	Rs:	167.83
Add for Ventilation @	4.50%	Rs:	755.22
Add for Lighting @	1.60%	Rs:	268.52
Add for Ele sub-station / Demand charges @	2.50%	Rs:	419.57
		Total	Rs: 18393.76
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615%	Rs:	2504.31
Lead Charges for 1 Km for FA	4.00 cum @ 31.5 Rs./Cum	126	
Lead Charges for 1 Km for Stones and Stone Chip	9.55 cum @ 30.4 Rs./Cum	290.32	
Total cost for	10.00 cum	Rs:	<b>21314.39</b>
Rate per cum	(A+B+C+D)/10.00	Rs:	<b>2131.40</b>

**IRR\_TAW-5 REINFORCEMENT & CONCRETE WORKS :****IRR-TAW-5-1 Providing, fabricating and placing in position reinforcement steel for tunnel RCC works**

including cleaning, straightening, cutting, bending, hooking, lapping / welding joints wherever required, tying with 1.25 mm dia.soft annealed steel wire, including cost of all materials, labour, machinery, ventilation, lighting, drainage etc.,complete with initial lead upto 1 km and all lifts.

DATA

RATE ANALYSIS

UNIT :

**1.00 tonne****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rein.Steel with 5 % wastage	tonne	1.05	34000.00	35700.00
2	Binding wire 1.25 mm dia	kg	13.50	60.00	810.00
3	Sundries ( chairs / spacers etc )	LS	5.00	30.00	150.00
	Total cost of Materials			Rs:	<b>36660.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate	Amount
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			in Rs.	in Rs.
1	Nil		0.00	0.00
			0.00	0.00
	Total hire charges of Machinery		Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Bar bender	Day	9.00	555.00	4995.00
2	mazdoor	Day	15.00	350.00	5250.00
Total cost of Labour				Rs:	<b>10245.00</b>

labour component/unit qty 10245.00

Add contractor's profit and overhead charges 13.615% 1394.90

labour component/unit qty (including contractor's profit) **11639.90****ABSTRACT:**

A. Cost of Materials		Rs:	36660.00
B. Hire charges of Machinery		Rs:	0.00
C. Cost of Labour		Rs:	<u><b>10245.00</b></u>
	Total	Rs:	<u><b>46905.00</b></u>
Add for Air and Water line @ 1.00%		Rs:	469.05
Add for Ventilation @ 4.50%		Rs:	2110.73
Add for Lighting @ 1.60%		Rs:	750.48
Add for Ele sub-station / Demand charges @ 2.50%		Rs:	<u><b>1172.63</b></u>
	Total	Rs:	<u><b>51407.88</b></u>
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615%	Rs:	6999.18
Lead Charges for 1Km for Steel (including Loading and Unloading Charges)	1.05	tonne @ 168.6 Rs./Tonne	177.03
Total cost for Rate per tonne	1.00 tonne	Rs:	<b>58584.09</b>
	(A+B+C+D)/1.0	Rs:	<b>58584.10</b>

IRR-TAW-5-2 Providing and laying **insitu vibrated M-10** ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates crushed from tunnel excavated muck **for filling and levelling over-cuts in bed due to geological faults etc.,** including cost of all materials, machinery, labour, cleaning bed, batching, mixing, conveying and laying, levelling, compacting, finishing, curing, lighting, ventilation, drainage etc., complete with initial lead upto 1 km and all lifts. ( Cement content : 220 kg / cum, CA : 0.90cum, Blending Ratio of CA-50:30:20, FA : 0.40 cum, Superplasticizer 0.4% by wt. of cement)

DATA

RATE ANALYSIS

UNIT :

**28.00** cum**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	6160.00	5.35	32956.00
2	Coarse aggregate 40-20 mm	cum	12.60	1175.00	14805.00
	Coarse aggregate 20-10 mm	cum	7.56	1225.00	9261.00
	Coarse aggregate 10 mm below	cum	5.04	900.00	4536.00
3	Fine aggregate (Un-Screened )	cum	11.20	95.00	1064.00
4	Super Plasticizer	kg	24.64	55.00	1355.20
5	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>64037.20</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Batching plant 2 x 1 cum	Hour	8.00	405.40	3243.20
	Fuel / Energy charges	Hour	8.00	252.20	2017.60
2	Agitator car 2 cum	Hour	16.00	758.40	12134.40
	Fuel / Energy charges	Hour	16.00	872.70	13963.20
3	10 hp pump ( ele )	Hour	8.00	6.70	53.60
	Fuel / Energy charges	Hour	8.00	56.00	448.00
4	Needle vibrator 40 mm dia	Hour	8.00	8.00	64.00
	Fuel / Energy charges	Hour	8.00	5.60	44.80
5	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>32028.80</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Agitator car	Hour	16.00	283.90	4542.40
3	Crew for Pump	Hour	8.00	83.30	666.40
4	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
5	Mason Class-I	Day	1.00	445.00	445.00
6	work inspector	Day	1.00	450.00	450.00
7	mazdoor for cleaning bed for loading material bin ( Cement ) for miscellaneous works at BP for laying concrete for conveying laying concrete for cleaning bed for washing CA / curing	Day	2.00 3.00 2.00 7.00 14.00 2.00 2.00	350.00 350.00 350.00 350.00 350.00 350.00 350.00	700.00 1050.00 700.00 2450.00 4900.00 700.00 700.00
Total cost of Labour				Rs:	<b>21294.20</b>

labour component/unit qty 760.50  
 Add contractor's profit and overhead charges 13.615% 103.50  
 labour component/unit qty (including contractor's profit) **864.00**

**ABSTRACT:**

A. Cost of Materials	Rs: 64037.20
B. Hire charges of Machinery	Rs: 32028.80
C. Cost of Labour	Rs: <u>21294.20</u>
	Total Rs: <u>117360.20</u>
Add for Air and Water line @ 1.00%	Rs: 1173.60
Add for Ventilation @ 4.50%	Rs: 5281.21
Add for Lighting @ 1.60%	Rs: 1877.76
Add for Ele sub-station / Demand charges @ 2.50%	Rs: 2934.01
	Total Rs: <u>128626.78</u>
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615% Rs: 17512.54
Lead Charges for 1 Km for FA 11.20 cum @ 31.5 Rs./Cum	352.8
Lead Charges for 1 Km for CA 25.20 cum @ 30.4 Rs./Cum	766.08
Total cost for 28.00 cum	Rs: <b>147258.20</b>
<b>Rate per cum</b> (A+B+C+D)/28.0	Rs: <b>5259.20</b>

IRR-TAW-5-3 Providing and **laying insitu vibrated M-20** ( 28 days cube compressive strength not less than 20 N / sqmm ) grade **cement concrete using 40 mm and down size** approved clean, hard, graded aggregates crushed from tunnel muck for **kerb and bed lining** including cost of all materials, machinery, labour, formwork, batching, mixing, conveying upto placing point in agitator cars, placing in position, levelling, vibrating, finishing, curing, ventilation, lighting, drainage and all other ancillary operations etc., complete **with lead upto 1 km and all lifts**.  
 ( Cement content 330 kg / cum for use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA-50:30:20, FA : 0.40 cum)

**DATA****RATE ANALYSIS****UNIT :****28.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement 43 Gr	kg	9240.00	5.35	49434.00
	Cement for incidentals @ 1 kg / cum	kg	28.00	5.35	149.80
2	Fine aggregate (Un-Screened )	cum	11.20	95.00	1064.00
3	Coarse aggregate 40-20 mm	cum	12.60	1175.00	14805.00
	Coarse aggregate 20-10 mm	cum	7.56	1225.00	9261.00
	Coarse aggregate 10-4.75 mm	cum	5.04	900.00	4536.00
4	Super plasticiser	kg	36.96	55.00	2032.80
5	Use rate of shuttering for kerb / bed	sqm	28.00	150.57	4215.89
6	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>85558.49</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Batching plant 2 x 1.00 cum	Hour	8.00	405.40	3243.20
	Fuel / Energy charges	Hour	8.00	252.20	2017.60

2	Agitator car 2 cum ( 2 Nos )	Hour	16.00	758.40	12134.40
	Fuel / Energy charges	Hour	16.00	872.70	13963.20
3	Needle Vibrator	Hour	8.00	8.00	64.00
	Fuel / Energy charges	Hour	8.00	5.60	44.80
4	Pump 10 hp ( Ele )	Hour	8.00	6.70	53.60
	Fuel / Energy charges	Hour	8.00	56.00	448.00
5	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>32118.80</b>

**C. LABOUR:**

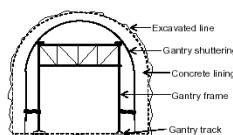
SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Agitator car	Hour	16.00	283.90	4542.40
3	Crew for vibrator	Hour	8.00	158.20	1265.60
4	Crew for pump	Hour	8.00	83.30	666.40
5	For scaling & cleaning bed Hammerman	Day	2.00	400.00	800.00
	mazdoor	Day	6.00	350.00	2100.00
6	For loading cement to BP bin mazdoor	Day	3.00	350.00	1050.00
7	For miscellaneous work at BP mazdoor	Day	2.00	350.00	700.00
8	For wetting C.A & curing mazdoor	Day	2.00	350.00	700.00
9	Laying concrete for kerb/ invert Mason CI I	Day	2.00	445.00	890.00
	Mason CI II	Day	2.00	400.00	800.00
	mazdoor	Day	21.00	350.00	7350.00
	work inspector	Day	1.00	450.00	450.00
10	Labour charges for shuttering	sqm	28.00	88.50	2478.00
Total cost of Labour				Rs:	<b>26517.20</b>

labour component/unit qty 947.00  
 Add contractor's profit and overhead charges 13.615% 128.90  
 labour component/unit qty (including contractor's profit) **1075.90**

**ABSTRACT:**

A. Cost of Materials	Rs: 85558.49
B. Hire charges of Machinery	Rs: 32118.80
C. Cost of Labour	Rs: 26517.20
	Total Rs: 144194.49
Add for Air and Water line @ 1.00%	Rs: 1441.94
Add for Ventilation @ 4.50%	Rs: 6488.75
Add for Lighting @ 1.60%	Rs: 2307.11
Add for Ele sub-station / Demand charges @ 2.50%	Rs: 3604.86
	Total Rs: 158037.16
D.Add for contractor's profit and overheads on (A+B+C+other percentages) 13.615%	Rs: 21516.76
Lead Charges for 1 Km for FA 11.20 cum @ 31.5 Rs./Cum	352.8
Lead Charges for 1 Km for CA 25.20 cum @ 30.4 Rs./Cum	766.08
Total cost for 28.00 cum	Rs: 180672.80
Rate per cum (A+B+C+D)/28.0	Rs: 6452.60

IRR-TAW-5-4 Providing and laying insitu vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sqmm ) grade cement concrete using 40 mm and down size approved clean, hard, graded aggregates crushed from tunnel muck for sides and arch lining including cost of all materials, machinery, labour, formwork, batching, mixing, conveying upto placing point in agitator cars, placing in position, levelling, vibrating, finishing, curing, ventilation, lighting, drainage and all other ancillary operations etc., complete with lead upto 1 km and all lifts. ( Cement content 330 kg / cum for use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA-50:30:20, FA : 0.40 cum)



DATA:

**RATE ANALYSIS**

UNIT :

**48.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement 43 Gr	kg	15840.00	5.35	84744.00
	Cement for incidentals @ 1 kg / cum	kg	48.00	5.35	256.80
2	Fine aggregate (Un-Screened )	cum	19.20	95.00	1824.00
3	Coarse aggregate 40-20 mm	cum	21.60	1175.00	25380.00
	Coarse aggregate 20-10 mm	cum	12.96	1225.00	15876.00
	Coarse aggregate 10-4.75 mm	cum	8.64	900.00	7776.00
4	Super plasticiser	kg	63.36	55.00	3484.80
5	Use rate of end shuttering	sqm	6.00	150.57	903.41
6	Use rate of steel gantry	sqm	100.00	88.50	8850.00
7	Sundries ( placer pipe etc )	LS	5.00	30.00	150.00
Total cost of Materials				Rs:	<b>149245.01</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor ( Ele ) 8.5 cmm	Hour	16.00	170.80	2732.80
	Fuel / Energy charges @ 75 % load	Hour	12.00	315.20	3782.40
2	Batching plant 2 x 1.00 cum	Hour	12.00	405.40	4864.80
	Fuel / Energy charges	Hour	12.00	252.20	3026.40
3	Agitator car 2 cum ( 2 Nos )	Hour	32.00	758.40	24268.80
	Fuel / Energy charges	Hour	32.00	872.70	27926.40
4	Concrete placer pump	Hour	16.00	1004.30	16068.80
	Fuel / Energy charges	Hour	16.00	336.20	5379.20
5	Needle Vibrator / Shutter vibrator	Hour	8.00	8.00	64.00
	Fuel / Energy charges	Hour	8.00	5.60	44.80
6	Pump 10 hp ( Ele )	Hour	8.00	6.70	53.60
	Fuel / Energy charges	Hour	8.00	56.00	448.00
7	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>88810.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew charges for Air compressor	Hour	16.00	164.80	2636.80
2	Crew charges for Batching plant	Hour	16.00	340.60	5449.60
3	Crew charges for Agitator car	Hour	32.00	283.90	9084.80
4	Crew charges for placer pump	Hour	16.00	164.80	2636.80
5	Crew charges for vibrator	Hour	8.00	158.20	1265.60
6	Crew charges for Pump	Hour	8.00	83.30	666.40
7	For scaling & cleaning				
	Stone chiseller CI II	Day	0.50	400.00	200.00
	mazdoor	Day	1.00	350.00	350.00
8	For dismantling / Laying track				
	Surveyer	Day	0.50	645.00	322.50
	Fitter shuttering	Day	0.50	400.00	200.00
	Helper shuttering 2 x 0.5	Day	1.00	400.00	400.00
	Khalasi 6 x 0.5	Day	3.00	445.00	1335.00
	mazdoor 2 x 0.5	Day	1.00	350.00	350.00
9	For Moving / Positioning gantry				
	Surveyer	Day	0.50	645.00	322.50
	Foreman	Day	0.50	510.00	255.00
	Fitter shuttering	Day	0.50	400.00	200.00
	Helper shuttering 2 x 0.5	Day	1.00	400.00	400.00
	Khalasi 6 x 0.5	Day	3.00	445.00	1335.00
	mazdoor 2 x 0.5	Day	1.00	350.00	350.00
10	For loading cement to BP bin				
	mazdoor	Day	5.00	350.00	1750.00
11	For miscellaneous works of BP				
	mazdoor	Day	2.00	350.00	700.00
12	For Erection/Dismantling bulk head				
	sqm	6.00	88.50	531.00	
13	For Laying concrete by placer				
	Masom CI I	Day	3.00	445.00	1335.00

14	mazdoor work inspector For wetting C.A / Curing etc mazdoor	Day Day Day	9.00 3.00 3.00	350.00 450.00 350.00	3150.00 1350.00 1050.00
	Total cost of Labour			Rs:	<b>37626.00</b>
	labour component/unit qty		783.90		
	Add contractor's profit and overhead charges	13.615%	106.70		
	labour component/unit qty (including contractor's profit)		<b>890.60</b>		

**ABSTRACT:**

A. Cost of Materials	Rs: 149245.01
B. Hire charges of Machinery	Rs: 88810.00
C. Cost of Labour	Rs: <u>37626.00</u>
	Total Rs: <u>275681.01</u>
Add for Air and Water line @ 1.00%	Rs: 2756.81
Add for Ventilation @ 4.50%	Rs: 12405.65
Add for Lighting @ 1.60%	Rs: 4410.90
Add for Ele sub-station / Demand charges @ 2.50%	Rs: <u>6892.03</u>
	Total Rs: <u>302146.38</u>
D.Add for contractor's profit and overheads on (A+B+C+other percentages) 13.615%	Rs: 41137.23
Lead Charges for 1 Km for FA 19.20 cum @ 31.5 Rs./Cum	604.8
Lead Charges for 1 Km for CA 43.20 cum @ 30.4 Rs./Cum	1313.28
Total cost for 48.00 cum	Rs: <b>345201.69</b>
<b>Rate per cum</b> (A+B+C+D)/48.0	Rs: <b>7191.70</b>

**IRR-TAW-6 DRILLING & GROUTING WORKS :**

**IRR-TAW-6-1 Drilling 32 mm diameter grout holes in concrete / rock by percussion drilling** using jack hammer or stooper drills as directed to specified depth for consolidation / contact grouting including cost of all materials, machinery, labour, cleaning holes, ventilation, lighting, drainage and all other ancillary operations etc., complete.

DATA:

**RATE ANALYSIS**

UNIT :

**100.00 Rm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of drill rod Reconditioning charges @ 10%	Rm	100.00	41.69	4169.33
2	Use rate of air hose 4 Nos	Hour	32.00	5.78	185.00
3	Use rate of water hose 4 Nos	Hour	32.00	5.78	185.00
4	Sundries	LS	3.00	30.00	90.00
	Total cost of Materials			Rs:	<b>5046.27</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor 15 cmm ( ele ) Fuel / Energy charges	Hour	8.00	138.80	1110.40
2	Pump 10 hp ( ele ) Fuel / Energy charges	Hour	8.00	700.50	5604.00
3	Jack hammer Fuel / Energy charges	Hour	4.00	6.70	26.80
4	Pusher leg Fuel / Energy charges	Hour	4.00	56.00	224.00
5	Drilling jumbo Fuel / Energy charges	Hour	32.00	19.80	633.60
6	Sundries	Hour	32.00	0.00	0.00
	Total hire charges of Machinery	LS	5.00	12.70	406.40
				Rs:	<b>11444.80</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew charges for Air compressor	Hour	8.00	175.80	1406.40
2	Crew charges for Pump	Hour	4.00	83.30	333.20
3	Crew charges for Jack Hammer	Hour	32.00	329.60	10547.20
4	Crew charges for Drilling Jumbo	Hour	8.00	175.80	1406.40
5	mazdoor	Day	2.00	350.00	700.00
	Total cost of Labour			Rs:	<b>14393.20</b>

labour component/unit qty

143.90

Add contractor's profit and overhead charges	13.615%	<u>19.60</u>	
labour component/unit qty (including contractor's profit)		<u><b>163.50</b></u>	

**ABSTRACT:**

A. Cost of Materials		Rs: 5046.27
B. Hire charges of Machinery		Rs: 11444.80
C. Cost of Labour		Rs: 14393.20
	Total	Rs: 30884.27
Add for Air and Water line @	1.00%	Rs: 308.84
Add for Ventilation @	4.50%	Rs: 1389.79
Add for Lighting @	1.60%	Rs: 494.15
Add for Ele sub-station / Demand charges @	2.50%	Rs: 772.11
	Total	Rs: 33849.16
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615%	Rs: 4608.56
Total cost for	100.00 Rm	Rs: 38457.72
<b>Rate per Rm</b>	(A+B+C+D)/100.0	Rs: 384.60

**IRR-TAW-6-2 Grouting cement slurry in grout holes** under specified pressure for consolidation / contact grouting including cost of all materials, machinery, labour, redrilling wherever necessary, ventilation, lighting, drainage and other ancillary operations etc., complete **with lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**1.50 tonne****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	tonne	1.50	5350.00	8025.00
2	Use rate of grouting hose 50 m	Hour	8.00	11.56	92.50
3	Use rate of water hose 50 m	Hour	8.00	11.56	92.50
4	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>8270.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Grouting machine	Hour	8.00	24.90	199.20
	Fuel / Energy charges	Hour	8.00	28.00	224.00
2	Pump 10 hp ( ele )	Hour	2.00	6.70	13.40
	Fuel / Energy charges	Hour	2.00	56.00	112.00
3	Drilling jumbo	Hour	2.00	368.40	736.80
	Fuel / Energy charges	Hour	2.00	42.80	85.60
4	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>1431.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Grout pump	Hour	8.00	263.60	2108.80
2	Crew for pump	Hour	2.00	83.30	166.60
3	Crew for Drilling jumbo	Hour	2.00	175.80	351.60
4	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	<b>3327.00</b>

labour component/unit qty

Add contractor's profit and overhead charges

labour component/unit qty (including contractor's profit)

**2520.00****ABSTRACT:**

A. Cost of Materials		Rs: 8270.00
B. Hire charges of Machinery		Rs: 1431.00
C. Cost of Labour		Rs: 3327.00
	Total	Rs: 13028.00
Add for Air and Water line @	1.00%	Rs: 130.28
Add for Ventilation @	4.50%	Rs: 586.26
Add for Lighting @	1.60%	Rs: 208.45
Add for Ele sub-station / Demand charges @	2.50%	Rs: 325.70
	Total	Rs: 14278.69
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615%	Rs: 1944.04

Total cost for <b>Rate per tonne</b>	1.50 tonne (A+B+C+D)/1.50	<b>Rs: 16222.73</b> <b>Rs: 10815.20</b>
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**IRR-TAW-6-3 Drilling 75 mm diameter drainage holes vertical or inclined in rock / concrete** in tunnel by percussion drilling using wagon drill or other suitable drilling equipment including cost of all materials, machinery, labour, ventilation, lighting, drainage etc., complete.

DATA

**RATE ANALYSIS****UNIT : 120.00 Rm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of cross bit 75 mm dia	Rm	120.00	125.00	15000.00
2	Use rate of air hose 20 m	Hour	16.00	4.63	74.00
3	Use rate of water hose 20 m	Hour	16.00	4.63	74.00
4	Use rate of extension rods	Rm	120.00	8.48	1017.60
Total cost of Materials				Rs:	<b>16165.60</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Waggon drill	Hour	16.00	188.50	3016.00
	Fuel / Energy charges	Hour	16.00	0.00	0.00
2	Air compressor 15 cmm ( ele )	Hour	8.00	138.80	1110.40
	Fuel / Energy charges	Hour	8.00	700.50	5604.00
3	Pump 10 hp ( ele )	Hour	6.00	6.70	40.20
	Fuel / Energy charges	Hour	6.00	56.00	336.00
4	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>10166.60</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Waggon drill	Hour	16.00	283.90	4542.40
2	Crew for Air compressor	Hour	8.00	175.80	1406.40
3	Crew for Pump	Hour	6.00	83.30	499.80
4	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	<b>7148.60</b>

labour component/unit qty 59.60

Add contractor's profit and overhead charges 13.615% 8.10

labour component/unit qty (including contractor's profit) **67.70****ABSTRACT:**

A. Cost of Materials		Rs: 16165.60
B. Hire charges of Machinery		Rs: 10166.60
C. Cost of Labour		Rs: 7148.60
	Total	Rs: 33480.80
Add for Air and Water line @	1.00%	Rs: 334.81
Add for Ventilation @	4.50%	Rs: 1506.64
Add for Lighting @	1.60%	Rs: 535.69
Add for Ele sub-station / Demand charges @	2.50%	Rs: 837.02
	Total	Rs: 36694.96
D.Add for contractor's profit and overheads on (A+B+C+other percentages)	13.615%	Rs: 4996.02
Total cost for	120.00 Rm	Rs: 41690.98
<b>Rate per Rm</b>	(A+B+C+D)/120.0	Rs: 347.40

## Chapter III

## CANAL AND ALLIED WORKS - Standard Data

(WLL BE WITH E-N-C & TO INCORPORATE CHANGES YEARLY/ AS NEEDED)  
FOR THE YEAR : 2016-17

**Index- code**

IRR-CAW

**CANAL AND ALLIED WORKS - DATA RATES****Directions to add Seigniorage Charges and Additional Lead Charges****Seigniorage Charges:**

1. The unit rate for work item in the Standard Data is **exclusive of Seigniorage Charges** wherever applicable.
2. The appropriate Seigniorage Charges for relevant materials are to be added to the Unit rate of work item while preparing the estimate. (i.e., to the data itself)
3. The Provision towards Contractor's Profit and Overhead charges **should not be operated on** the Seigniorage Charges while adding Seigniorage Charges to the data in the estimate

**Additional Lead and Lift Charges:**

1. Unless otherwise specified the basic rates are inclusive of all lifts.
2. For concrete, masonry and reinforcement items **wherever** initial lead of 1km is considered in the basic rate, the additional lead charges are to be added as follows:

Additional lead charges for Steel, sand, coarse aggregate, stones and stone chips shall be worked out for total lead involved and 1 km lead charges included in basic rate shall be deducted from total lead charges. No loading and unloading charges shall be allowed for any item.

In case of Cement and Steel, Loading and unloading charges are already added in the work item while arriving the unit rate and hence should not be added again

Example:

Total lead for sand from approved sand quarry :	15 Km
Initial lead included in the basic rate in the SR :	1 Km

Additional lead charges :	Lead charges for 5 km	Rs. 84.00
	Lead charges for next 10 km	Rs. 126
	Total lead charges for 15 km /cum	Rs. 210.00
	Less 1 km initial lead charges /cum	Rs. 31.50 (-)
	Net additional lead charges / cum	Rs. 178.50

3. The Leads for Steel shall be from the nearest market place to the Project area

4. For earth/rockfill embankments **wherever** initial lead of 1km is considered in the basic rate, the additional lead charges are to be added as follows:

Additional lead charges for Earth, Murru etc., shall be worked out for total lead involved and 1 km lead charges included in basic rate shall be deducted from total lead charges. No loading and unloading charges shall be allowed for any item. (same as above)

Example:

Total lead for earth from approved borrow area :	15 Km
Initial lead included in the basic rate in the SR :	1 Km

Additional lead charges :	Lead charges for 5 km	Rs. 84.00
	Lead charges for next 10 km	Rs. 126
	Total lead charges for 15 km /cum	Rs. 210.00
	Less 1 km initial lead charges /cum	Rs. 31.50 (-)
	Net additional lead charges / cum	Rs. 178.50

5. The initial lead up to 50 m as mentioned in some standard data items is meant for manual lead within the working area. For conveyance of materials, the lead required from quarry/Borrow area/ Dump Area to worksite shall be added to the data without deducting the 50 m initial lead charges

**CAW-Work Items****IRR-CAW-1 EXCAVATION WORKS :**

IRR-CAW-1-1 Excavation in all kinds of soil including boulders upto 0.3 m diameter for canal, seating of embankment, filter drains / catch water drains etc., including dressing bed and sides to required level and profile, cost of all materials, machinery, labour, placing the excavated soil neatly in dump area or for the formation of service road / embankment as directed etc., complete with initial lead upto 1 km and all lifts.

DATA:

**RATE ANALYSIS**UNIT : **925.00 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
2	Tippers 5 cum capacity 6 Nos	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20
Total hire charges of Machinery				Rs:	<b>56471.20</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	Crew for Tipper	Hour	48.00	177.50	8520.00
3	work inspector	Day	1.00	450.00	450.00
4	mazdoor	Day	30.00	350.00	10500.00
Total cost of Labour				Rs:	<b>21362.80</b>

labour component/unit qty

23.10

Add contractor's profit and overhead charges

13.615% 3.10

labour component/unit qty (including contractor's profit)

**26.20****ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 56471.20
C. Cost of Labour	Rs: 21362.80
Total	Rs: 77834.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	925.00 cum
Rate per cum	(A+B+C+D)/925
	Rs: 10597.1
	Rs: 88431.10
	Rs. 95.60

IRR-CAW-1-2 Excavation in all kinds of soil including boulders upto 0.30 m dia for field channels, seating of embankment for field channels etc., including dressing of bed and sides to required profile, cost of all materials, machinery, labour, placing the excavated stuff for formation of service road / embankment as directed etc., complete with lead upto 10 m and lift upto 3 m.

Excavation in all

DATA:

**RATE ANALYSIS**UNIT : **440.00 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
Total hire charges of Machinery				Rs:	<b>11832.80</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	17.00	350.00	5950.00

Total cost of Labour	Rs: <b>8292.80</b>
labour component/unit qty	18.80
Add contractor's profit and overhead charges	13.615% 2.60
labour component/unit qty (including contractor's profit)	<b>21.40</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 11832.80
C. Cost of Labour	Rs: 8292.80
	Total Rs: <u>20125.60</u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 2740.1
Total cost for 440.00 cum	Rs: <b>22865.70</b>
<b>Rate per cum</b>	Rs. <b>52.00</b>

- IRR-CAW-1-3 Excavation in **ordinary rock (including HDR)** without blasting including boulders **above 0.30 m upto 0.6 m dia.** for canals, seating of embankment, filter drain / catch water drains etc., including dressing of bed and sides to required level and profile, cost of all materials, machinery, labour, placing the excavated soft rock neatly in dump area or for formation of service road as directed etc., complete **with lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **630.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges	Hour	8.00	872.70	6981.60
2	Tippers 5 cum capacity 5 Nos	Hour	40.00	446.70	17868.00
	Fuel / Energy charges	Hour	40.00	299.90	11996.00
Total hire charges of Machinery				Rs:	<b>50498.40</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	Crew for Tipper	Hour	40.00	177.50	7100.00
3	work inspector	Day	1.00	450.00	450.00
4	Crowbarman	Day	11.00	400.00	4400.00
5	mazdoor	Day	22.00	350.00	7700.00
Total cost of Labour				Rs:	<b>21542.80</b>

labour component/unit qty	34.20
Add contractor's profit and overhead charges	13.615% 4.70
labour component/unit qty (including contractor's profit)	<b>38.90</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 50498.40
C. Cost of Labour	Rs: 21542.80
	Total Rs: <u>72041.20</u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 9808.41
Total cost for 630.00 cum	Rs: <b>81849.61</b>
<b>Rate per cum</b>	Rs. <b>129.90</b>

- IRR-CAW-1-4 Excavation in **ordinary rock (including HDR)** without blasting including boulders **above 0.3 m upto 0.60 m dia.** for field channels, seating of embankment **for field channels** etc., including dressing of bed and sides to required profile, cost of all materials, machinery, labour, placing the excavated stuff

for formation of service road as directed etc., complete **with lead upto 10 m and lift upto 3 m.**

DATA:

**RATE ANALYSIS**UNIT : **265.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shovel 0.50 cum capacity Fuel / Energy charges	Hour	8.00	1003.10	8024.80
		Hour	8.00	476.00	3808.00
Total hire charges of Machinery				Rs:	<b>11832.80</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	work inspector	Day	1.00	450.00	450.00
3	Crowbarman	Day	5.00	400.00	2000.00
4	mazdoor	Day	11.00	350.00	3850.00
Total cost of Labour				Rs:	<b>8192.80</b>

labour component/unit qty 30.90  
 Add contractor's profit and overhead charges 13.615% 4.20  
 labour component/unit qty (including contractor's profit) **35.10**

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 11832.80
C. Cost of Labour	Rs: 8192.80
Total	Rs: 20025.60
D. Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	265.00 cum
Rate per cum	(A+B+C+D)/265
	Rs: 2726.49
	Rs: 22752.09
	Rs: 85.90

IRR-CAW-1-5

Excavation in **hard rock (including F&F rock) requiring blasting** including boulders **above 0.6 m upto 1.2 m dia. for canals**, seating of embankment, filter drain / catch water drains etc., including dressing bed and sides to required level and profile, cost of all materials, machinery, labour, placing the excavated rock in dump area or for formation of service road as directed etc., complete **with lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **805.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of drill rod 1.5 m length	Rm	316.00	20.14	6364.24
	Reconditioning charges @ 10%				636.42
2	Use rate of 50 m air hose 2 Nos	Hour	24.00	11.56	277.50
3	Explosive small dia ( Kelvex-220 )	kg	161.00	70.00	11270.00
4	Ordinary detonators	Nos	12.00	7.00	84.00
5	Electric detonators	Nos	215.00	11.00	2365.00
6	Fuse coil	Rm	520.00	9.00	4680.00
7	Sundries	LS	5.00	30.00	150.00
Total cost of Materials				Rs:	<b>25827.16</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80

2	Fuel / Energy charges Tippers 5 cum capacity 5 Nos.	Hour	8.00	872.70	6981.60
	Fuel / Energy charges	Hour	40.00	446.70	17868.00
3	Air compressor 8.5 cmm ( diesel )	Hour	12.00	275.60	3307.20
	Fuel / Energy charges	Hour	12.00	892.50	10710.00
4	Jack hammers 3 Nos.	Hour	39.00	19.80	772.20
	Fuel / Energy charges	Hour	39.00	0.00	0.00
	Total hire charges of Machinery			Rs:	<b>65287.80</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	Crew for Tipper	Hour	40.00	177.50	7100.00
3	Crew for Air compressor	Hour	12.00	210.90	2530.80
4	Crew for Jack hammer	Hour	39.00	329.60	12854.40
5	work inspector	Day	1.00	450.00	450.00
6	Blaster	Day	1.00	510.00	510.00
7	Helper blaster	Day	1.00	400.00	400.00
8	Crowbarman	Day	16.00	400.00	6400.00
9	Stone breaker	Day	16.00	400.00	6400.00
10	mazdoor	Day	32.00	350.00	11200.00
	Total cost of Labour			Rs:	<b>49738.00</b>

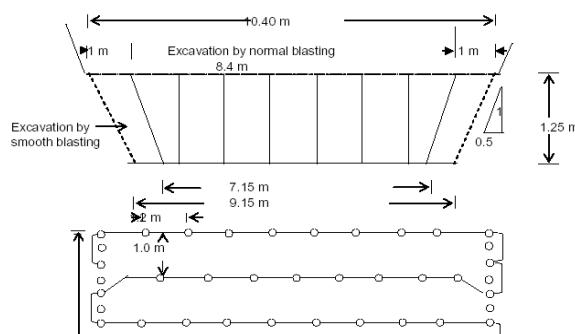
labour component/unit qty 61.80  
 Add contractor's profit and overhead charges 13.615% 8.40  
 labour component/unit qty (including contractor's profit) **70.20**

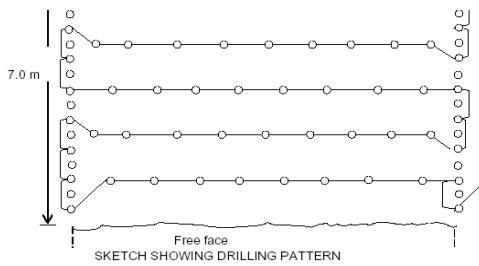
**ABSTRACT:**

A. Cost of Materials	Rs: 25827.16
B. Hire charges of Machinery	Rs: 65287.80
C. Cost of Labour	Rs: 49738.00
	Total Rs: <u>140852.96</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 19177.13
Total cost for 805.00 cum	Rs: <b>160030.09</b>
Rate per cum (A+B+C+D)/805	Rs. <b>198.80</b>

**IRR-CAW-1-6** Excavation in hard rock of all toughness by blasting including boulders above 1.2 m dia. for canals, seating of embankment, filter drain / catch water drains etc., including levelling the bed by removing all projections by hammering / chiselling, cost of all materials, machinery, labour, placing the excavated rock neatly in approved dump area and levelling the same as directed etc., complete with initial lead upto 1 km and all lifts.

Note: i ) The rate under this item shall be adopted for canals designed for carrying capacity of less than 15 cumecs or where the average depth of excavation in hard rock is less than 3 m.  
 ii ) The rate includes levelling canal bed by hammering / chiselling all rock projections wherever required.





DATA:

**RATE ANALYSIS**UNIT : **68.00 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of drill rod 1.5 m length Reconditioning charges @ 10%	Rm	85.00	26.85	2282.53
2	Use rate of 50 m air hose 2 Nos.	Hour	13.00	11.56	150.31
3	Explosive small dia. (Klevex-220 )	kg	21.20	70.00	1484.00
4	Ordinary detonators	Nos	4.00	7.00	28.00
5	Electric detonators	Nos	59.00	11.00	649.00
6	Fuse coil	Rm	90.00	9.00	810.00
7	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>5692.10</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shovel 0.85 cum capacity	Hour	1.10	1706.60	1877.26
	Fuel / energy charges	Hour	1.10	872.70	959.97
2	Angle dozer 90 hp	Hour	0.25	1715.50	428.88
	Fuel / Energy charges	Hour	0.25	610.50	152.63
3	Tippers 5 cum capacity 4 Nos.	Hour	4.40	446.70	1965.48
	Fuel / Energy charges	Hour	4.40	299.90	1319.56
4	Air compressor 8.5 cmm ( diesel ) 1 Nos	Hour	6.50	275.60	1791.40
	Fuel / Energy charges	Hour	6.50	892.50	5801.25
5	Jack hammers 2 Nos.	Hour	13.00	19.80	257.40
	Fuel / Energy charges	Hour	13.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>14553.82</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Shovel	Hour	1.10	236.60	260.26
2	Crew for Dozer	Hour	0.25	236.60	59.15
3	Crew for Tipper	Hour	4.40	177.50	781.00
4	Crew for Air compressor	Hour	6.50	210.90	1370.85
5	Crew for Jack hammer	Hour	13.00	329.60	4284.80
6	work inspector	Day	0.50	450.00	225.00
7	Blaster	Day	1.00	510.00	510.00
8	Helper blaster	Day	1.00	400.00	400.00
9	Crowbarman	Day	0.50	400.00	200.00
10	Stone breaker	Day	0.50	400.00	200.00
11	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	<b>8991.06</b>

labour component/unit qty **132.20**Add contractor's profit and overhead charges **13.615% 18.00**labour component/unit qty (including contractor's profit) **150.20****ABSTRACT:**

A. Cost of Materials  
B. Hire charges of Machinery

Rs: **5692.10**  
Rs: **14553.82**

C. Cost of Labour	Total	Rs: 8991.06
		Rs: 29236.98
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 3980.61
Total cost for	68.00 cum	Rs: 33217.59
Rate per cum	(A+B+C+D)/68	Rs. 488.50

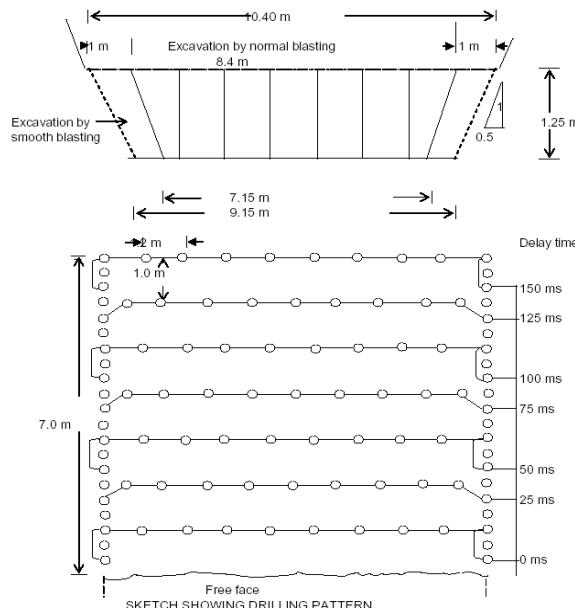
IRR-CAW-1-7

(b)

Excavation in hard rock of all toughness including boulders above 1.2 m dia. by approved controlled blasting methods for canals, cut-off trench of embankment, filter / catch-water drains etc., including controlling fly-rock by muffling arrangements such as placing 50 x 50 mm opening chain link mesh or waste tyres and sand bags, monitoring ground vibrations at specified locations, cost of all materials, machinery, labour, placing excavated rock neatly in approved dump area or other place as directed etc., complete with lead upto 1 km and all lifts.

Note:

- i ) The rate under this item shall be adopted for canals designed for carrying capacity of less than 15 cumecs or where the average depth of excavation in hard rock is less than 3 m.
- ii ) The rate under this item shall be adopted where the control of fly-rock and ground vibrations is required.



DATA

RATE ANALYSIS

UNIT : 68.00 cum

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of drill rod 1.5 m length Reconditioning charges @ 10%	Rm	85.00	26.85	2282.53
2	Use rate of 50 m air hose 2 Nos.	Hour	13.00	11.56	150.31
3	Use rate of wire mesh	sqm	94.00	58.51	5499.47
4	Use rate of sand bag	Nos	98.00	9.00	881.51
5	Explosive small dia. (Kevex-220 )	kg	21.20	70.00	1484.00
6	Ordinary detonators	Nos	4.00	7.00	28.00
7	Electric delay detonators	Nos	59.00	20.00	1180.00

8	Fuse coil	Rm	90.00	9.00	810.00
9	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>12604.08</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shovel 0.85 cum capacity	Hour	1.10	1706.60	1877.26
	Fuel / Energy charges	Hour	1.10	872.70	959.97
2	Angle dozer 90 hp	Hour	0.25	1715.50	428.88
	Fuel / Energy charges	Hour	0.25	610.50	152.63
3	Tippers 5 cum capacity 3 Nos.	Hour	4.40	446.70	1965.48
	Fuel / Energy charges	Hour	4.40	299.90	1319.56
4	Air compressor 8.5 cmm ( diesel ) 1	Hour	6.50	275.60	1791.40
	No	Hour	6.50	892.50	5801.25
5	Fuel / Energy charges	Hour	13.00	19.80	257.40
	Jack hammers 2 Nos.	Hour	13.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>14553.82</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Shovel	Hour	1.10	236.60	260.26
2	Crew for Angle dozer	Hour	0.25	236.60	59.15
3	Crew for Tipper	Hour	4.40	177.50	781.00
4	Crew for Air compressor	Hour	6.50	210.90	1370.85
5	Crew for Jack hammer	Hour	13.00	329.60	4284.80
6	work inspector	Day	0.50	450.00	225.00
7	Blaster	Day	0.50	510.00	255.00
8	Helper blaster	Day	0.50	400.00	200.00
9	Stone chiseller CI - II	Day	0.50	400.00	200.00
10	Stone breaker	Day	0.50	400.00	200.00
11	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour				Rs:	<b>8886.06</b>

labour component/unit qty 130.70  
 Add contractor's profit and overhead charges 13.615% 17.80  
 labour component/unit qty (including contractor's profit) **148.50**

**ABSTRACT:**

A. Cost of Materials	Rs: 12604.08
B. Hire charges of Machinery	Rs: 14553.82
C. Cost of Labour	Rs: 8886.06
Total	Rs: 36043.96
Add for blasting studies & monitoring vibrations etc	0.50% Rs: 180.22
Total	Rs: 36224.18
D. Add for contractor's profit and overheads on	13.615% Rs: 4931.92
Total cost for	68.00 cum Rs: 41156.10
<b>Rate per cum</b>	(A+B+C+D)/68 Rs. 605.20

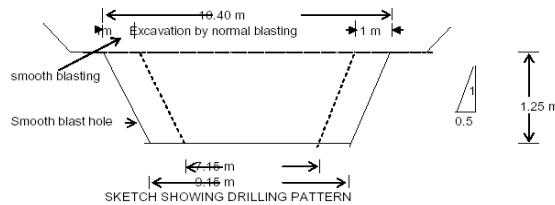
IRR-CAW-1-8 ( c ) Excavation in hard rock of all toughness including boulders above 1.2 m dia. for dressing canal sides neatly on either side to required profile by line drilling and smooth blasting including removing under-cuts by chiselling / hammering, placing the excavated rock neatly in dump area or other place as directed, cost of all materials, machinery, labour etc., complete with lead upto 1 km and all lifts.

**Note:**

- i) For excavation of canal below free board level combination of normal / controlled blasting and line drilling and smooth blasting shall be adopted to obtain neat side slopes. For the purpose of payment 1 m width of excavation on either side shall be treated as excavation by line drilling and smooth blasting and remaining portion shall be treated as excavation by normal / controlled blasting as the case may be.
- ii ) The rate under this item shall be adopted for canals designed for carrying capacity of less than 15 cumecs or where the average depth of excavation in hard rock is less than 3 m.
- iii ) The rate includes controlling fly-rock wherever required.
- iv ) The rate under this item shall be paid only on ascertaining that the excavated face has come off neatly as per specifications or atleast 50 percent of smooth blast holes are visible for

inspection and are spaced at specified interval.

v ) In case, where the above criteria is not fulfilled payment shall be restricted to rate provided for excavation by normal blasting or controlled blasting as the case may be.



## DATA

### RATE ANALYSIS

#### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of drill rod 1.5 m length Reconditioning charges @ 10%	Rm Hour	63.00 10.00	26.85 11.56	1691.76 169.18
2	Use rate of 50 m air hose 2 Nos.	Nos	10.00	11.56	115.63
3	Explosive small dia. (Klevex-220 )	kg	3.50	70.00	245.00
4	Electric delay detonators	Nos	22.00	20.00	440.00
5	Fuse coil	Rm	20.00	9.00	180.00
6	Sundries	LS	1.00	30.00	30.00
Total cost of Materials					Rs: <b>2871.56</b>

#### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shovel 0.85 cum capacity Fuel / Energy charges	Hour	0.28	1706.60	477.85
2	Tippers 5 cum capacity 4 Nos. Fuel / Energy charges	Hour	0.28	872.70	244.36
	Air compressor 8.5 cmm ( diesel ) 1 Nos	Hour	1.12	446.70	500.30
3	Fuel / Energy charges	Hour	1.12	299.90	335.89
4	Jack hammers 2 Nos. Fuel / Energy charges	Hour	5.00	275.60	1378.00
	Total hire charges of Machinery	Hour	5.00	892.50	4462.50
		Hour	10.00	19.80	198.00
		Hour	10.00	0.00	0.00
Total hire charges of Machinery					Rs: <b>7596.90</b>

#### C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Shovel	Hour	0.50	236.60	118.30
2	Crew for Tipper	Hour	1.12	177.50	198.80
3	Crew for Air compressor	Hour	5.00	210.90	1054.50
4	Crew for Jack hammer	Hour	10.00	329.60	3296.00
5	work inspector	Day	0.50	450.00	225.00
6	Blaster	Day	0.50	510.00	255.00
7	Helper blaster	Day	0.50	400.00	200.00
8	Stone breaker	Day	0.50	400.00	200.00
9	Stone chiseller CI - II	Day	0.50	400.00	200.00
10	mazdoor	Day	1.00	350.00	350.00
Total cost of Labour					Rs: <b>6097.60</b>

labour component/unit qty 348.40

Add contractor's profit and overhead charges 13.615% 47.40

labour component/unit qty (including contractor's profit) **395.80**

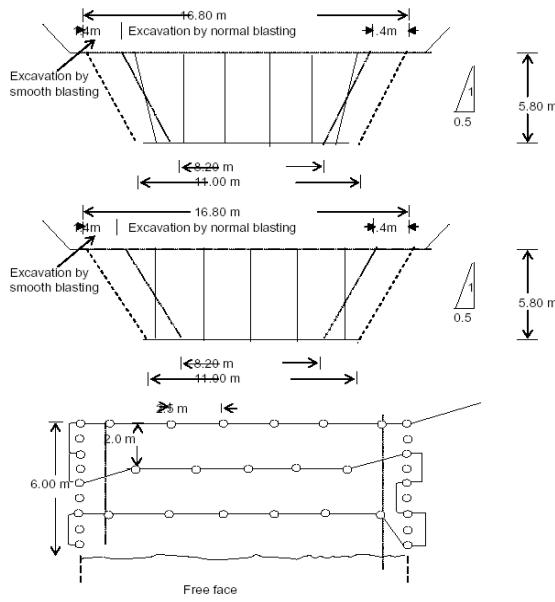
#### ABSTRACT:

A. Cost of Materials Rs: 2871.56

B. Hire charges of Machinery	Rs:	7596.90
C. Cost of Labour	Rs:	6097.60
	Total	Rs: 16566.06
Add for blasting studies & monitoring vibrations etc	0.50%	Rs: 82.83
	Total	Rs: 16648.89
D. Add for contractor's profit and overheads on	13.615%	Rs: 2266.75
Total cost for	17.50 cum	Rs: 18915.64
<b>Rate per cum</b>	(A+B+C+D)/17.50	<b>Rs. 1080.90</b>

- IRR-CAW-1-9 Excavation in hard rock by blasting including boulders above 1.2 m dia. for canals, seating embankment etc., including levelling bed by removing all projections by hammering / chiselling, cost of all materials, machinery, labour, placing the excavated rock neatly in approved dump area and levelling the same as directed etc., complete with initial lead upto 1 km and all lifts.

**Note:** i ) The rate under this item shall be adopted for canals designed for carrying capacity of more than 15 cumecs or where the average depth of excavation in hard rock is more than 3 m.  
ii ) The rate includes levelling canal bed by hammering / chiselling all rock projections wherever required.



SKETCH SHOWING DRILLING PATTERN

DATA:

**RATE ANALYSIS**Unit: **386.00 Cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of T.C bit 100 mm dia	Rm	104.00	150.00	15600.00
2	Use rate of Extension rod with coupling sleeve	Rm	104.00	6.36	661.44
3	Use rate of Jack hammer drill rod 1.5 m reconditioning charges @ 10%	Rm	12.00	26.85	322.24
4	Use rate of 50 m air hose for wagon drill	Hour	10.50	18.75	196.88
5	Use rate of 25 m air hose for JH 2 Nos	Hour	1.00	11.56	11.56
	High strength ANFO booster	kg	38.00	73.00	2774.00

6	ANFO	kg	155.00	48.00	7440.00
7	Diesel oil	ltr	35.00	57.70	2019.50
8	Explosive small dia ( Kelvex-220 )	kg	4.00	70.00	280.00
9	Ordinary detonators	Nos	20.00	7.00	140.00
10	D-cord	Rm	145.00	8.00	1160.00
11	Detonating fuse coil	Rm	20.00	9.00	180.00
12	Sundries	LS	5.00	30.00	150.00
Total cost of Materials				Rs:	<b>30967.84</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tippers 5 cum capacity Fuel / Energy charges	Hour	24.84	446.70	11096.03
2	Shovel 0.85 cum capacity Fuel / Energy charges	Hour	24.84	299.90	7449.52
3	Angle dozer Fuel / Energy charges	Hour	6.21	1706.60	10597.99
4	Air compressor 8.5 cmm ( diesel ) Fuel / Energy charges	Hour	6.21	872.70	5419.47
5	Waggon drill Fuel / Energy charges	Hour	2.00	1715.50	3431.00
6	Jack hammer Fuel / Energy charges	Hour	2.00	610.50	1221.00
Total hire charges of Machinery				Rs:	<b>54667.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Tipper	Hour	24.84	177.50	4409.10
2	Crew for Shovel	Hour	6.21	236.60	1469.29
3	Crew for Dozer	Hour	2.00	236.60	473.20
4	Crew for Air compressor	Hour	11.50	210.90	2425.35
5	Crew for Waggon drill	Hour	10.50	283.90	2980.95
6	Crew for Jack hammer	Hour	2.00	329.60	659.20
7	work inspector	Day	2.00	450.00	900.00
8	Blaster	Day	1.00	510.00	510.00
9	Helper blaster	Day	1.00	400.00	400.00
10	Stone chiseller Cl - II	Day	1.00	400.00	400.00
11	Stone breaker	Day	1.00	400.00	400.00
12	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour				Rs:	<b>16077.09</b>

labour component/unit qty

41.70

Add contractor's profit and overhead charges

13.615% 5.70

labour component/unit qty (including contractor's profit)

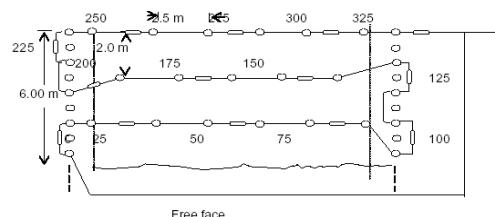
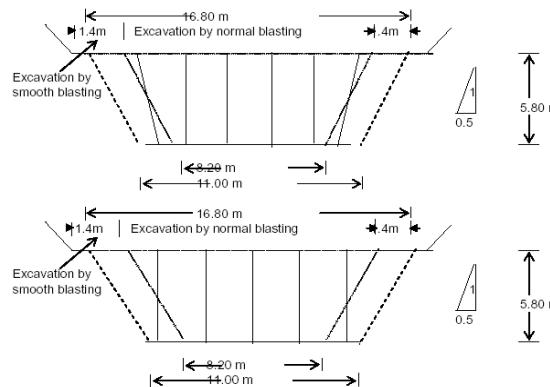
**47.40****ABSTRACT:**

A. Cost of Materials	Rs:	30967.84
B. Hire charges of Machinery	Rs:	54667.00
C. Cost of Labour	Rs:	16077.09
Total	Rs:	<b>101711.92</b>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 13848.08
Total cost for	386.00 Cum	Rs: <b>115560.00</b>
<b>Rate per</b>	<b>Cum</b>	<b>Rs. 299.40</b>
(A+B+C+D)/386		

- IRR-CAW-1-10 Excavation in hard rock of all toughness including boulders above 1.2 m dia. by approved controlled blasting methods for canals, cut-off trench of embankment etc., including controlling fly-rock by muffling arrangements such as placing 50 x 50 mm opening chain link mesh or waste tyres and sand bags, monitoring ground vibrations at specified locations, cost of all materials, machinery, labour, placing excavated rock neatly in approved dump area or other place as directed etc., complete with lead upto 1 km and all lifts.

**Note:**

- i ) The rate under this item shall be adopted for canals designed for carrying capacity of more than 15 cumecs or where the average depth of excavation in hard rock is more than 3 m.  
ii ) The rate under this item shall be adopted where the control of fly-rock and ground vibrations is required.



SKETCH SHOWING DRILLING PATTERN

**DATA****RATE ANALYSIS**

UNIT : **386.00** cum

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of T.C bit 100 mm dia	Rm	104.00	150.00	15600.00
2	Use rate of Extension rod with coupling sleeve	Rm	104.00	6.36	661.44
3	Use rate of Jack hammer drill rod 1.6 m	Rm	12.00	26.85	322.24
	reconditioning charges @ 10%				32.22
4	Use rate of 50 m air hose 50 mm 1 No.	Hour	10.50	18.75	196.88
	Use rate of 25 mm air hose 2 Nos	Hour	2.00	11.56	23.13
5	High strength ANFO booster	kg	38.00	73.00	2774.00
6	ANFO	kg	155.00	48.00	7440.00
7	Diesel oil	ltr	35.00	57.70	2019.50
8	Explosive small dia ( Kelvex-220 )	kg	4.00	70.00	280.00
9	Ordinary detonators	Nos	20.00	7.00	140.00
10	Shock tube detonators	Rm	120.00	40.00	4800.00
11	Noiseless trunk line delays	Nos	12.00	19.00	228.00
12	Detonating fuse coil	Rm	20.00	9.00	180.00
13	Use rate of chain link wire mesh	sqm	132.00	211.50	27918.00
14	Use rate of sand bag	Nos	110.00	5.00	549.45
15	Sundries	LS	20.00	30.00	600.00
Total cost of Materials				Rs:	<b>63764.85</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate	Amount

				in Rs.	in Rs.
1	Tippers 5 cum capacity	Hour	30.00	446.70	13401.00
	Fuel / Energy charges	Hour	30.00	299.90	8997.00
2	Shovel 0.85 cum capacity	Hour	10.00	1706.60	17066.00
	Fuel / Energy charges	Hour	10.00	872.70	8727.00
3	Angle dozer	Hour	2.00	1715.50	3431.00
	Fuel / Energy charges	Hour	2.00	610.50	1221.00
4	Air compressor 8.5 cmm ( diesel )	Hour	12.50	275.60	3445.00
	Fuel / Energy charges	Hour	12.50	892.50	11156.25
5	Waggon drill	Hour	11.50	188.50	2167.75
	Fuel / Energy charges	Hour	11.50	0.00	0.00
6	Jack hammer	Hour	2.00	19.80	39.60
	Fuel / Energy charges	Hour	2.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>69651.60</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Tipper	Hour	30.00	177.50	5325.00
2	Crew for Shovel	Hour	10.00	236.60	2366.00
3	Crew for Dozer	Hour	2.00	236.60	473.20
4	Crew for Air compressor	Hour	12.50	210.90	2636.25
5	Crew for Waggon drill	Hour	11.50	283.90	3264.85
6	Crew for Jack hammer	Hour	2.00	329.60	659.20
7	work inspector	Day	1.50	450.00	675.00
8	Blaster	Day	0.50	510.00	255.00
9	Helper blaster	Day	0.50	400.00	200.00
10	Stone chiseller Cl - II	Day	1.00	400.00	400.00
11	Stone breaker	Day	1.00	400.00	400.00
12	mazdoor	Day	5.00	350.00	1750.00
Total cost of Labour				Rs:	<b>18404.50</b>

labour component/unit qty                                  47.70  
 Add contractor's profit and overhead charges      13.615% 6.50  
 labour component/unit qty (including contractor's profit)      **54.20**

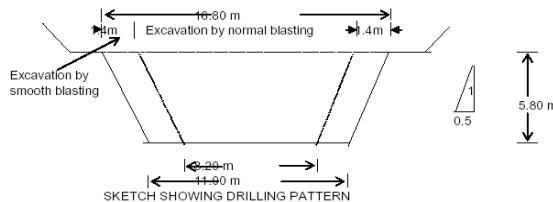
**ABSTRACT:**

A. Cost of Materials	Rs: 63764.85
B. Hire charges of Machinery	Rs: 69651.60
C. Cost of Labour	Rs: 18404.50
	Total    Rs: 151820.95
Add for blasting studies & monitoring vibrations etc	0.50%    Rs: 759.10
	Total    Rs: 152580.06
D. Add for contractor's profit and overheads on	13.615%    Rs: 20773.78
Total cost for	386.00 cum    Rs: 173353.84
Rate per        cum	(A+B+C+D)/386                                    Rs. 449.10

IRR-CAW-1-11 Excavation in hard rock of all toughness including boulders above 1.2 m dia. for dressing  
 ( c ) canal sides neatly on either side to required profile by line drilling and smooth blasting  
 including removing under-cuts by chiselling / hammering, placing the excavated rock neatly in dump area or other place as directed, cost of all materials, machinery, labour etc., complete with lead upto 1 km and all lifts.

- Note:**
- i ) For excavation of canal below free board level combination of normal / controlled blasting and line drilling and smooth blasting shall be adopted to obtain neat side slopes. For the purpose of payment 1 m width of excavation on either side shall be treated as excavation by line drilling and smooth blasting and remaining portion shall be treated as excavation by normal / controlled blasting as the case may be.
  - ii ) The rate under this item shall be adopted for canals designed for carrying capacity of more than 15 cumecs or where the average depth of excavation in hard rock is more than 3 m.
  - iii ) The rate includes controlling fly-rock wherever required.
  - iv ) The rate under this item shall be paid only on ascertaining that the excavated face has come off neatly as per specifications or atleast 50 percent of smooth blast holes are visible for inspection and are spaced at specified interval.
  - v ) In case, where the above criteria is not fulfilled payment shall be restricted to rate provided

for excavation by normal blasting or controlled blasting as the case may be.



## DATA

## RATE ANALYSIS

UNIT : **97.00** cum**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of T.C bit 100 mm dia	Rm	121.00	150.00	18150.00
2	Use rate of Extension rod with coupling sleeve	Rm	121.00	6.36	769.56
3	Use rate of Jack hammer drill rod 1.6 m	Rm	3.00	26.85	80.56
	reconditioning charges @ 10%				8.06
4	Use rate of 50 m air hose 50 mm 1 No.	Hour	12.00	18.75	225.00
	Use rate of 25 mm air hose 2 Nos	Hour	0.50	11.56	5.78
5	High strength ANFO booster	kg	5.00	73.00	365.00
6	ANFO	kg	19.00	48.00	912.00
7	Diesel oil	Ltr	4.50	57.70	259.65
8	Explosive small dia ( Kelvex-220 )	kg	1.00	70.00	70.00
9	Ordinary detonators	Nos	5.00	7.00	35.00
10	Detonating shock tube	Rm	70.00	40.00	2800.00
11	Noiseless trunk line delays	Nos	4.00	19.00	76.00
12	Fuse coil	Rm	10.00	9.00	90.00
13	Sundries	LS	2.00	30.00	60.00
Total cost of Materials					Rs: <b>23906.61</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tippers 5 cum capacity	Hour	6.24	446.70	2787.41
	Fuel / Energy charges	Hour	6.24	299.90	1871.38
2	Shovel 0.85 cum capacity	Hour	1.56	1706.60	2662.30
	Fuel / Energy charges	Hour	1.56	872.70	1361.41
3	Angle dozer	Hour	0.50	1715.50	857.75
	Fuel / Energy charges	Hour	0.50	610.50	305.25
4	Air compressor 8.5 cmm ( diesel )	Hour	13.45	275.60	3706.82
	Fuel / Energy charges	Hour	13.45	892.50	12004.13
5	Waggon drill	Hour	13.20	188.50	2488.20
	Fuel / Energy charges	Hour	13.20	0.00	0.00
6	Jack hammer	Hour	0.50	19.80	9.90
	Fuel / Energy charges	Hour	0.50	0.00	0.00
Total hire charges of Machinery					Rs: <b>28054.54</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Tipper	Hour	5.24	177.50	930.10
2	Crew for Shovel	Hour	1.56	236.60	369.10

3	Crew for Dozer	Hour	0.50	236.60	118.30
4	Crew for Air compressor	Hour	13.45	210.90	2836.61
5	Crew for Waggon drill	Hour	13.45	283.90	3818.46
6	Crew for Jack hammer	Hour	0.50	329.60	164.80
7	work inspector	Day	0.50	450.00	225.00
8	Blaster	Day	0.50	510.00	255.00
9	Helper blaster	Day	0.50	400.00	200.00
10	Stone breaker	Day	1.00	400.00	400.00
11	Stone chiseller Cl- II	Day	1.00	400.00	400.00
12	mazdoor	Day	2.00	350.00	700.00
<b>Total cost of Labour</b>				<b>Rs:</b>	<b>10417.36</b>
labour component/unit qty				107.40	
Add contractor's profit and overhead charges				13.615%	14.60
labour component/unit qty (including contractor's profit)					<b>122.00</b>

**ABSTRACT:**

A. Cost of Materials	Rs:	23906.61
B. Hire charges of Machinery	Rs:	28054.54
C. Cost of Labour	Rs:	<u>10417.36</u>
	Total	Rs: <u>62378.50</u>
Add for blasting studies & monitoring vibrations etc	0.50%	Rs: <u>311.89</u>
	Total	Rs: <u>62690.39</u>
D. Add for contractor's profit and overheads on	13.615%	Rs: <u>8535.3</u>
Total cost for	97.00 cum	Rs: <b>71225.69</b>
Rate per cum	(A+B+C+D)/97	Rs. <b>734.30</b>

**IRR-CAW-2 EMBANKMENT WORKS USING BORROW AREA SOIL :**

IRR-CAW-2-1 **Providing impervious hearting embankment** with selected soil from **approved borrow areas** in **layers of 25 cm** before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, **watering**, compacting each layer to density control of **not less than 98 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **412.80** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
Total cost of Materials				<b>Rs:</b>	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer	Hour	3.40	1715.50	5832.70
	Fuel / Energy charges	Hour	3.40	610.50	2075.70
2	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5.00 cum capacity 4 Nos.	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Pump 5 hp ( diesel )	Hour	2.00	10.20	20.40
	Fuel / Energy charges	Hour	2.00	79.30	158.60
5	Water tanker 8000 ltr	Hour	4.00	402.50	1610.00
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
6	Vibratory Roller 8 tonne	Hour	5.10	1342.20	6845.22
	Fuel / Energy charges	Hour	5.10	1031.40	5260.14
7	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery				<b>Rs:</b>	<b>58876.36</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.40	236.60	804.44

2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	32.00	177.50	5680.00
4	Crew for Pump	Hour	2.00	111.10	222.20
5	Crew for Water tanker	Hour	4.00	177.50	710.00
6	Crew for Roller	Hour	5.10	263.60	1344.36
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>12953.80</b>

labour component/unit qty 31.40  
 Add contractor's profit and overhead charges 13.615% 4.30  
 labour component/unit qty (including contractor's profit) **35.70**

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 58876.36
C. Cost of Labour	Rs: <b>12953.80</b>
Total	Rs: <b>71830.16</b>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 9779.68
Total cost for	412.80 cum Rs: <b>81609.84</b>
Rate per cum	(A+B+C+D)/412.80 Rs. <b>197.70</b>

IRR-CAW-2-2 **Providing impervious hearting embankment** with selected soil from **approved borrow areas** in **layers of 25 cm** before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, **watering**, compacting each layer to density control of **not less than 95 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

RATE ANALYSIS

UNIT : **412.80** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.40	1715.50	5832.70
	Fuel / Energy charges	Hour	3.40	610.50	2075.70
2	Shovel 0.5 cum	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5 cum	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Pump 5 hp ( diesel )	Hour	2.00	10.20	20.40
	Fuel / Energy charges	Hour	2.00	79.30	158.60
5	Water tanker 8000 ltr	Hour	4.00	402.50	1610.00
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
6	Vibratory Roller 8 tonne	Hour	4.18	1342.20	5610.40
	Fuel / Energy charges	Hour	4.18	1031.40	4311.25
7	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>56692.65</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.40	236.60	804.44
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	32.00	177.50	5680.00
4	Crew for Pump	Hour	2.00	111.10	222.20
5	Crew for Water tanker	Hour	4.00	177.50	710.00
6	Crew for Roller	Hour	4.18	263.60	1101.85

7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>12711.29</b>
labour component/unit qty				30.80	
Add contractor's profit and overhead charges				13.615%	4.20
labour component/unit qty (including contractor's profit)					<b>35.00</b>

**ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	56692.65
C. Cost of Labour	Rs:	12711.29
	Total	Rs: <u>69403.94</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 9449.35
Total cost for	412.80 cum	Rs: <b>78853.29</b>
Rate per cum	(A+B+C+D)/412.80	Rs. <b>191.00</b>

IRR-CAW-2-3 **Providing semi-pervious / pervious casing embankment** using soil from **approved borrow area** in **layers of 25 cm** before compaction including cost of all materials, machinery, labour, all operations such as excavation, sortingout, transporting, spreading in layer of specified thickness, breaking clods, sectioning, **watering**, compacting to density control of **not less than 98 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **412.80 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	0.00 0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.40	1715.50	5832.70
	Fuel / Energy charges	Hour	3.40	610.50	2075.70
2	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5.00 cum capacity 3 Nos.	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Pump 5 hp ( diesel )	Hour	2.00	10.20	20.40
	Fuel / Energy charges	Hour	2.00	79.30	158.60
5	Water tanker 8000 ltr	Hour	4.00	402.50	1610.00
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
6	Vibratory Roller 8 tonne	Hour	5.10	1342.20	6845.22
	Fuel / Energy charges	Hour	5.10	1031.40	5260.14
7	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>58786.36</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.40	236.60	804.44
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	32.00	177.50	5680.00
4	Crew for Pump	Hour	2.00	111.10	222.20
5	Crew for Water tanker	Hour	4.00	177.50	710.00
6	Crew for Roller	Hour	5.10	263.60	1344.36
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>12953.80</b>

labour component/unit qty **31.40**Add contractor's profit and overhead charges **13.615% 4.30**

labour component/unit qty (including contractor's profit)	<u><b>35.70</b></u>
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**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 58786.36
C. Cost of Labour	Rs: 12953.80
Total	<u>Rs: 71740.16</u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 9767.42
Total cost for 412.80 cum	<b>Rs: 81507.58</b>
<b>Rate per cum</b>	<b>(A+B+C+D)/412.80 Rs. 197.50</b>

IRR-CAW-2-4 **Providing semi-pervious / pervious casing embankment** using soil from **approved borrow area** in **layers of 25cm** before compaction including cost of all materials, machinery, labour, all operations such as excavation, sortingout, transporting, spreading in layer of specified thickness, breaking clods, sectioning, **watering**, compacting to density control of **not less than 95 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **412.80 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.40	1715.50	5832.70
	Fuel / Energy charges	Hour	3.40	610.50	2075.70
2	Shovel 0.5 cum	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5 cum	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Pump 5 hp ( diesel )	Hour	2.00	10.20	20.40
	Fuel / Energy charges	Hour	2.00	79.30	158.60
5	Water tanker 8000 ltr	Hour	4.00	402.50	1610.00
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
6	Vibratory Roller 8 tonne	Hour	4.17	1342.20	5596.97
	Fuel / Energy charges	Hour	4.17	1031.40	4300.94
7	Sundries	LS	5.00	30.00	150.00
	Total hire charges of Machinery			Rs:	<b>56668.91</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.40	236.60	804.44
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	32.00	177.50	5680.00
4	Crew for Pump	Hour	2.00	111.10	222.20
5	Crew for Water tanker	Hour	4.00	177.50	710.00
6	Crew for Roller	Hour	4.00	263.60	1054.40
7	work inspector	Day	4.17	450.00	1876.50
8	mazdoor	Day	4.00	350.00	1400.00
	Total cost of Labour			Rs:	<b>13640.34</b>

labour component/unit qty	33.00
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Add contractor's profit and overhead charges	13.615% 4.50
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labour component/unit qty (including contractor's profit)	<u><b>37.50</b></u>
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**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 56668.91
C. Cost of Labour	Rs: 13640.34

		Total	Rs: <u>70309.25</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: <u>9572.6</u>	
Total cost for	412.80 cum	Rs: <u>79881.85</u>	
<b>Rate per cum</b>	$(A+B+C+D)/412.80$	Rs. <u>193.50</u>	

IRR-CAW-2-5 **Providing semi-pervious / pervious casing embankment** using soil from **approved borrow area in layers of 25cm** before compaction including cost of all materials, machinery, labour, all operations such as excavation, sortingout, transporting, spreading in layer of specified thickness, breaking clods, sectioning, compacting each layer **without watering** to density control of **not less than 95 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **412.80 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.40	1715.50	5832.70
	Fuel / Energy charges	Hour	3.40	610.50	2075.70
2	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5.00 cum capacity 3 Nos.	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Vibratory Roller 8 tonne	Hour	4.17	1342.20	5596.97
	Fuel / Energy charges	Hour	4.17	1031.40	4300.94
5	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>53590.31</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.40	236.60	804.44
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	32.00	177.50	5680.00
4	Crew for Roller	Hour	4.17	263.60	1099.21
5	work inspector	Day	2.00	450.00	900.00
6	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>11776.45</b>

labour component/unit qty

28.50

Add contractor's profit and overhead charges

13.615% 3.90

labour component/unit qty (including contractor's profit)

**32.40****ABSTRACT:**

A. Cost of Materials	Rs: <u>0.00</u>
B. Hire charges of Machinery	Rs: <u>53590.31</u>
C. Cost of Labour	Rs: <u>11776.45</u>
<b>Total</b>	<b>Rs: <u>65366.76</u></b>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: <u>8899.68</u>
Total cost for	412.80 cum	Rs: <u>74266.44</u>
<b>Rate per cum</b>	$(A+B+C+D)/412.80$	Rs. <u>179.90</u>

IRR-CAW-2-6 **Providing hearting / casing embankment with homogeneous soil from approved borrow areas in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, **watering**, compacting each layer to density**

control of **not less than 98 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **677.28 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer	Hour	6.06	1715.50	10395.93
	Fuel / Energy charges	Hour	6.06	610.50	3699.63
2	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5.00 cum capacity 6 Nos.	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20
4	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
	Fuel / Energy charges	Hour	3.00	79.30	237.90
5	Water tanker 8000 ltr	Hour	6.00	402.50	2415.00
	Fuel / Energy charges	Hour	6.00	299.90	1799.40
6	Vibratory Roller 8 tonne	Hour	7.53	1342.20	10106.77
	Fuel / Energy charges	Hour	7.53	1031.40	7766.44
7	Sundries	LS	2.00	30.00	60.00
	Total hire charges of Machinery			Rs:	<b>84181.27</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	6.06	236.60	1433.80
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Pump	Hour	3.00	111.10	333.30
5	Crew for Water tanker	Hour	6.00	177.50	1065.00
6	Crew for Roller	Hour	7.53	263.60	1984.91
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
	Total cost of Labour			Rs:	<b>17529.80</b>

labour component/unit qty 25.90

Add contractor's profit and overhead charges 13.615% 3.50

labour component/unit qty (including contractor's profit) **29.40****ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 84181.27
C. Cost of Labour	Rs: 17529.80
	Total Rs: 101711.07
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 13847.96
Total cost for 677.28 cum	Rs: 115559.03
<b>Rate per cum</b>	<b>(A+B+C+D)/677.28</b> Rs. 170.60

IRR-CAW-2-7

**Providing hearting / casing embankment with homogeneous soil from approved borrow areas in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, watering, compacting each layer to density control of **not less than 95 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.****

DATA:

**RATE ANALYSIS**UNIT : **677.28 cum**

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	0.00 0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	6.06	1715.50	10395.93
	Fuel / Energy charges	Hour	6.06	610.50	3699.63
2	Shovel 0.5 cum	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5 cum 3 Nos	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20
4	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
	Fuel / Energy charges	Hour	3.00	79.30	237.90
5	Water tanker 8000 ltr	Hour	6.00	402.50	2415.00
	Fuel / Energy charges	Hour	6.00	299.90	1799.40
6	Vibratory Roller 8 tonne	Hour	6.16	1342.20	8267.95
	Fuel / Energy charges	Hour	6.16	1031.40	6353.42
7	Sundries	LS	5.00	30.00	150.00
	Total hire charges of Machinery			Rs:	<b>81019.44</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	6.06	236.60	1433.80
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Pump	Hour	3.00	111.10	333.30
5	Crew for Water tanker	Hour	6.00	177.50	1065.00
6	Crew for Roller	Hour	6.16	263.60	1623.78
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
	Total cost of Labour			Rs:	<b>17168.67</b>

labour component/unit qty 25.30

Add contractor's profit and overhead charges 13.615% 3.40

labour component/unit qty (including contractor's profit) **28.70****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	81019.44
C. Cost of Labour	Rs:	17168.67
	Total	Rs: 98188.11
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 13368.31
Total cost for	677.28 cum	Rs: 111556.42
Rate per cum	(A+B+C+D)/677.28	Rs. 164.70

IRR-CAW-2-8 **Providing casing embankment using homogeneous soil from approved borrow area in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sortingout, transporting, spreading in layer of specified thickness, breaking clods, sectioning, compacting each layer without watering to density control of not less than 95 percent or as stipulated by Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **677.28 cum****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	0.00 0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	6.06	1715.50	10395.93
	Fuel / Energy charges	Hour	6.06	610.50	3699.63
2	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5.00 cum capacity 4 Nos.	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20
4	Vibratory Roller 8 tonne	Hour	6.16	1342.20	8267.95
	Fuel / Energy charges	Hour	6.16	1031.40	6353.42
5	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs: <b>76446.54</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	6.06	236.60	1433.80
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Roller	Hour	6.16	263.60	1623.78
5	work inspector	Day	2.00	450.00	900.00
6	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour					Rs: <b>15770.37</b>

labour component/unit qty 23.30  
 Add contractor's profit and overhead charges 13.615% 3.20  
 labour component/unit qty (including contractor's profit) **26.50**

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 76446.54
C. Cost of Labour	Rs: 15770.37
Total	Rs: <u>92216.91</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	677.28 cum
Rate per cum	(A+B+C+D)/677.28

**IRR-CAW-3 EMBANKMENT WORKS USING DUMP AREA SOIL :**

**IRR-CAW-3-1 Providing impervious hearting embankment with soil from approved dump areas in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as re-excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, watering, compacting each layer to achieve density control of not less than 98 percent or as stipulated by Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **735.36** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials					Rs: <b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer	Hour	4.04	1715.50	6930.62
	Fuel / Energy charges	Hour	4.04	610.50	2466.42
2	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5.00 cum capacity 6 Nos.	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20

4	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
	Fuel / Energy charges	Hour	3.00	79.30	237.90
5	Water tanker 8000 ltr	Hour	6.00	402.50	2415.00
	Fuel / Energy charges	Hour	6.00	299.90	1799.40
6	Vibratory Roller 8 tonne	Hour	7.50	1342.20	10066.50
	Fuel / Energy charges	Hour	7.50	1031.40	7735.50
7	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>79411.54</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.58	236.60	847.03
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Pump	Hour	3.00	111.10	333.30
5	Crew for Water tanker	Hour	6.00	177.50	1065.00
6	Crew for Roller	Hour	7.50	263.60	1977.00
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour				Rs:	<b>17635.13</b>

labour component/unit qty 24.00

Add contractor's profit and overhead charges 13.615% 3.30

labour component/unit qty (including contractor's profit) **27.30****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	79411.54
C. Cost of Labour	Rs:	<u>17635.13</u>
	Total	Rs: <u>97046.67</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 13212.9
Total cost for	735.36 cum	Rs: <b>110259.57</b>
<b>Rate per cum</b>	(A+B+C+D)/735.36	Rs. <b>149.90</b>

IRR-CAW-3-2

**Providing impervious hearting embankment with soil from approved dump areas in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as re-excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, watering, compacting each layer to achieve density control of not less than 95 percent or as stipulated by Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT : 735.36 cum

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	4.04	1715.50	6930.62
	Fuel / Energy charges	Hour	4.04	610.50	2466.42
2	Shovel 0.5 cum	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5 cum	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20
4	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
	Fuel / Energy charges	Hour	3.00	79.30	237.90
5	Water tanker 8000 ltr	Hour	6.00	402.50	2415.00
	Fuel / Energy charges	Hour	6.00	299.90	1799.40
6	Vibratory Roller 8 tonne	Hour	6.13	1342.20	8227.69
	Fuel / Energy charges	Hour	6.13	1031.40	6322.48

7	Sundries	LS	5.00	30.00	150.00
	Total hire charges of Machinery			Rs:	<b>76249.71</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	4.04	236.60	955.86
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Pump	Hour	3.00	111.10	333.30
5	Crew for Water tanker	Hour	6.00	177.50	1065.00
6	Crew for Roller	Hour	6.13	263.60	1615.87
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour				Rs:	<b>17382.83</b>

labour component/unit qty 23.60

Add contractor's profit and overhead charges 13.615% 3.20

labour component/unit qty (including contractor's profit) **26.80****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	76249.71
C. Cost of Labour	Rs:	17382.83
	Total	Rs: 93632.54
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 12748.07
Total cost for	735.36 cum	Rs: <b>106380.61</b>
Rate per cum	(A+B+C+D)/735.36	Rs. <b>144.70</b>

IRR-CAW-3-3 **Providing semi-pervious / pervious casing embankment using soil from approved dump area in layers of 25 cm before compaction including cost of all materials, machinery, labour, all operations such as re-excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, watering, compacting each layer to density control of not less than 98 percent or as stipulated by Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **768.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	4.22	1715.50	7239.41
	Fuel / Energy charges	Hour	4.22	610.50	2576.31
2	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5.00 cum capacity 6 Nos	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20
4	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
	Fuel / Energy charges	Hour	3.00	79.30	237.90
5	Water tanker 8000 ltr	Hour	6.00	402.50	2415.00
	Fuel / Energy charges	Hour	6.00	299.90	1799.40
6	Vibratory Roller 8 tonne	Hour	7.82	1342.20	10496.00
	Fuel / Energy charges	Hour	7.82	1031.40	8065.55
7	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>80589.77</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	Crew for Dozer	Hour	4.22	236.60	998.45
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Pump	Hour	3.00	111.10	333.30
5	Crew for Water tanker	Hour	6.00	177.50	1065.00
6	Crew for Roller	Hour	7.82	263.60	2061.35
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour				Rs:	<b>17870.90</b>

labour component/unit qty 23.30  
 Add contractor's profit and overhead charges 13.615% 3.20  
 labour component/unit qty (including contractor's profit) **26.50**

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 80589.77
C. Cost of Labour	Rs: <u><b>17870.90</b></u>
Total	Rs: <u><b>98460.68</b></u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	768.00 cum
Rate per cum	(A+B+C+D)/768
	Rs. <b>145.70</b>

IRR-CAW-3-4

**Providing semi-pervious / pervious casing embankment** using soil from **approved dump area** in **layers of 25 cm** before compaction including cost of all materials, machinery, labour, all operations such as re-excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, **watering**, compacting each layer to density control of **not less than 95 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

RATE ANALYSIS

UNIT : 768.00 cum

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	4.22	1715.50	7239.41
	Fuel / Energy charges	Hour	4.22	610.50	2576.31
2	Shovel 0.5 cum	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5 cum of 6 Nos	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20
4	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
	Fuel / Energy charges	Hour	3.00	79.30	237.90
5	Water tanker 8000 ltr	Hour	6.00	402.50	2415.00
	Fuel / Energy charges	Hour	6.00	299.90	1799.40
6	Vibratory Roller 8 tonne	Hour	6.40	1342.20	8590.08
	Fuel / Energy charges	Hour	6.40	1031.40	6600.96
7	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>77309.26</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	4.22	236.60	998.45
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Pump	Hour	3.00	111.10	333.30
5	Crew for Water tanker	Hour	6.00	177.50	1065.00

6	Crew for Roller	Hour	6.40	263.60	1687.04
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour					Rs: 17496.59

labour component/unit qty 22.80  
 Add contractor's profit and overhead charges 13.615% 3.10  
 labour component/unit qty (including contractor's profit) **25.90**

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 77309.26
C. Cost of Labour	Rs: 17496.59
Total	Rs: <u><b>94805.85</b></u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 12907.82
Total cost for 768.00 cum	Rs: <b>107713.67</b>
<b>Rate per cum</b>	Rs. <b>140.30</b>

- IRR-CAW-3-5 **Providing semi-pervious / pervious casing embankment** using soil from **approved dump area** in **layers of 25 cm** before compaction including cost of all materials, machinery, labour, all operations such as re-excavation, sorting out, transporting, spreading in layer of specified thickness, breaking clods, sectioning, compacting each layer **without watering** to density control of **not less than 95 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT : 768.00 cum

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
Total cost of Materials					Rs: <b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	4.22	1715.50	7239.41
	Fuel / Energy charges	Hour	4.22	610.50	2576.31
2	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5.00 cum capacity 6 Nos.	Hour	48.00	446.70	21441.60
	Fuel / Energy charges	Hour	48.00	299.90	14395.20
4	Vibratory Roller 8 tonne	Hour	6.40	1342.20	8590.08
	Fuel / Energy charges	Hour	6.40	1031.40	6600.96
5	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs: <b>72736.36</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	4.22	236.60	998.45
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	48.00	177.50	8520.00
4	Crew for Roller	Hour	6.40	263.60	1687.04
5	work inspector	Day	2.00	450.00	900.00
6	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour					Rs: <b>16098.29</b>

labour component/unit qty 21.00  
 Add contractor's profit and overhead charges 13.615% 2.90  
 labour component/unit qty (including contractor's profit) **23.90**

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 72736.36

C. Cost of Labour		Rs: 16098.29
	Total	Rs: 88834.65
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 12094.84
Total cost for	768.00 cum	Rs: 100929.49
Rate per cum	(A+B+C+D)/768	Rs. 131.40

**IRR-CAW-4 EMBANKMENT WORKS USING EXCAVATED SOIL :**

IRR-CAW-4-1 **Providing impervious hearting embankment with soil collected in embankment area** in heaps as part of disposal of excavated soil from canal including cost of all materials,machinery, labour, all operations such as sortingout, spreading in **layer of 25 cm** before compaction, breaking clods,sectioning, **watering** and compacting each layer to density control of **not less than 98 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with lead upto 1 km for water.**

DATA:

**RATE ANALYSIS**UNIT : **600.00 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.60	1715.50	6175.80
	Fuel / Energy charges	Hour	3.60	610.50	2197.80
2	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
	Fuel / Energy charges	Hour	3.00	79.30	237.90
3	Water tanker 8000 ltr	Hour	5.00	402.50	2012.50
	Fuel / Energy charges	Hour	5.00	299.90	1499.50
4	Vibratory Roller 8 tonne	Hour	7.30	1342.20	9798.06
	Fuel / Energy charges	Hour	7.30	1031.40	7529.22
5	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>29541.38</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.60	236.60	851.76
2	Crew for Pump	Hour	3.00	111.10	333.30
3	Crew for Water tanker	Hour	5.00	177.50	887.50
4	Crew for Roller	Hour	7.30	263.60	1924.28
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>5846.84</b>

labour component/unit qty 9.70

Add contractor's profit and overhead charges 13.615% 1.30

labour component/unit qty (including contractor's profit) **11.00****ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 29541.38
C. Cost of Labour	Rs: 5846.84
Total	Rs: 35388.22

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 4818.11
Total cost for	600.00 cum	Rs: 40206.33
Rate per cum	(A+B+C+D)/600	Rs. 67.00

IRR-CAW-4-2 **Providing impervious hearting embankment with soil collected in embankment area** in heaps as part of disposal of excavated soil from canal including cost of all materials,machinery, labour, all operations such as sortingout, spreading in **layer of 25 cm** before compaction, breaking clods,sectioning, **watering** and compacting each layer to density control of **not less**

than 95 percent or as stipulated by Sheep foot roller / Vibratory roller/  
8 to 10 tonne power roller etc., complete with lead upto 1 km for water.

DATA:

**RATE ANALYSIS**UNIT : **600.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.60	1715.50	6175.80
	Fuel / Energy charges	Hour	3.60	610.50	2197.80
2	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
	Fuel / Energy charges	Hour	3.00	79.30	237.90
3	Water tanker 8000 ltr	Hour	5.00	402.50	2012.50
	Fuel / Energy charges	Hour	5.00	299.90	1499.50
4	Vibratory Roller 8 tonne	Hour	6.06	1342.20	8133.73
	Fuel / Energy charges	Hour	6.06	1031.40	6250.28
5	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>26688.12</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.60	236.60	851.76
2	Crew for Pump	Hour	3.00	111.10	333.30
3	Crew for Water tanker	Hour	5.00	177.50	887.50
4	Crew for Roller	Hour	6.06	263.60	1597.42
5	work inspector	Day	2.00	450.00	900.00
6	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>5969.98</b>

labour component/unit qty 9.90

Add contractor's profit and overhead charges 13.615% 1.30

labour component/unit qty (including contractor's profit) **11.20****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	26688.12
C. Cost of Labour	Rs:	5969.98
Total	Rs:	<u><b>32658.09</b></u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 4446.4
Total cost for	600.00 cum	Rs: <u><b>37104.49</b></u>
Rate per cum	(A+B+C+D)/600	Rs. <u><b>61.80</b></u>

IRR-CAW-4-3

**Providing semi-pervious / pervious casing hearting embankment using soil collected in heaps in embankment area** as part of disposal of excavated soil from canal including cost of all materials, machinery, labour, all operations such as sorting-out, spreading in **layers of 25 cm** before compaction, breaking clods, sectioning, **watering** and compacting each layer to density control of **not less than 98 percent** or as stipulated by Sheep foot roller / Vibratory roller/  
8 to 10 tonne power roller etc., complete with lead upto 1 km for water.

DATA:

**RATE ANALYSIS**UNIT : **600.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.60	1715.50	6175.80
	Fuel / Energy charges	Hour	3.60	610.50	2197.80
2	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
	Fuel / Energy charges	Hour	3.00	79.30	237.90
3	Water tanker 8000 ltr	Hour	5.00	402.50	2012.50
	Fuel / Energy charges	Hour	5.00	299.90	1499.50
4	Vibratory Roller 8 tonne	Hour	7.30	1342.20	9798.06
	Fuel / Energy charges	Hour	7.30	1031.40	7529.22
5	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>29541.38</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.60	236.60	851.76
2	Crew for Pump	Hour	3.00	111.10	333.30
3	Crew for Water tanker	Hour	5.00	177.50	887.50
4	Crew for Roller	Hour	7.30	263.60	1924.28
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>5846.84</b>

labour component/unit qty

9.70

Add contractor's profit and overhead charges

13.615% 1.30

labour component/unit qty (including contractor's profit)

**11.00****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	29541.38
C. Cost of Labour	Rs:	5846.84
Total	Rs:	<u>35388.22</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 4818.11
Total cost for	600.00 cum	Rs: <b>40206.33</b>
Rate per cum	(A+B+C+D)/600	Rs. <b>67.00</b>

IRR-CAW-4-4 **Providing semi-pervious / pervious casing embankment using soil collected in heaps in embankment area** as part of disposal of excavated soil from canal including cost of all materials, machinery, labour, all operations such as sorting-out, spreading in **layers of 25 cm** before compaction, breaking clods, sectioning, **watering** and compacting each layer to density control of **not less than 95 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete with lead upto 1 km for water.**

DATA:

**RATE ANALYSIS**UNIT : **600.00** cum**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.60	1715.50	6175.80
	Fuel / Energy charges	Hour	3.60	610.50	2197.80
2	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
	Fuel / Energy charges	Hour	3.00	79.30	237.90
3	Water tanker 8000 ltr	Hour	5.00	402.50	2012.50
	Fuel / Energy charges	Hour	5.00	299.90	1499.50
4	Vibratory Roller 8 tonne	Hour	6.1	1342.20	8133.73
	Fuel / Energy charges	Hour	6.1	1031.40	6250.28
5	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>26688.12</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.60	236.60	851.76
2	Crew for Pump	Hour	3.00	111.10	333.30
3	Crew for Water tanker	Hour	5.00	177.50	887.50
4	Crew for Roller	Hour	6.1	263.60	1597.42
5	work inspector	Day	2.00	450.00	900.00
6	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>5969.98</b>

labour component/unit qty 9.90

Add contractor's profit and overhead charges 13.615% 1.30

labour component/unit qty (including contractor's profit) **11.20****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	26688.12
C. Cost of Labour	Rs:	5969.98
Total		Rs: <u><b>32658.09</b></u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 4446.4
Total cost for	600.00 cum	Rs: <b>37104.49</b>
<b>Rate per cum</b>	(A+B+C+D)/600	Rs. <b>61.80</b>

IRR-CAW-4-5 **Providing semi-pervious / pervious casing embankment using soil collected in heaps in embankment area** as part of disposal of excavated soil from canal including cost of all materials, machinery, labour, all operations such as sorting-out, spreading in **layers of 25 cm** before compaction, breaking clods, sectioning and compacting each layer **without watering to density control of not less than 95 percent** or as stipulated by **Sheep foot roller / Vibratory roller/ 8 to 10 tonne power roller etc., complete.**

DATA:

**RATE ANALYSIS**UNIT : **600.00 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	
				0.00	
Total cost of Materials			Rs:	<b>0.00</b>	

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.60	1715.50	6175.80
	Fuel / Energy charges	Hour	3.60	610.50	2197.80
2	Vibratory Roller 8 tonne	Hour	6.06	1342.20	8133.73
	Fuel / Energy charges	Hour	6.06	1031.40	6250.28
3	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery			Rs:	<b>22817.62</b>	

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.60	236.60	851.76
2	Crew for Roller	Hour	6.06	263.60	1597.42
3	work inspector	Day	1.00	450.00	450.00
4	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour			Rs:	<b>4299.18</b>	

labour component/unit qty 7.20

Add contractor's profit and overhead charges 13.615% 1.00

labour component/unit qty (including contractor's profit) **8.20****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	22817.62

C. Cost of Labour		Rs: 4299.18
	Total	Rs: 27116.79
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 3691.95
Total cost for	600.00 cum	Rs: 30808.74
Rate per cum	(A+B+C+D)/600	Rs. 51.30

IRR-CAW-4-6 **Providing compacted embankment for field irrigation channels with gravelly soil from approved borrow area including sorting out, spreading in layers of 15 cm thickness, breaking clods, watering, compacting, dressing sides to required slopes etc., complete with lead upto 50 m and all lifts.**

DATA

RATE ANALYSIS

UNIT : 25.00 cum

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	
Total cost of Materials				Rs:	0.00

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	5 hp pump ( diesel ) Fuel / Energy charges	Hour Hour	1.00 1.00	10.20 79.30	10.20 79.30
Total hire charges of Machinery				Rs:	89.50

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for pump	Hour	1.00	111.10	111.10
2	work inspector	Day	1.00	450.00	450.00
3	Crowbarman for loosening soil	Day	2.50	400.00	1000.00
4	mazdoor For excavation at borrow area	Day	5.00	350.00	1750.00
	For spreading / levelling / sectioning for loading soil	Day Day	2.50 5.00	350.00 350.00	875.00 1750.00
5	Cartman with Bullock cart for water	Day	1.00	435.00	435.00
6	Bullock drawn roller for rolling	Day	1.00	435.00	435.00
Total cost of Labour				Rs:	6806.10

labour component/unit qty 272.20

Add contractor's profit and overhead charges 13.615% 37.10

labour component/unit qty (including contractor's profit) 309.30**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 89.50
C. Cost of Labour	Rs: 6806.10
Total	Rs: 6895.60

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 938.84
Total cost for	25.00 cum	Rs: 7834.44
Rate per cum	(A+B+C+D)/25	Rs. 313.40

IRR-CAW-5

**FOUNDATION FILLING WORKS :**

IRR-CAW-5-1 Providing **rubble and sand filling in layers of 22.5 to 30 cm** including cost of all materials, machinery, labour, watering, ramming etc., complete with initial lead upto 50 m and all lifts.

DATA

RATE ANALYSIS

UNIT : 10.00 cum

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	Rubble stones at quarry	cum	10.00	318.00	3180.00
2	Sand for filling	cum	4.00	95.00	380.00
Total cost of Materials				Rs:	<b>3560.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>1400.00</b>

labour component/unit qty 140.00

Add contractor's profit and overhead charges 13.615% 19.10

labour component/unit qty (including contractor's profit) **159.10****ABSTRACT:**

A. Cost of Materials	Rs:	3560.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1400.00
Total	Rs:	<u><b>4960.00</b></u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 675.3
Total cost for	10.00 cum	Rs: <b>5635.30</b>
Rate per cum	(A+B+C+D)/10	Rs. <b>563.50</b>

IRR-CAW-5-2 **Providing rubble and Murum filling in layers of 22.5 to 30 cm including cost of all materials, machinery, labour, watering, ramming etc., complete with initial lead upto 50 m and all lifts.**

DATA

RATE ANALYSIS

UNIT : 10.00 cum

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rubble stones at quarry	cum	10.00	318.00	3180.00
2	Murum	cum	4.00	165.00	660.00
Total cost of Materials				Rs:	<b>3840.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>1400.00</b>

labour component/unit qty 140.00

Add contractor's profit and overhead charges 13.615% 19.10

labour component/unit qty (including contractor's profit) **159.10****ABSTRACT:**

A. Cost of Materials	Rs:	3840.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1400.00
Total	Rs:	<u><b>5240.00</b></u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 713.43
Total cost for	10.00 cum	Rs: <b>5953.43</b>

Rate per	cum	(A+B+C+D)/10	Rs.	<b>595.30</b>
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**IRR-CAW-5-3** **Providing and laying 25 cm thick sand blanket below embankment** including cost of all materials, machinery, labour, spreading to specified thickness etc., complete with initial lead upto **50 m and all lifts.**

DATA

RATE ANALYSIS

UNIT : **100.00** sqm**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Sand for Filling	cum	25.00 0.00	95.00 0.00	2375.00
Total cost of Materials				Rs:	<b>2375.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	mazdoor	Day	5.00	350.00	1750.00
Total cost of Labour				Rs:	<b>1750.00</b>

labour component/unit qty

17.50

Add contractor's profit and overhead charges

13.615% 2.40

labour component/unit qty (including contractor's profit)

**19.90****ABSTRACT:**

A. Cost of Materials	Rs:	2375.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1750.00
Total	Rs:	<u>4125.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 561.62
Total cost for	100.00 sqm	Rs: <b>4686.62</b>
<b>Rate per sqm</b>	(A+B+C+D)/100	Rs. <b>46.90</b>

**IRR-CAW-5-3-A** **Providing and laying sand blanket below embankment** including cost of all  
(New Item3- 2011--

12) materials, machinery, labour, spreading to specified thickness etc., complete with initial lead upto **50 m and all lifts.**

DATA

RATE ANALYSIS

UNIT : **100.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Sand for Filling	cum	100.00 0.00	95.00 0.00	9500.00
Total cost of Materials				Rs:	<b>9500.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	mazdoor	Day	20.00	350.00	7000.00
	Total cost of Labour			Rs:	<b>7000.00</b>
labour component/unit qty		70.00			
Add contractor's profit and overhead charges	13.615%	9.50			
labour component/unit qty (including contractor's profit)		<b>79.50</b>			

**ABSTRACT:**

A. Cost of Materials	Rs: 9500.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 7000.00
	Total Rs: 16500.00
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 2246.48
Total cost for 100.00 cum	Rs: <b>18746.48</b>
Rate per cum (A+B+C+D)/100	Rs. <b>187.50</b>

- IRR-CAW-5-4 **Providing and constructing dry rubble rock-toe** using rubble and stone chips from approved source including cost of all materials, machinery, labour, hand packing rubble and stone chips, finishing top and sides to required slopes etc., complete with initial lead upto **50 m and all lifts.**

DATA

**RATE ANALYSIS**UNIT : **100.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rubble	cum	100.00	318.00	31800.00
2	Stone chips	cum	15.00	350.00	5250.00
3	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>37110.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	
Total hire charges of Machinery				Rs:	<b>0.00</b>
			0.00	0.00	
				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class-II	Day	7.00	400.00	2800.00
3	mazdoor	Day	19.00	350.00	6650.00
Total cost of Labour				Rs:	<b>9900.00</b>

labour component/unit qty	99.00
Add contractor's profit and overhead charges	13.615% 13.50
labour component/unit qty (including contractor's profit)	<b>112.50</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 37110.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 9900.00
	Total Rs: 47010.00
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 6400.41
Total cost for 100.00 cum	Rs: <b>53410.41</b>
Rate per cum (A+B+C+D)/100	Rs. <b>534.10</b>

- IRR-CAW-5-5 **Providing and constructing longitudinal and cross graded filter drains** using sand and 20 mm down graded aggregates satisfying specified filter criteria in layers as per specifications including cost of all materials, machinery, labour, laying to required slopes, compaction etc., **complete with initial lead upto 50 m and all lifts.**

DATA

**RATE ANALYSIS**UNIT : **100.00** cum

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Sand (Un-Screened )	cum	76.80	95.00	7296.00
2	Coarse aggregate 20-10 mm 75 %	cum	17.40	1225.00	21315.00
3	Coarse aggregate 10 mm down 25 %	cum	5.80	900.00	5220.00
Total cost of Materials				Rs:	<b>33831.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	36.00	350.00	12600.00
Total cost of Labour				Rs:	<b>13050.00</b>

labour component/unit qty 130.50

Add contractor's profit and overhead charges 13.615% 17.80

labour component/unit qty (including contractor's profit) **148.30****ABSTRACT:**

A. Cost of Materials	Rs:	33831.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	13050.00
Total	Rs:	<u>46881.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 6382.85
Total cost for	100.00 cum	Rs: <b>53263.85</b>
Rate per cum	(A+B+C+D)/100	Rs. <b>532.60</b>

IRR-CAW-5-6 **Laying Longitudinal Drains and Transverse drains of Size 600 x600 x750 mm in Bed** and filling with 12 mm to 40 mm HG machine Crushed metal and sand in bed including Excavation of drains and Cost of procuring of all materials **including 50 m lead and for all lifts.**

DATA:

**RATE ANALYSIS****A. MATERIALS:**

Sl.No	Particulars	Unit	Qty	Rate in R	Amount in Rs.
1	12 mm to 40 mm metal	Cum	13.5	1175.00	15862.50
2	Sand (Un-Screened )	cum	36	95.00	3420.00
Total cost of Materials				Rs.	<b>19282.5</b>

**B. MACHINERY**

Sl.No	Description	Unit	Quantity	Rate in R	Amount in Rs.
1	Excavation of drain with Excavator	Cum	45	35.00	1575.00
Total hire charges of Machinery				Total Rs.	<b>1575</b>

**C. LABOUR**

Sl.No	Particulars	Unit	Qty	Rate in R	Amount in Rs.
1	Labour for Sand laying	Cum	5.14	350.00	1799.00
2	Labour for Metal laying	Cum	1.93	350.00	675.50
Total cost of Labour				Rs.	<b>2474.5</b>

labour component/unit qty 24.70

Add contractor's profit and overhead charges 13.615% 3.40

labour component/unit qty (including contractor's profit) **28.10****ABSTRACT**

A. Cost of Materials	Rs.	19282.5
B. Hire charges of Machinery	Rs.	1575

C. Cost of Labour		Rs.	2474.5
	Total	Rs:	<u>23332.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	3176.65
Total cost for	100.00 mt	Rs:	<b>26508.65</b>
Rate per mt	(A+B+C+D)/100	Rs.	<b>265.10</b>

IRR-CAW-5-7 **Laying and fixing of 100 mm Dia 300 mm long precast porous CC plugs in bed and sides**  
using 1.181 Kgs of cement per each using 20 mm HG metal and placing in local filters of size  
600x600x750 mm in size including Excavation of drains and Cost of procuring of all materials  
**including 50 m lead and for all lifts.**

DATA **Rate Analysis** Unit **1 Plug**

**A. MATERIALS:**

Sl.No	Particulars	Unit	Qty	Rate in Rs	Amount in Rs.
1	Coarse aggregate	Cum	0.08	1225.00	98.49
2	Sand (Un-Screened )	cum	0.203	95.00	19.29
3	Cement	Kg	1.181	5.35	6.32
Total cost of Materials				Rs.	<b>124.09</b>

**B. MACHINERY**

Sl.No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Excavation of drain with Excavator	Cum	0.27	35.00	9.45
2	Machine mixing Charges	Cum	0.003	352.50	1.06
Total hire charges of Machinery				Total Rs.	<b>10.51</b>

**C. LABOUR**

Sl.No	Particulars	Unit	Qty	Rate in Rs	Amount in Rs.
1	Mazdoor	Day	0.30	350.00	105.00
Total cost of Labour				Rs.	<b>105.00</b>

labour component/unit qty 105.00  
Add contractor's profit and overhead charges 13.615% 14.30  
labour component/unit qty (including contractor's profit) **119.30**

**ABSTRACT**

A. Cost of Materials	Rs.	124.09
B. Hire charges of Machinery	Rs.	10.51
C. Cost of Labour	Rs.	<u>105.00</u>
	Total	Rs: <u>239.60</u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	32.62
Total cost for	1.00 Plug	Rs:	<b>272.22</b>
Rate per each plug	(A+B+C+D)/1.00	Rs.	<b>272.20</b>

IRR-CAW-5-8 **Providing and constructing 0.50 m thick vertical or inclined graded filter media** consisting of 15 cm thick sand layers and 20 cm thick 20 mm down coarse aggregate layer using approved materials satisfying specified filter criteria as per specifications including cost of all materials, machinery, labour, laying to required slope, compaction etc., complete with initial lead upto **50 m and all lifts.**

DATA: **RATE ANALYSIS** UNIT : **100.00 cum**

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Sand (Un-Screened )	cum	60.00	95.00	5700.00
2	Coarse aggregate 20-10 mm 75 %	cum	30.00	1225.00	36750.00
3	Coarse aggregate 10 mm down 25 %	cum	10.00	900.00	9000.00
Total cost of Materials				Rs:	<b>51450.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	36.00	350.00	12600.00
Total cost of Labour				Rs:	<b>13050.00</b>

labour component/unit qty 130.50  
 Add contractor's profit and overhead charges 13.615% 17.80  
 labour component/unit qty (including contractor's profit) **148.30**

**ABSTRACT:**

A. Cost of Materials	Rs:	51450.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	13050.00
Total	Rs:	<u>64500.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	8781.68
Total cost for	100.00 cum	Rs: <b>73281.68</b>
Rate per cum	(A+B+C+D)/100.0	Rs. <b>732.80</b>

IRR-CAW-5-9 **Providing and constructing graded filter media below and behind rock-toe** consisting of 20 cm thick sand, 15 cm thick 20 mm down and 15 cm thick 40 mm down size graded coarse aggregates satisfying filter criteria behind rock-toe and 15 cm thick sand, 20 cm thick 20 mm down coarse aggregate and 65 cm thick 40 mm down size coarse aggregate satisfying filter criteria below rock-toe as per specifications including cost of all materials, machinery, labour, laying to required slope, compaction etc., complete **with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **176.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Sand (Un-Screened )	cum	58.77	95.00	5583.15
2	Coarse aggregate 40-20 mm	cum	52.70	1175.00	61922.50
3	Coarse aggregate 20-10 mm	cum	50.70	1225.00	62107.50
4	Coarse aggregate 10 mm down	cum	13.80	900.00	12420.00
Total cost of Materials				Rs:	<b>142033.15</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	mazdoors	Day	60.00	350.00	21000.00
Total cost of Labour				Rs:	<b>21450.00</b>

labour component/unit qty 121.90  
 Add contractor's profit and overhead charges 13.615% 16.60  
 labour component/unit qty (including contractor's profit) **138.50**

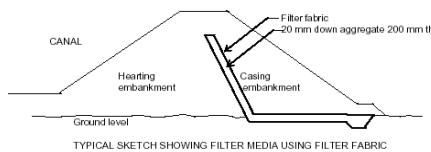
**ABSTRACT:**

A. Cost of Materials	Rs:	142033.15
B. Hire charges of Machinery	Rs:	0.00

C. Cost of Labour		Rs: 21450.00
	Total	Rs: 163483.15
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 22258.23
Total cost for	176.00 cum	Rs: 185741.38
Rate per cum	(A+B+C+D)/176.0	Rs. 1055.30

**IRR-CAW-5-10 Providing and laying filter media consisting of 2 layers of poly-propeline nonwoven filter**

- (a) fabric and 200 mm thick 20 mm down graded coarse aggregate for embankment including cost of all materials, machinery, labour, forming toe drain etc., **complete with lead upto 50 m**
- a. **for aggregate and all leads for fabric and all lifts.**  
**Using 200 gsm filter fabric.**



DATA:

**RATE ANALYSIS**

UNIT : 100.00 sqm

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	PP filter fabric 200 gsm	sqm	210.00	130.00	27300.00
2	20 - 10 mm CA @ 75 %	cum	15.00	1225.00	18375.00
	10 mm down CA @ 25 %	cum	5.00	900.00	4500.00
				Rs:	<b>50175.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
			0.00	0.00	0.00
				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	7.00	350.00	2450.00
				Rs:	<b>2900.00</b>

labour component/unit qty 29.00

Add contractor's profit and overhead charges 13.615% 3.90

labour component/unit qty (including contractor's profit) **32.90****ABSTRACT:**

A. Cost of Materials	Rs: 50175.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2900.00
Total	Rs: 53075.00

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 7226.16
Total cost for	100.00 sqm	Rs: 60301.16
Rate per sqm	(A+B+C+D)/100.0	Rs. 603.00

- IRR-CAW-5-11 **Providing and laying filter media consisting of 2 layers of poly-propeline nonwoven filter fabric and 200 mm thick 20 mm down graded coarse aggregate for embankment including cost of all materials, machinery, labour, forming toe drain etc., complete with lead upto 50 m for aggregate and all leads for fabric and all lifts.**
- b. **Using 250 gsm filter fabric.**

Data

**RATE ANALYSIS**UNIT : **100.00** sqm**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	PP filter fabric 250 gsm	sqm	210.00	150.00	31500.00
2	20 - 10 mm CA @ 75 %	cum	15.00	1225.00	18375.00
	10 mm down CA @ 25 %	cum	5.00	900.00	4500.00
Total cost of Materials				Rs:	<b>54375.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	7.00	350.00	2450.00
Total cost of Labour				Rs:	<b>2900.00</b>

labour component/unit qty

29.00

Add contractor's profit and overhead charges

13.615% 3.90

labour component/unit qty (including contractor's profit)

**32.90****ABSTRACT:**

A. Cost of Materials	Rs:	<b>54375.00</b>
B. Hire charges of Machinery	Rs:	<b>0.00</b>
C. Cost of Labour	Rs:	<b>2900.00</b>
	Total	<b>57275.00</b>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: <b>7797.99</b>
Total cost for	100.00 sqm	Rs: <b>65072.99</b>
Rate per sqm	(A+B+C+D)/100.0	Rs. <b>650.70</b>

IRR-CAW-6

**ROCK FILL WORKS :**

IRR-CAW-6-1

- Providing and **constructing rockfill casing to canal embankment** with graded stones and spalls from **approved quarry** including cost of all materials, machinery, labour, spreading stones and spalls in layers, hand packing, wedging, finishing surface to required slopes etc., **complete with initial lead upto 50 m and all lifts.**

DATA

**RATE ANALYSIS**UNIT : **100.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rubble stones ( at quarry )	cum	100.00	318.00	31800.00
2	Stone chips / spalls ( at quarry )		15.00	350.00	5250.00
Total cost of Materials				Rs:	<b>37050.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	6.00	400.00	2400.00
2	mazdoor	Day	8.00	350.00	2800.00
Total cost of Labour				Rs:	<b>5200.00</b>

labour component/unit qty 52.00  
 Add contractor's profit and overhead charges 13.615% 7.10  
 labour component/unit qty (including contractor's profit) **59.10**

**ABSTRACT:**

A. Cost of Materials	Rs: 37050.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 5200.00
Total	Rs: 42250.00
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 5752.34
Total cost for 100.00 cum	Rs: <b>48002.34</b>
Rate per cum (A+B+C+D)/100.0	Rs. <b>480.00</b>

IRR-CAW-6-2 Providing and **constructing rockfill casing to canal embankment** with graded stones and spalls **available in dump yard (spoil bank)** including cost of all materials, machinery, labour, spreading stones and spalls in layers, hand packing, wedging, finishing surface to required slopes etc., **complete with initial lead upto 50 m and all lifts.**

**Note:** Stones and spalls available in dump yard shall be issued at specified issue rate.

DATA

RATE ANALYSIS

UNIT : **100.00 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rubble stones at dump yard	cum	100.00	155.00	15500.00
2	Stone chips ( spalls ) at dump yard		15.00	185.00	2775.00
Total cost of Materials				Rs:	<b>18275.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
Total hire charges of Machinery			0.00	Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	6.00	400.00	2400.00
2	Crowbarman	Day	2.00	400.00	800.00
3	mazdoor	Day	10.00	350.00	3500.00
Total cost of Labour				Rs:	<b>6700.00</b>

labour component/unit qty 67.00  
 Add contractor's profit and overhead charges 13.615% 9.10  
 labour component/unit qty (including contractor's profit) **76.10**

**ABSTRACT:**

A. Cost of Materials	Rs: 18275.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 6700.00
Total	Rs: 24975.00
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 3400.35
Total cost for 100.00 cum	Rs: <b>28375.35</b>
Rate per cum (A+B+C+D)/100.0	Rs. <b>283.80</b>

IRR-CAW-7

**CANAL LINING WORKS :**

- IRR-CAW-7-1 **Providing cohesive non-swelling ( CNS ) soil lining to canals** using soil from **approved borrow area** including spreading soil in **layers of thickness not more than 15 cm**, breaking clods, watering, compacting to density control of **not less than 98 percent** or as stipulated, dressing to required profile etc., complete **with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **394.00** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shovel 0.5 cum	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
2	Angle dozer 90 hp	Hour	3.00	1715.50	5146.50
	Fuel / Energy charges	Hour	3.00	610.50	1831.50
3	Tipper 5 cum	Hour	24.00	446.70	10720.80
	Fuel / Energy charges	Hour	24.00	299.90	7197.60
4	Pump 5 hp ( diesel )	Hour	4.00	10.20	40.80
	Fuel / Energy charges	Hour	4.00	79.30	317.20
5	Water tanker 8000 ltr	Hour	4.00	402.50	1610.00
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
6	Diesel road roller 8-10 tonne	Hour	11.50	197.20	2267.80
	Fuel / Energy charges	Hour	11.50	714.00	8211.00
7	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>50525.60</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	Crew for Dozer	Hour	3.00	236.60	709.80
3	Crew for Tipper	Hour	24.00	177.50	4260.00
4	Crew for Pump	Hour	4.00	111.10	444.40
5	Crew for Water tanker	Hour	4.00	177.50	710.00
6	Crew for Road roller	Hour	11.50	210.90	2425.35
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	38.00	350.00	13300.00
Total cost of Labour				Rs:	<b>24642.35</b>

labour component/unit qty 62.50

Add contractor's profit and overhead charges 13.615% 8.50

labour component/unit qty (including contractor's profit) **71.00****ABSTRACT:**

A. Cost of Materials		Rs:	0.00
B. Hire charges of Machinery		Rs:	50525.60
C. Cost of Labour		Rs:	24642.35
	Total	Rs:	<u>75167.95</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	10234.12
Total cost for cum	394.00	Rs:	<b>85402.07</b>
Rate per cum	(A+B+C+D)/394.0	Rs.	<b>216.80</b>

- IRR-CAW-7-2 **Providing cohesive non-swelling ( CNS ) soil lining to canals** using soil from **approved borrow area** including spreading soil in layers of thickness **not more than 15 cm**, breaking clods, watering, compacting to density control of **not less than 95 percent** or as stipulated, dressing to required profile etc., complete **with initial lead upto 1 km and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **394.00 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials					Rs: <b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shovel 0.5 cum	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
2	Angle dozer 90 hp	Hour	3.00	1715.50	5146.50
	Fuel / Energy charges	Hour	3.00	610.50	1831.50
3	Tippers 5 cum	Hour	24.00	446.70	10720.80
	Fuel / Energy charges	Hour	24.00	299.90	7197.60
4	Pump 5 hp ( diesel )	Hour	4.00	10.20	40.80
	Fuel / Energy charges	Hour	4.00	79.30	317.20
5	Water tanker 8000 ltr	Hour	4.00	402.50	1610.00
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
6	Diesel road roller 8-10 tonnes	Hour	10.00	197.20	1972.00
	Fuel / Energy charges	Hour	10.00	714.00	7140.00
7	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery					Rs: <b>49158.80</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Shovel	Hour	8.00	236.60	1892.80
2	Crew for Dozer	Hour	3.00	236.60	709.80
3	Crew for Tipper	Hour	24.00	177.50	4260.00
4	Crew for Pump	Hour	4.00	111.10	444.40
5	Crew for Water tanker	Hour	4.00	177.50	710.00
6	Crew for Road roller	Hour	10.00	210.90	2109.00
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	38.00	350.00	13300.00
Total cost of Labour					Rs: <b>24326.00</b>

labour component/unit qty 61.70

Add contractor's profit and overhead charges 13.615% 8.40

labour component/unit qty (including contractor's profit) **70.10****ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 49158.80
C. Cost of Labour	Rs: 24326.00
Total	Rs: 73484.80
D. Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	394.00 cum
<b>Rate per cum</b>	(A+B+C+D)/394.0
	Rs. 211.90

IRR-CAW-7-3

**Providing cohesive non-swelling ( CNS ) soil lining to canal using soil collected in heaps**

along the edge of canal requiring CNS soil lining as part of the disposal of excavated soil from canal excavation in CNS soil reach including spreading in **layers of thickness not more than 15 cm**, breaking clods, watering, compacting to density control of **not less than 95 percent** or as stipulated, dressing to required profile etc., complete with lead upto upto 50 m and all lifts.

DATA:

**RATE ANALYSIS**UNIT : **394.00 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
			0.00	0.00	0.00

Total cost of Materials	Rs: <b>0.00</b>
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**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle Dozer 90 hp	Hour	1.50	1715.50	2573.25
	Fuel / Energy charges	Hour	1.50	610.50	915.75
2	Pump 5 hp ( diesel )	Hour	5.00	10.20	51.00
	Fuel / Energy charges	Hour	5.00	79.30	396.50
3	Water tanker 8000 ltr	Hour	5.00	402.50	2012.50
	Fuel / Energy charges	Hour	5.00	299.90	1499.50
4	Diesel road roller 8-10 tonne	Hour	13.00	197.20	2563.60
	Fuel / Energy charges	Hour	13.00	714.00	9282.00
5	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery					<b>Rs: 19444.10</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	1.50	236.60	354.90
2	Crew for Pump	Hour	5.00	111.10	555.50
3	Crew for Water tanker	Hour	5.00	177.50	887.50
4	Crew for Road roller	Hour	13.00	210.90	2741.70
5	work inspector	Day	2.00	450.00	900.00
6	mazdoor	Day	38.00	350.00	13300.00
Total cost of Labour					<b>Rs: 18739.60</b>

labour component/unit qty **47.60**  
 Add contractor's profit and overhead charges **13.615% 6.50**  
 labour component/unit qty (including contractor's profit) **54.10**

**ABSTRACT:**

A. Cost of Materials	Rs: <b>0.00</b>
B. Hire charges of Machinery	Rs: <b>19444.10</b>
C. Cost of Labour	Rs: <b>18739.60</b>
Total	<b>Rs: 38183.70</b>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	394.00 cum
Rate per cum	(A+B+C+D)/394.0
	<b>Rs: 5198.71</b>
	<b>Rs: 43382.41</b>
	<b>Rs: 110.10</b>

IRR-CAW-7-4 Providing and fixing 20 x 20 x 75 cm size top surface neatly dressed canal bed level stones including cost of all materials, labour, excavation, fixing in position to correct level etc., complete with lead upto 50 m and all lifts.

DATA

RATE ANALYSIS

UNIT : **32 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rough stone 20x20x75 cm	Each	32.00	23.00	736.00
			0.00	0.00	0.00
Total cost of Materials					<b>Rs: 736.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	
			0.00	0.00	
Total hire charges of Machinery					<b>Rs: 0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Stone chiseller Cl- I	Day	2.00	445.00	890.00
3	mazdoor	Day	2.00	350.00	700.00

Total cost of Labour	Rs: <b>2040.00</b>
labour component/unit qty	63.80
Add contractor's profit and overhead charges	13.615% 8.70
labour component/unit qty (including contractor's profit)	<b>72.50</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 736.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2040.00
Total	Rs: 2776.00
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 377.95
Total cost for 32.00 Nos.	Rs: <b>3153.95</b>
<b>Rate per each</b> (A+B+C+D)/32.0	<b>Rs. 98.60</b>

- IRR-CAW-7-5 Providing, fabricating and placing in position reinforcement steel bars for RCC works including cleaning, straightening, cutting, bending, hooking, lapping, tying with 1.25 mm dia. soft annealed steel wire, welding wherever required including cost of all materials, machinery, labour etc., complete with initial lead upto 50 and all lifts.

DATA

**RATE ANALYSIS**UNIT : **1000.00 kg****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rein.Steel with 5 % wastage	kg	1050.00	34.00	35700.00
2	Binding wire 1.25 mm dia	kg	8.00	60.00	480.00
3	Sundries ( chairs / spacers etc )	LS	10.00	30.00	300.00
Total cost of Materials					Rs: <b>36480.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
Total hire charges of Machinery					Rs: <b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Bar bender	Day	6.00	555.00	3330.00
2	mazdoor	Day	11.00	350.00	3850.00
Total cost of Labour					Rs: <b>7180.00</b>

labour component/unit qty	7.20
Add contractor's profit and overhead charges	13.615% 1.00
labour component/unit qty (including contractor's profit)	<b>8.20</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 36480.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 7180.00
Total	Rs: 43660.00
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 5944.31
Total cost for 1000.00 kg	Rs: <b>49604.31</b>
<b>Rate per kg</b> (A+B+C+D)/1000.0	<b>Rs. 49.60</b>

- IRR-CAW-7-6 Providing and laying 75 mm thick in-situ M-15 ( 28 days cube compressive strength not less than 15 N / sqmm ) grade cement concrete with 20 mm down size approved, clean, hard, graded aggregates for canal lining using vibrating cylinder type mechanical paver including cost of all materials, machinery, labour, cleaning, batching, mixing, placing in position, finishing, forming contraction joints, fixing PVC joint sealing strips, curing, shifting of paver from one side to other side of canal etc., complete with initial lead upto 1 km and all lifts.  
(43 Gr Cement content: 300 kg /cum (22.5 kg/ sqm) for use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA--65:35,

**FA : 0.45 cum equivalent concrete volume:79.2 cum including the extra quantity of concrete for curvatures and bends etc.,)**

DATA:

		<b>RATE ANALYSIS</b>		<b>UNIT :</b>	
<b>A. MATERIALS:</b>				<b>960 sqm</b>	
SI No	particulars	Unit	Quantity	Rate	Amount
1	Cement 43 Gr	kg	23760.00	5.35	127116.00
2	Coarse aggregate 20-10 mm	cum	41.18	1225.00	50450.40
	Coarse aggregate 10-4.75 mm	cum	22.18	900.00	19958.40
3	Fine aggregate (Un-Screened )	cum	35.64	95.00	3385.80
4	Super plasticiser	kg	95.04	55.00	5227.20
5	PVC sealing strip	Rm	640.00	45.00	28800.00
6	Use rate of paving cylinder	sqm	960.00	0.88	842.40
7	Sundries	LS	5.00	30.00	150.00
Total cost of Materials				Rs:	<b>235930.20</b>

<b>B. MACHINERY:</b>					
SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Batching plant	Hour	8.00	405.40	3243.20
	Lubricants etc @ 5 %	Hour	8.00	20.27	162.16
2	Transit mixer 3 Nos	Hour	24.00	758.40	18201.60
	Fuel / Energy charges	Hour	24.00	872.70	20944.80
3	Mechanical paver	Hour	8.00	356.50	2852.00
	Lubricants etc @ 5 %	Hour	8.00	17.83	142.60
4	DG set for batching plant 50 KVA	Hour	8.00	85.10	680.80
	Fuel / Energy charges	Hour	8.00	952.10	7616.80
5	DG set for paver 30 KVA	Hour	8.00	65.80	526.40
	Fuel / Energy charges	Hour	8.00	634.70	5077.60
6	Shovel 0.5 cum / Loader	Hour	2.00	1003.10	2006.20
	Fuel / Energy charges	Hour	2.00	476.00	952.00
7	Water tanker	Hour	8.00	402.50	3220.00
	Fuel / Energy charges	Hour	8.00	299.90	2399.20
8	Pump 5 hp(diesel) 2 Nos. 4 hrs each	Hour	8.00	10.20	81.60
	Fuel / Energy charges	Hour	8.00	79.30	634.40
9	Sundries ( power line etc )	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>68891.36</b>

<b>C. LABOUR:</b>					
SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Transit mixer	Hour	24.00	283.90	6813.60
3	Crew for Concrete paver	Hour	8.00	421.80	3374.40
4	Crew for DG set	Hour	16.00	131.80	2108.80
5	Crew for Shovel	Hour	2.00	236.60	473.20
6	Crew for Water tanker	Hour	8.00	177.50	1420.00
7	Crew for Pump	Hour	16	111.10	1777.60
8	Mason Class I	Day	2	445.00	890.00
9	Mechanic	Day	1	475.00	475.00
10	Fitter	Day	1	475.00	475.00
11	Electrician	Day	1	515.00	515.00
12	work inspector	Day	2	450.00	900.00
13	mazdoor ( BP site )	Day	5	350.00	1750.00
14	mazdoor ( Paver site )	Day	10	350.00	3500.00
Total cost of Labour				Rs:	<b>27197.40</b>

labour component/unit qty	28.30
Add contractor's profit and overhead charges	13.615% 3.90
labour component/unit qty (including contractor's profit)	<b>32.20</b>

**ABSTRACT:**

- A. Cost of Materials Rs: 235930.20
- B. Hire charges of Machinery Rs: 68891.36
- C. Cost of Labour Rs: 27197.4
- Total Rs: **332018.96**

Add for shifting & re-erection of BP @	2%	Rs:	6640.3792
Add for LH / RH shifting & erection of Paver @	0.5%	Rs:	1660.0948
Add for ledge cutting / erection of tracks etc @	1%	Rs:	3320.1896
		Total	Rs: 343639.62
D. Add for contractor's profit and overheads on (A+B+C+other)	13.615%	Rs:	46786.53
Lead Charges for 1 Km for FA	35.64 cum @	31.5 Rs./	1122.66
Lead Charges for 1 Km for CA	63.36 cum @	30.4 Rs./	1926.14
Total cost for	960.00 sqm	Rs:	393474.96
<b>Rate per sqm</b>	(A+B+C+D)/960.0	Rs.	<b>409.90</b>

IRR-CAW-7-7 Providing and laying **80 mm thick in-situ M-15** ( 28 days cube compressive strength not less than 15 N / sqmm ) grade cement concrete with **20 mm down size** approved, clean, hard, graded aggregates **for canal lining using vibrating cylinder type mechanical paver** including cost of all materials, machinery, labour, cleaning, batching, mixing, placing in position, finishing, forming contraction joints, fixing PVC joint sealing strips, curing, shifting of paver from one side to other side of canal etc., complete **with initial lead upto 1 km and all lifts.**  
**(43 Gr Cement content: 300 kg /cum (24 kg/ sqm) for use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum equivalent concrete volume:84.48 cum including the extra quantity of concrete for curvatures and bends etc.)**

DATA:

		<b>RATE ANALYSIS</b>		<b>UNIT : 960 sqm</b>	
<b>A. MATERIALS:</b>					
SI No	particulars	Unit	Quantity	Rate	Amount
1	Cement 43 Gr	kg	25344.00	in Rs. 5.35	135590.40
2	Coarse aggregate 20-10 mm	cum	43.93	1225.00	53813.76
	Coarse aggregate 10-4.75 mm	cum	23.65	900.00	21288.96
3	Fine aggregate (Un-Screened )	cum	38.02	95.00	3611.52
4	Super plasticiser	kg	101.38	55.00	5575.68
5	PVC sealing strip	Rm	640.00	45.00	28800.00
6	Use rate of paving cylinder	sqm	960.00	0.88	842.40
7	Sundries	LS	5.00	30.00	150.00
Total cost of Materials				Rs:	<b>249672.72</b>

<b>B. MACHINERY:</b>					
SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Batching plant	Hour	8.00	405.40	3243.20
	Lubricants etc @ 5 %	Hour	8.00	20.27	162.16
2	Transit mixer 3 Nos	Hour	24.00	758.40	18201.60
	Fuel / Energy charges	Hour	24.00	872.70	20944.80
3	Mechanical paver	Hour	8.00	356.50	2852.00
	Lubricants etc @ 5 %	Hour	8.00	17.83	142.60
4	DG set for batching plant 50 KVA	Hour	8.00	85.10	680.80
	Fuel / Energy charges	Hour	8.00	952.10	7616.80
5	DG set for paver 30 KVA	Hour	8.00	65.80	526.40
	Fuel / Energy charges	Hour	8.00	634.70	5077.60
6	Shovel 0.5 cum / Loader	Hour	2.00	1003.10	2006.20
	Fuel / Energy charges	Hour	2.00	476.00	952.00
7	Water tanker	Hour	8.00	402.50	3220.00
	Fuel / Energy charges	Hour	8.00	299.90	2399.20
8	Pump 5 hp(diesel) 2 Nos. 4 hrs each	Hour	8.00	10.20	81.60
	Fuel / Energy charges	Hour	8.00	79.30	634.40
9	Sundries ( power line etc )	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>68891.36</b>

<b>C. LABOUR:</b>					
SI No	Description	Unit	Quantity	Rate	Amount
				in Rs.	in Rs.
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Transit mixer	Hour	24.00	283.90	6813.60
3	Crew for Concrete paver	Hour	8.00	421.80	3374.40
4	Crew for DG set	Hour	16.00	131.80	2108.80

5	Crew for Shovel	Hour	2.00	236.60	473.20
6	Crew for Water tanker	Hour	8.00	177.50	1420.00
7	Crew for Pump	Hour	16	111.10	1777.60
8	Mason Class I	Day	2	445.00	890.00
9	Mechanic	Day	1	475.00	475.00
10	Fitter	Day	1	475.00	475.00
11	Electrician	Day	1	515.00	515.00
12	work inspector	Day	2	450.00	900.00
13	mazdoor ( BP site )	Day	5	350.00	1750.00
14	mazdoor ( Paver site )	Day	10	350.00	3500.00
Total cost of Labour				Rs:	<b>27197.40</b>
labour component/unit qty				28.30	
Add contractor's profit and overhead charges				13.615%	<u>3.90</u>
labour component/unit qty (including contractor's profit)					<b><u>32.20</u></b>

**ABSTRACT:**

A. Cost of Materials		Rs:	249672.72
B. Hire charges of Machinery		Rs:	68891.36
C. Cost of Labour		Rs:	<u>27197.4</u>
		Total	<u>345761.48</u>
Add for shifting & re-erection of BP @	2%	Rs:	6915.2296
Add for LH / RH shifting & erection of Paver @	0.5%	Rs:	1728.8074
Add for ledge cutting / erection of tracks etc @	1%	Rs:	3457.6148
		Total	<u>357863.13</u>
D. Add for contractor's profit and overheads on (A+B+C+other	13.615%	Rs:	48723.07
Lead Charges for 1 Km for FA	38.02	cum @	31.5 Rs./ 1197.504
Lead Charges for 1 Km for CA	67.58	cum @	30.4 Rs./ 2054.55
Total cost for	960.00	sqm	<b>Rs: 409838.26</b>
Rate per sqm	(A+B+C+D)/960.0	Rs.	<b>426.90</b>

IRR-CAW-7-8 Providing and laying 100 mm thick in situ M-15 (28 days cube compressive strength not less than 15 N /Sqmm ) grade cement concrete with 20 mm down size approved, clean, hard, graded aggregates for canal lining using, vibrating, cylinder type mechanical paver including cost of all materials, machinery, labour, cleaning, batching, mixing, placing in position, finishing, forming contraction joints, fixing PVC joint sealing strips, curing, shifting of paver from one side to other side of canal etc., complete with initial lead upto 1 Km and all lifts.  
**(43 Gr Cement content: 300 kg /cum (30 kg/ sqm) for use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum equivalent concrete volume:88 cum including the extra quantity of concrete for curvatures and bends etc.,)**

DATA:

RATE ANALYSIS			UNIT	:	800 Sqm
<b>A. MATERIALS:</b>					
Sl.No	Particulars	Unit	Qty	Rate in R	Amount
1	Cement 43 Gr	Kg	26400	5.35	141240.00
2	Coarse aggregate 20-10 mm	cum	45.76	1225.00	56056.00
	Coarse aggregate 10-4.75 mm	cum	24.64	900.00	22176.00
3	Fine aggregate (Un-Screened)	cum	39.6	95.00	3762.00
4	Super plasticiser	kg	105.6	55.00	5808.00
5	PVC sealing strip	Rm	533	45.00	23985.00
6	Use rate of paving cylinder	sqm	800	0.8775	702.00
	Total cost of Materials			Rs.	<b>253729</b>

**B. MACHINERY:**

Sl.No	Particulars	Unit	Qty	Rate in R	Amount
1	Batching plant	Hour	8	405.40	3243.20
2	Transit mixer 3 Nos	Hour	24	758.40	18201.60
	Fuel / Energy charges	Hour	24	872.70	20944.80
3	Mechanical paver	Hour	8	356.50	2852.00
	lubricants etc @ 5%	Hour	8	17.83	142.60
4	DG set for batching plant 50 KVA	Hour	8	85.10	680.80
	Fuel / Energy charges	Hour	8	952.10	7616.80
5	DG set for paver 30 KVA	Hour	8	65.80	526.40
	Fuel / Energy charges	Hour	8	634.70	5077.60
6	Shovel 0.5 cum / Loader	Hour	2.00	1003.10	2006.20

	Fuel / Energy charges	Hour	2.00	476.00	952.00
7	Water tanker	Hour	8	402.50	3220.00
	Fuel / Energy charges	Hour	8	299.90	2399.20
8	Pump 5 hp (diesel) 2 Nos. 4 hrs each	Hour	8	10.20	81.60
	Fuel / Energy charges		8	79.30	634.40
	Total hire charges of Machinery			Rs.	68579.2

<b>C. LABOUR:</b>					
SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Transit mixer	Hour	24.00	283.90	6813.60
3	Crew for Concrete paver	Hour	8.00	421.80	3374.40
4	Crew for DG set	Hour	16.00	131.80	2108.80
5	Crew for Shovel	Hour	2.00	236.60	473.20
6	Crew for Water tanker	Hour	8	177.50	1420.00
7	Crew for Pump	Hour	8	111.10	888.80
8	Mason Class I	Day	2	445.00	890.00
9	Mechanic	Day	1	475.00	475.00
10	Fitter	Day	1	475.00	475.00
11	Electrician	Day	1	515.00	515.00
12	work inspector	Day	2	450.00	900.00
13	mazdoor ( BP site )	Day	5	350.00	1750.00
14	mazdoor ( Paver site )	Day	10	350.00	3500.00
Total cost of Labour				Rs:	<b>26308.60</b>
labour component/unit qty				32.90	
Add contractor's profit and overhead charges				13.615% 4.50	
labour component/unit qty (including contractor's profit)				<b>37.40</b>	

**ABSTRACT**

A. Cost of Materials	Rs.	253729
B. Hire charges of Machinery	Rs.	68579.2
C. Cost of Labour	Rs.	<u>26308.60</u>
	TOTAL F	<u>348616.8</u>
Add for shifting & re-erection of BP @	2% Rs.	6972.336
Add for LH / RH shifting & erection of Paver @	0.5% Rs.	1743.084
Add for ledge cutting / erection of tracks etc @	1% Rs.	<u>3486.168</u>
	Total Rs:	<u>360818.39</u>
D. Add for contractor's profit and overheads on (A+B+C+other	13.615%	Rs: 49125.42
Lead Charges for 1 Km for FA	39.60	cum @ 31.5 Rs./ 1247.4
Lead Charges for 1 Km for CA	70.40	cum @ 30.4 Rs./ 2140.16
Total cost for	800.00 Sqm	Rs: <b>413331.37</b>
<b>Rate per Sqm</b>	(A+B+C+D)/800.0	Rs. <b>516.70</b>

IRR-CAW-7-9 **Dismantling, shifting and re-erecting mechanical concrete paver and DG set with all accessories across canal CD work or other locations wherever shifting and re-erecting is necessary including aligning paver correctly for continuing canal lining work, cost of all materials, machinery, labour etc., complete with all leads and lifts.**

**Note:** Local shifting and re-erection of paver for LH and RH side lining included in concrete lining rates under items IRR-CAW-7-7 and IRR-CAW-7-8 and separate rate for shifting shall not be allowed.

DATA: **RATE ANALYSIS** UNIT : **1.00** Shifting

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	Tipper	Hour	4.00	446.70	1786.8
2	Fuel / Energy charges	Hour	1.00	299.90	299.9
	Sundries (ropes / rails etc)	LS	1.00	30.00	30
	Total hire charges of Machinery			Rs:	<b>2116.70</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Tipper	Hour	4.00	177.50	710
2	Crew for Paver	Hour	8.00	421.80	3374.4
3	mazdoor	Day	6.00	350.00	2100
	Total cost of Labour			Rs:	<b>6184.40</b>

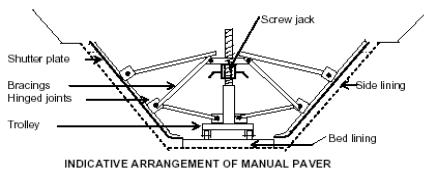
labour component/unit qty 6184.40

Add contractor's profit and overhead charges 13.615% 842.00

labour component/unit qty (including contractor's profit) **7026.40****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	2116.70
C. Cost of Labour	Rs:	6184.40
	Total	Rs: 8301.10
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 1130.19
Total cost for	1.00 Shifting	Rs: <b>9431.29</b>
Rate per Shifting	(A+B+C+D)/1.0	Rs. <b>9431.30</b>

IRR-CAW-7-10 Providing and laying insitu vibrated M-10 ( 28 days cube compressive strength not less than 10 N /sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates **for bed and side lining of canal(150mm thick)** including finishing the junction of bed and sides to required curvature, cost of all materials, machinery, labour, formwork including supports, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete **with initial lead upto 50 m and all lifts. ( Cement content : 250 kg / cum )**  
**( 43 Gr Cement content: 250 kg / cum for use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA-50:30:20, FA : 0.40 cum )**



DATA

RATE ANALYSIS

UNIT : **28.17 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	7042.5	5.35	37677.375
2	Cement for incidentals @ 5 kg / cum	kg	140.85	5.35	753.5475
	Coarse aggregate 40-20 mm	cum	12.68	1175.00	14894.888
	Coarse aggregate 20-10 mm	cum	7.61	1225.00	9317.2275
3	Coarse aggregate 10 mm below	cum	5.07	900.00	4563.54
4	Fine aggregate (Un-Screened)	cum	11.27	95.00	1070.46
4	Super Plasticizer	kg	28.17	55.00	1549.35
6	Use rate of manual paver	sqm	180	27.62	4970.94
7	Sundries	LS	2	30.00	60
	Total cost of Materials			Rs:	<b>74857.33</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 600/400 ltr ( diesel )	Hour	16.00	92.70	1483.2
	Fuel / Energy charges	Hour	16.00	158.70	2539.2
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.1
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.5
	Fuel / Energy charges	Hour	1.00	299.90	299.9
4	Needle vibrator 40 mm dia ( petrol )	Hour	16.00	7.60	121.6
	Fuel / Energy charges	Hour	16.00	18.80	300.8
Total hire charges of Machinery				Rs:	<b>5191.95</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	16.00	219.70	3515.2
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.5
4	Crew for Needle vibrator	Hour	16.00	158.20	2531.2
5	work inspector	Day	1.00	450.00	450
6	Mason Class-I	Day	2.00	445.00	890
7	Fitter	Day	1.00	475.00	475
8	mazdoor for batching materials for loading mortar pans for laying and moving paver for conveying concrete for cleaning/ washing/ curing	Day	22.00 8.00 6.00 28.17 2.00	350.00 350.00 350.00 350.00 350.00	7700 2800 2100 9859.5 700
Total cost of Labour				Rs:	<b>31253.95</b>

labour component/unit qty 1109.50

Add contractor's profit and overhead charges 13.615% 151.10

labour component/unit qty (including contractor's profit) **1260.60****ABSTRACT:**

A. Cost of Materials	Rs: 74857.33
B. Hire charges of Machinery	Rs: 5191.95
C. Cost of Labour	Rs: 31253.95
Total	Rs: 111303.23
D. Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for 28.17 cum	Rs: 15153.93
Rate per cum (A+B+C+D)/28.17	Rs: 126457.16
	Rs. 4489.10

IRR-CAW-7-11 Providing and laying **insitu vibrated M-10** (28 days cube compressive strength not less than 10 N/sqm) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregate **for bed and side lining of canal(100 mm thick)** including, finishing the junction of bed and sides to required curvature, cost of all materials, machinery, labour, formwork including supports cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead up to 50 m and all lifts (**Cement content: 250 kg/cum**) (**43 Gr Cement content: 250 kg / cum for use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum**)

DATA

RATE ANALYSIS

UNIT:

27 cum

**A. MATERIALS:**

Sl.No	Particulars	Unit	Qty	Rate in Rs	Amount
1	Cement for mix	kg	6750	5.35	36112.50
2	Cement for incidentals @ 5 Kg / cum	kg	135	5.35	722.25
	Coarse aggregate 40mm	cum	12.15	1175.00	14276.25
	Coarse aggregate 20 mm .	cum	7.29	1225.00	8930.25

3	Coarse aggregate 10 mm .	cum	4.86	900.00	4374.00
4	Fine aggregate (Un-Screened)	cum	10.8	95.00	1026.00
5	Super Plasticizer	kg	27	55.00	1485.00
	Use rate of manual paver	sqm	270	27.62	7456.41
Total cost of Materials			Total Rs.	74382.66	
Total cost of Materials			Rs.	<b>74382.66</b>	

**B. MACHINERY:**

Sl.No	Particulars	Unit	Qty	Rate in Rs	Amount
1	Concrete mixer 600/400 ltr (diesel)	Hour	16.00	92.70	1483.20
	Fuel / Energy charges	Hour	16.00	158.70	2539.20
2	5 hp pump (diesl)	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 40 mm die (petrol)	Hour	4.00	7.60	30.40
	Fuel / Energy charges	Hour	4.00	18.80	75.20
Total hire charges of Machinery			Rs.	<b>4875.15</b>	

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	16.00	219.70	3515.2
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.5
4	Crew for Needle vibrator	Hour	16.00	158.20	2531.2
5	work inspector	Day	1.00	450.00	450
6	Mason Class-I	Day	2.00	445.00	890
7	Fitter	Day	1.00	475.00	475
8	mazdoor for batching materials for loading mortar pans for laying and moving paver for conveying concrete for cleaning/ washing/ curing	Day	22.00	350.00	7700
		Day	8.00	350.00	2800
		Day	6.00	350.00	2100
		Day	27.00	350.00	9450
		Day	2.00	350.00	700
Total cost of Labour			Rs:	<b>30844.45</b>	

labour component/unit qty 1142.40

Add contractor's profit and overhead charges 13.615% 155.50

labour component/unit qty (including contractor's profit) **1297.90****ABSTRACT:**

A. Cost of Materials including royalty charges	Rs.	74382.66
B. Hire charges of Machinery	Rs.	4875.15
C. Cost of Labour	Rs.	30844.45
	Total Rs.	110102.26

D. Add for contractor's profit and overheads on (A+B+C) 13.615% Rs: 14990.42  
 Total cost for 27.00 cum Rs: **125092.68**  
 Rate per cum (A+B+C+D)/27.0 Rs: **4633.10**

IRR-CAW-7-12 Providing and laying 100mm thick insitu vibrated M-10 (28 days cube compressive strength-not less than 10.00 N / sq mm) grade cement concrete using 40 mm down size approved, clean, hard, graded aggregates for bed and side lining of canal lining using vibrating cylindertype mechanical paver including cost of all materials mechiniery labour batching mixing placing in position forming contraction joints fixing pvc joint seiling strips shifting of paver from one side of canal to other side etc.complete with 1 km lead & all lifts.

(Cement content: 250 kg / cum for use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)

DATA: RATE ANALYSIS UNIT : 800 Sqm

**A. MATERIALS:**

Sl.No	Particulars	Unit	Qty	Rate in Rs	Amount
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1	Cement 43 Gr	Kg	22000.00	5.35	117700
2	Coarse aggregate 40 mm	cum	39.60	1175.00	46530
	Coarse aggregate 20 mm	cum	23.76	1225.00	29106
	Coarse aggregate 10 mm	cum	15.84	900.00	14256
3	Fine aggregate (Un-Screened)	cum	35.20	95.00	3344
4	Super plasticiser	kg	88.00	55.00	4840
5	PVC sealing strip	Rm	533.00	45.00	23985
6	Use rate of paving cylinder	sqm	800.00	0.878	702
	Total cost of Materials			Rs.	<b>240463.00</b>

**B. MACHINERY:**

Sl.No	Particulars	Unit	Qty	Rate in Rs	Amount
1	Batching plant	Hour	8.00	405.40	3243.2
2	Transit mixer 3 Nos	Hour	24.00	758.40	18201.6
	Fuel / Energy charges	Hour	24.00	872.70	20944.8
3	Mechanical paver	Hour	5.00	356.50	1782.5
	lubricants etc @ 5%	Hour	5.00	17.83	89.125
4	DG set for batching plant 50 KVA	Hour	8.00	85.10	680.8
	Fuel / Energy charges	Hour	8.00	952.10	7616.8
5	DG set for paver 30 KVA	Hour	8.00	65.80	526.4
	Fuel / Energy charges	Hour	8.00	634.70	5077.6
6	Shovel 0.5 cum / Loader	Hour	2.00	1003.10	2006.20
	Fuel / Energy charges	Hour	2.00	476.00	952.00
7	Water tanker	Hour	8.00	402.50	3220
	Fuel / Energy charges	Hour	8.00	299.90	2399.2
8	Pump 5 hp (diesel) 2 Nos. 4 hrs each	Hour	8.00	10.20	81.6
	Fuel / Energy charges	Hour	8.00	79.30	634.4
	Total hire charges of Machinery			Rs.	67456.23

<b>C. LABOUR:</b>					
Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Transit mixer	Hour	24.00	283.90	6813.60
3	Crew for Concrete paver	Hour	8.00	421.80	3374.40
4	Crew for DG set	Hour	16.00	131.80	2108.80
5	Crew for Shovel	Hour	2.00	236.60	473.20
6	Crew for Water tanker	Hour	8	177.50	1420.00
7	Crew for Pump	Hour	8	111.10	888.80
8	Mason Class I	Day	2	445.00	890.00
9	Mechanic	Day	1	475.00	475.00
10	Fitter	Day	1	475.00	475.00
11	Electrician	Day	1	515.00	515.00
12	work inspector	Day	2	450.00	900.00
13	mazdoor ( BP site )	Day	5	350.00	1750.00
14	mazdoor ( Paver site )	Day	10	350.00	3500.00
	Total cost of Labour			Rs:	<b>26308.60</b>

labour component/unit qty 32.90  
 Add contractor's profit and overhead charges 13.615% 4.50  
 labour component/unit qty (including contractor's profit) **37.40**

**ABSTRACT:**

A. Cost of Materials	Rs.	240463.00
B. Hire charges of Machinery	Rs.	67456.23
C. Cost of Labour	Rs.	<u>26308.60</u>
	TOTAL F	<u>334227.83</u>
Add for shifting & re-erection of BP @	2% Rs.	6684.56
Add for LH / RH shifting & erection of Paver @	0.5% Rs.	1671.14
Add for ledge cutting / erection of tracks etc @	1% Rs.	3342.28
	Total	Rs: <u>345925.81</u>
D. Add for contractor's profit and overheads on (A+B+C+other)	13.615%	Rs: 47097.8
Lead Charges for 1 Km for FA	35.20	cum @ 31.5 Rs./ 1108.8
Lead Charges for 1 Km for CA	79.20	cum @ 30.4 Rs./ 2407.68
Total cost for	800.00	Sqm Rs: <b>396540.9</b>
Rate per Sqm	(A+B+C+D)/800.0	Rs. <b>495.70</b>

IRR-CAW-7-13 Providing and laying insitu vibrated M-10 ( 28 days cube compressive strength not less than 10 N /sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates **for bed and side lining of canal** including finishing the junction of bed and sides to required curvature, cost of all materials, machinery, labour, formwork including supports, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete **with initial lead upto 50 m and all lifts.** (**Cement content : 250 kg / cum**)  
**(Cement content: 250 kg / cum for use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum)**

DATA

**RATE ANALYSIS****UNIT : 27.00 cum****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	6750	5.35	36112.5
2	Cement for incidentals @ 5 kg / cum	kg	135	5.35	722.25
3	Coarse aggregate 20-10 mm	cum	14.04	1225.00	17199
4	Coarse aggregate 10 mm below	cum	7.56	900.00	6804
5	Fine aggregate (Un-Screened)	cum	12.15	95.00	1154.25
6	Super Plasticizer	kg	27	55.00	1485
	Use rate of manual paver	sqm	270	27.62	7456.41
	Sundries	LS	2	30.00	60
Total cost of Materials				Rs:	<b>70993.41</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 600/400 ltr ( diesel )	Hour	16.00	92.70	1483.2
	Fuel / Energy charges	Hour	16.00	158.70	2539.2
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.1
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.5
	Fuel / Energy charges	Hour	1.00	299.90	299.9
4	Needle vibrator 40 mm dia ( petrol )	Hour	16.00	7.60	121.6
	Fuel / Energy charges	Hour	16.00	18.80	300.8
Total hire charges of Machinery				Rs:	<b>5191.95</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	16.00	219.70	3515.2
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.5
4	Crew for Vibrator	Hour	16.00	158.20	2531.20
5	Mason Class-I	Day	2.00	445.00	890
6	work inspector	Day	1.00	450.00	450
7	Fitter	Day	1.00	475.00	475
8	mazdoor for batching materials for loading mortar pans for laying and moving paver for conveying concrete for cleaning/ washing/ curing	Day	22.00	350.00	7700
		Day	8.00	350.00	2800
		Day	6.00	350.00	2100
		Day	27.00	350.00	9450
		Day	2.00	350.00	700
Total cost of Labour				Rs:	<b>30844.45</b>

labour component/unit qty 1142.40

Add contractor's profit and overhead charges 13.615% 155.50

labour component/unit qty (including contractor's profit) **1297.90****ABSTRACT:**

A. Cost of Materials	Rs: 70993.41
B. Hire charges of Machinery	Rs: 5191.95

C. Cost of Labour		Rs: 30844.45
	Total	Rs: 107029.81
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 14572.11
Total cost for	27.00 cum	Rs: 121601.92
Rate per cum	(A+B+C+D)/27.0	Rs. 4503.80

IRR-CAW-7-14 Providing and laying insitu vibrated M-15 ( 28 days cube compressive strength not less than 15 N /sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates **for bed and side lining of canal(150 mm thick)** including finishing the junction of bed and sides to required curvature, cost of all materials, machinery, labour, formwork including supports, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., **complete with initial lead upto 50 m and all lifts.**  
**(Cement content: 290 kg / cum for use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)**

## DATA

## RATE ANALYSIS

UNIT : **24.92** cum**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	7226.8	5.35	38663.38
2	Cement for incidentals @ 5 kg / cum	kg	124.6	5.35	666.61
	Coarse aggregate 40-20 mm	cum	11.21	1175.00	13176.45
	Coarse aggregate 20-10 mm	cum	6.73	1225.00	8242.29
3	Coarse aggregate 10 mm below	cum	4.49	900.00	4037.04
4	Fine aggregate (Un-Screened)	cum	9.97	95.00	946.96
5	Super Plasticizer	kg	28.91	55.00	1589.90
6	Use rate of manual paver	sqm	166.14	27.62	4588.18
	Sundries	LS	2	30.00	60.00
Total cost of Materials				Rs:	<b>71970.80</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 600/400 ltr ( diesel )	Hour	16.00	92.70	1483.20
	Fuel / Energy charges	Hour	16.00	158.70	2539.20
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 40 mm dia ( petrol )	Hour	16.00	7.60	121.60
	Fuel / Energy charges	Hour	16.00	18.80	300.80
Total hire charges of Machinery				Rs:	<b>5191.95</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	16.00	219.70	3515.2
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.5
4	Crew for Vibrator	Hour	16.00	158.20	2531.20
5	Mason Class-I	Day	2.00	445.00	890
6	work inspector	Day	1.00	450.00	450
7	Fitter	Day	1.00	475.00	475
8	mazdoor for batching materials for loading mortar pans for laying for conveying concrete for cleaning/ washing/ curing	Day	22.00 8.00 6.00 24.92 2.00	350.00 350.00 350.00 350.00 350.00	7700 2800 2100 8722 700
Total cost of Labour				Rs:	<b>30116.45</b>

labour component/unit qty		1208.50
Add contractor's profit and overhead charges	13.615%	164.50
labour component/unit qty (including contractor's profit)		<b>1373.00</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 71970.80
B. Hire charges of Machinery	Rs: 5191.95
C. Cost of Labour	Rs: 30116.45
	Total Rs: 107279.20
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 14606.06
Total cost for 24.92 cum	Rs: <b>121885.26</b>
<b>Rate per cum</b>	Rs. <b>4891.10</b>

IRR-CAW-7-15 Providing and laying insitu vibrated M-15 ( 28 days cube compressive strength not less than 15 N /sq mm ) grade cement concrete using 20 mm down size approved, clean, hard, graded aggregates for bed and side lining of canal(100 mm thick) including finishing the junction of bed and sides to required curvature, cost of all materials, machinery, labour, formwork including supports, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.  
**(Cement content: 300 kg / cum for use of super plasticiser(0.4% by wt. of cement), CA : 0.80 cum, Blending Ratio of CA--65:35, FA : 0.45 cum)**

## DATA

## RATE ANALYSIS

UNIT : **23.10 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	6930	5.35	37075.5
2	Cement for incidentals @ 5 kg / cum	kg	115.5	5.35	617.925
	Coarse aggregate 20-10 mm	cum	12.01	1225.00	14714.7
	Coarse aggregate 10 mm below	cum	6.47	900.00	5821.2
3	Fine aggregate (Un-Screened)	cum	10.40	95.00	987.525
4	Super Plasticizer	kg	27.72	55.00	1524.60
6	Use rate of manual paver	sqm	231	27.62	6379.37
7	Sundries	LS	2	30.00	60
Total cost of Materials				Rs:	<b>67180.82</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 600/400 ltr ( diesel )	Hour	16.00	92.70	1483.2
	Fuel / Energy charges	Hour	16.00	158.70	2539.2
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.1
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.5
	Fuel / Energy charges	Hour	1.00	299.90	299.9
4	Needle vibrator 40 mm dia ( petrol )	Hour	16.00	7.60	121.6
	Fuel / Energy charges	Hour	16.00	18.80	300.8
Total hire charges of Machinery				Rs:	<b>5191.95</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	16.00	219.70	3515.2
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.5
4	Crew for Vibrator	Hour	16.00	158.20	2531.2
5	Mason Class-I	Day	2.00	445.00	890
6	work inspector	Day	1.00	450.00	450
7	Fitter	Day	1.00	475.00	475
8	mazdoor				

for batching materials	Day	22.00	350.00	7700
for loading mortar pans	Day	8.00	350.00	2800
for laying and moving paver	Day	6.00	350.00	2100
for conveying concrete	Day	23.10	350.00	8085
for cleaning/ washing/ curing	Day	2.00	350.00	700
<b>Total cost of Labour</b>			<b>Rs:</b>	<b>29479.45</b>

labour component/unit qty 1276.20  
 Add contractor's profit and overhead charges 13.615% 173.80  
 labour component/unit qty (including contractor's profit) **1450.00**

**ABSTRACT:**

A. Cost of Materials	Rs: 67180.82
B. Hire charges of Machinery	Rs: 5191.95
C. Cost of Labour	Rs: 29479.45
	Total Rs: 101852.22
D. Add for contractor's profit and overheads on (A+B+C)	13.615% 13867.18
Total cost for	23.10 cum Rs: 115719.40
<b>Rate per cum</b>	(A+B+C+D)/23.10 Rs. 5009.50

- IRR-CAW-7-16 Providing and laying 150mm thick insitu vibrated M-15 (28 days cube compressive strength-not less than 15.00 N / sq mm) grade cement concrete using 20 mm down size approved, clean, hard, graded aggregates for bed and side lining of canal lining using vibrating cylindertype mechanical paver including cost of all materials mechinery labour batching mixing placing in position forming contraction joints fixing pvc joint sealing strips shifting of paver from one side of canal to other side etc.complete with 1km lead & all lifts.  
 (43 Gr Cement content: 300 kg /cum (45 kg/ sqm) for use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.44 cum equivalent concrete volume:132 cum including the extra quantity of concrete for curvatures and bends etc.)

DATA: **RATE ANALYSIS** UNIT : **800 Sqm**

**A. MATERIALS:**

Sl.No	Particulars	Unit	Qty	Rate in Rs	Amount
1	Cement 43 Gr	Kg	39600.00	5.35	211860
2	Coarse aggregate 20 mm	cum	68.64	1225.00	84084
	Coarse aggregate 10 mm	cum	36.96	900.00	33264
3	Fine aggregate (Un-Screened)	cum	58.08	95.00	5517.6
4	Super plasticiser	kg	158.40	55.00	8712
5	PVC sealing strip	Rm	533.00	45.00	23985
6	Use rate of paving cylinder	sqm	800.00	0.878	702
	Total cost of Materials			Rs.	<b>368124.60</b>

**B. MACHINERY:**

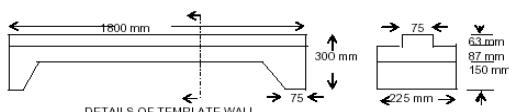
Sl.No	Particulars	Unit	Qty	Rate in Rs	Amount
1	Batching plant	Hour	8.00	405.40	3243.2
2	Transit mixer 3 Nos	Hour	24.00	758.40	18201.6
	Fuel / Energy charges	Hour	24.00	872.70	20944.8
3	Mechanical paver	Hour	5.00	356.50	1782.5
	lubricants etc @ 5%	Hour	5.00	17.83	89.125
4	DG set for batching plant 50 KVA	Hour	8.00	85.10	680.8
	Fuel / Energy charges	Hour	8.00	952.10	7616.8
5	DG set for paver 30 KVA	Hour	8.00	65.80	526.4
	Fuel / Energy charges	Hour	8.00	634.70	5077.6
6	Shovel 0.5 cum / Loader	Hour	2.00	1003.10	2006.20
	Fuel / Energy charges	Hour	2.00	476.00	952.00
7	Water tanker	Hour	8.00	402.50	3220
	Fuel / Energy charges	Hour	8.00	299.90	2399.2
8	Pump 5 hp (diesel) 2 Nos. 4 hrs each	Hour	8.00	10.20	81.6
	Fuel / Energy charges	Hour	8.00	79.30	634.4
	Total hire charges of Machinery			Rs.	<b>67456.23</b>

C. LABOUR:					
SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Batching plant	Hour	8.00	340.60	2724.80
2	Crew for Transit mixer	Hour	24.00	283.90	6813.60
3	Crew for Concrete paver	Hour	8.00	421.80	3374.40
4	Crew for DG set	Hour	16.00	131.80	2108.80
5	Crew for Shovel	Hour	2.00	236.60	473.20
6	Crew for Water tanker	Hour	8	177.50	1420.00
7	Crew for Pump	Hour	8	111.10	888.80
8	Mason Class I	Day	2	445.00	890.00
9	Mechanic	Day	1	475.00	475.00
10	Fitter	Day	1	475.00	475.00
11	Electrician	Day	1	515.00	515.00
12	work inspector	Day	2	450.00	900.00
13	mazdoor ( BP site )	Day	5	350.00	1750.00
14	mazdoor ( Paver site )	Day	10	350.00	3500.00
Total cost of Labour				Rs: <b>26308.60</b>	
labour component/unit qty				32.90	
Add contractor's profit and overhead charges				13.615% 4.50	
labour component/unit qty (including contractor's profit)				<b>37.40</b>	

**ABSTRACT**

A. Cost of Materials	Rs.	368124.60
B. Hire charges of Machinery	Rs.	67456.23
C. Cost of Labour	Rs.	<u>26308.60</u>
	TOTAL F	<u>461889.43</u>
Add for shifting & re-erection of BP @	2% Rs.	9237.79
Add for LH / RH shifting & erection of Paver @	0.5% Rs.	2309.45
Add for ledge cutting / erection of tracks etc @	1% Rs.	4618.89
	Total	<u>Rs: 478055.56</u>
D. Add for contractor's profit and overheads on (A+B+C+other	13.615%	Rs: 65087.26
Lead Charges for 1 Km for FA	58.08 cum @ 31.5 Rs./	1829.52
Lead Charges for 1 Km for CA	105.60 cum @ 30.4 Rs./	3210.24
Total cost for	800.00 Sqm	<b>Rs: 548182.58</b>
<b>Rate per Sqm</b>	(A+B+C+D)/800.0	<b>Rs. 685.20</b>

IRR-CAW-7-17 Providing and fixing pre-cast RCC template walls consisting of 0.05 cum M-15 grade concrete using 20 mm down size coarse aggregates and 10 kg reinforcement steel moulded as per specifications and drawing in CM 1:4 proportion including cost of all materials, machinery, labour, formwork, fabricating and placing reinforcement steel, mixing, laying, conveying and fixing in position including necessary excavation for seating, finishing joints in CM 1:4, curing etc., complete with initial lead upto 1 km and all lifts.

**DATA****RATE ANALYSIS**UNIT : **20.00 templete****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement 43 Gr	kg	310.00	5.35	1658.5
2	Sand (Un-Screened )	cum	0.50	95.00	47.5
3	Coarse aggregate 20-10 mm	cum	0.50	1225.00	612.5
	Coarse aggregate 10-4.75 mm	cum	0.30	900.00	270
4	Reinforcement steel	kg	200.00	34.00	6800
5	Binding wire	kg	3.00	60.00	180
6	Use rate of mould	set	20.00	58.09	1161.7956

7	Sundries( water charges & misc. )	LS	1.00	30.00	30
	Total cost of Materials			Rs:	<b>10760.30</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hand mixer	Hour	8.00	5.50	44
			8.00	0.00	0
	Total hire charges of Machinery			Rs:	<b>44.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450
2	Mason Class I for fixing	Day	1.00	445.00	445
3	Mason Class II for casting	Day	2.00	400.00	800
4	Bar bender	Day	1.00	555.00	555
5	mazdoor ( casting yard )	Day	4.00	350.00	1400
	mazdoor ( for fixing )	Day	2.00	350.00	700
	mazdoor for conveying	Day	2.00	350.00	700
	Total cost of Labour			Rs:	<b>5050.00</b>

labour component/unit qty 252.50

Add contractor's profit and overhead charges 13.615% 34.40

labour component/unit qty (including contractor's profit) **286.90****ABSTRACT:**

A. Cost of Materials including serignorage charges	Rs:	10760.30
B. Hire charges of Machinery	Rs:	44.00
C. Cost of Labour	Rs:	<u>5050.00</u>
	Total	Rs: <u>15854.30</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 2158.56
Lead Charges for 1 Km for FA	0.50	cum @ 31.5 Rs./ 15.75
Lead Charges for 1 Km for CA	0.80	cum @ 30.4 Rs./ 24.32
Lead Charges for 1Km for Steel (including Loading and Unloading Charges)	0.20	tonne @ 168.6 Rs 33.72
Total cost for	20.00 template	Rs: <b>18086.65</b>
Rate per template	(A+B+C+D)/20.0	Rs. <b>904.30</b>

IRR-CAW-7-18 Providing and fixing 50 mm dia perforated GI pressure relief pipes 12.50 cm long with one end closed with perforated GI plate and other end provided with alluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., **complete with all leads and lifts.**

**DATA****RATE ANALYSIS**UNIT : **10 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	GI pipe 50 mm dia 10 Nos	Rm	1.25	310.00	387.5
2	GI plate & Alluminium lid ( hinged )	LS	10.00	30.00	300
	Total cost of Materials			Rs:	<b>687.50</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling 8 mm dia holes	LS	0.50	30.00	15
	Total hire charges of Machinery			Rs:	<b>15.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	Pipe fitter mazdoor	Day Day	0.50 0.50	510.00 350.00	255 175
Total cost of Labour				Rs:	<b>430.00</b>
labour component/unit qty			43.00		
Add contractor's profit and overhead charges			13.615% 5.90		
labour component/unit qty (including contractor's profit)			<b>48.90</b>		

**ABSTRACT:**

A. Cost of Materials	Rs: 687.50
B. Hire charges of Machinery	Rs: 15.00
C. Cost of Labour	Rs: 430.00
Total	Rs: 1132.50
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 154.19
Total cost for 10.00 Nos.	Rs: <b>1286.69</b>
Rate per each (A+B+C+D)/10.0	Rs. <b>128.70</b>

- IRR-CAW-7-19 Providing and fixing 50 mm dia perforated GI pressure relief pipes 22.50 cm long with one end closed with perforated GI plate and other end provided with alluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., complete with all leads and lifts.

DATA

RATE ANALYSIS

UNIT : 10 Nos.

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	GI pipe 50 mm dia 10 Nos	Rm	2.25	310.00	697.5
2	GI plate & Alluminium lid ( hinged )	LS	10.00	30.00	300
Total cost of Materials				Rs:	<b>997.50</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling 8 mm dia holes	LS	5.00 0.00	30.00	150
Total hire charges of Machinery				Rs:	<b>150.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Pipe fitter mazdoor	Day Day	0.50 0.50	510.00 350.00	255 175
Total cost of Labour				Rs:	<b>430.00</b>

labour component/unit qty	43.00
Add contractor's profit and overhead charges	13.615% 5.90
labour component/unit qty (including contractor's profit)	<b>48.90</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 997.50
B. Hire charges of Machinery	Rs: 150.00
C. Cost of Labour	Rs: 430.00
Total	Rs: 1577.50
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 214.78
Total cost for 10.00 Nos.	Rs: <b>1792.28</b>
Rate per No. (A+B+C+D)/10.0	Rs. <b>179.20</b>

- IRR-CAW-7-20 Providing and fixing 50 mm dia perforated GI pressure relief pipes 30 cm long with one end closed with perforated GI plate and other end provided with alluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., complete with all leads and lifts.

## DATA

## RATE ANALYSIS

UNIT : **10 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	GI pipe 50 mm dia 10 Nos	Rm	3.00	310.00	930.00
2	GI plate & Alluminium lid ( hinged )	LS	10.00	30.00	300.00
Total cost of Materials				Rs:	<b>1230.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling 8 mm dia holes	LS	7.00 0.00	30.00	210.00
Total hire charges of Machinery				Rs:	<b>210.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Pipe fitter mazdoor	Day Day	0.50 0.50	510.00 350.00	255.00 175.00
Total cost of Labour				Rs:	<b>430.00</b>

labour component/unit qty

43.00

Add contractor's profit and overhead charges

13.615% 5.90

labour component/unit qty (including contractor's profit)

**48.90****ABSTRACT:**

A. Cost of Materials	Rs:	1230.00
B. Hire charges of Machinery	Rs:	210.00
C. Cost of Labour	Rs:	430.00
Total	Rs:	<u>1870.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	254.6
Total cost for	10.00 Nos.	Rs: <b>2124.60</b>
Rate per No.	(A+B+C+D)/10.0	Rs. <b>212.50</b>

- IRR-CAW-7-21 Providing and fixing 50 mm dia perforated GI pressure relief pipes 45 cm long with one end closed with perforated GI plate and other end provided with alluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., complete with all leads and lifts.

## DATA

## RATE ANALYSIS

UNIT : **10 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	GI pipe 50 mm dia 10 Nos	Rm	4.50	310.00	1395.00
2	GI plate & Alluminium lid ( hinged )	LS	10.00	30.00	300.00
Total cost of Materials				Rs:	<b>1695.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling 8 mm dia holes	LS	10.00 0.00	30.00	300.00
Total hire charges of Machinery				Rs:	<b>300.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Pipe fitter mazdoor	Day Day	0.50 0.50	510.00 350.00	255.00 175.00

Total cost of Labour	Rs: <b>430.00</b>
labour component/unit qty	43.00
Add contractor's profit and overhead charges	13.615% 5.90
labour component/unit qty (including contractor's profit)	<b>48.90</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 1695.00
B. Hire charges of Machinery	Rs: 300.00
C. Cost of Labour	Rs: 430.00
Total	Rs: <u>2425.00</u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 330.16
Total cost for 10.00 Nos.	Rs: <b>2755.16</b>
Rate per No. (A+B+C+D)/10.0	Rs. <b>275.50</b>

- IRR-CAW-7-22 Providing and **fixing 50 mm dia perforated GI pressure relief pipes 75 cm long** with one end closed with perforated GI plate and other end provided with alluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., complete with all **leads and lifts**.

DATA

**RATE ANALYSIS**UNIT : **10 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	GI pipe 50 mm dia	Rm	7.50	310.00	2325.00
2	GI plate & Alluminium lid ( hinged )	LS	10.00	30.00	300.00
Total cost of Materials				Rs: <b>2625.00</b>	

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Drilling 8 mm dia holes	LS	15.00	30.00	450.00
Total hire charges of Machinery				Rs: <b>450.00</b>	

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Pipe fitter	Day	0.50	510.00	255.00
2	mazdoor	Day	0.50	350.00	175.00
Total cost of Labour				Rs: <b>430.00</b>	

labour component/unit qty	43.00
Add contractor's profit and overhead charges	13.615% 5.90
labour component/unit qty (including contractor's profit)	<b>48.90</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 2625.00
B. Hire charges of Machinery	Rs: 450.00
C. Cost of Labour	Rs: 430.00
Total	Rs: <u>3505.00</u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 477.21
Total cost for 10.00 Nos.	Rs: <b>3982.21</b>
Rate per No. (A+B+C+D)/10.0	Rs. <b>398.20</b>

- IRR-CAW-7-23 Providing and **fixing 100 mm dia perforated PVC pipes 40 cm long for Weep holes** including cost of all materials, labour, drilling 8 mm dia holes etc. complete with all **leads and lifts**.

DATA

**RATE ANALYSIS**UNIT: **10 Nos.**

**A. MATERIALS:**

Sl.No	Particulars	Unit	Qty	Rate in Rs	Amount in Rs.
1	PVC pipe 100 mm dia 10 Nos	Rm	10.00	170.00	1700.00
Total cost of Materials					Rs. <b>1700.00</b>

**B. MACHINERY**

Sl.No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	
			0.00	0.00	
Total hire charges of Machinery					Rs. 0.00

**C. LABOUR**

Sl.No	Particulars	Unit	Qty	Rate in Rs	Amount in Rs.
1	Pipe fitter	Day	0.25	510.00	127.50
2	Mazdoor	Day	0.25	350.00	87.50
Total cost of Labour					Rs. <b>215.00</b>

labour component/unit qty 21.50

Add contractor's profit and overhead charges 13.615% 2.90

labour component/unit qty (including contractor's profit) **24.40****ABSTRACT**

A. Cost of Materials	Rs.	1700.00
B. Hire charges of Machinery	Rs.	0.00
C. Cost of Labour	Rs.	215.00
Total	Rs:	<b>1915.00</b>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 260.73
Total cost for	10.00 Nos.	Rs: <b>2175.73</b>
Rate per No.	(A+B+C+D)/10.0	Rs. <b>217.60</b>

IRR-CAW-7-24 **Drilling 32 mm dia pressure relief hole below pressure relief pipe** for bed and side lining of canal laid on rock including cost of all materials, machinery, labour etc., complete with all leads and lifts.

DATA:

**RATE ANALYSIS**UNIT : **10 Nos.****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of drill rod 1.6 m long	Rm	10.00	26.85	268.53
	Reconditioning charges @		10%		26.85
2	Use rate of air hose 2 Nos.	Hour	2.00	11.56	23.13
Total cost of Materials					Rs: <b>318.51</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor 8.5 cmm diesel	Hour	1.00	275.60	275.60
	Fuel / Energy charges	Hour	1.00	892.50	892.50
2	Jack hammer 2 Nos.	Hour	2.00	19.80	39.60
	Fuel / Energy charges	Hour	2.00	0.00	0.00
Total hire charges of Machinery					Rs: <b>1207.70</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Air compressor	Hour	1.00	210.90	210.90
2	Crew for Jack hammer	Hour	2.00	329.60	659.20
Total cost of Labour					Rs: <b>870.10</b>

labour component/unit qty 87.00

Add contractor's profit and overhead charges 13.615% 11.80

labour component/unit qty (including contractor's profit) **98.80**

**ABSTRACT:**

A. Cost of Materials	Rs: 318.51
B. Hire charges of Machinery	Rs: 1207.70
C. Cost of Labour	Rs: 870.10
Total	Rs: <u>2396.31</u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 326.26
Total cost for	10.00 Nos.	Rs: <b>2722.57</b>
<b>Rate per No.</b>	(A+B+C+D)/10.0	Rs. <b>272.30</b>

IRR-CAW-7-25 Providing and forming **35 x 35 x 40 cm deep filter drain** consisting of 75 mm thick 10 mm down coarse aggregate around pressure relief pipe and 75 mm thick sand around coarse aggregate filter including cost of all materials, labour, excavation of pit etc., complete with **lead upto 50 m and all lifts.**

DATA

**RATE ANALYSIS**UNIT : **10 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Coarse aggregate 10-4.75 mm	cum	0.15	900.00	135.00
2	Sand (Un-Screened )	cum	0.35	95.00	33.25
Total cost of Materials					Rs: <b>168.25</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	
Total hire charges of Machinery					Rs: <b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	0.10	400.00	40.00
2	mazdoor	Day	0.10	350.00	35.00
Total cost of Labour					Rs: <b>75.00</b>

labour component/unit qty **7.50**Add contractor's profit and overhead charges **13.615% 1.00**labour component/unit qty (including contractor's profit) **8.50****ABSTRACT:**

A. Cost of Materials	Rs: 168.25
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 75.00
Total	Rs: <u>243.25</u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 33.12
Total cost for	10.00 Nos.	Rs: <b>276.37</b>
<b>Rate per No.</b>	(A+B+C+D)/10.0	Rs. <b>27.60</b>

IRR-CAW-7-26 Providing and fixing **25 to 40 mm thick Shahabad / Talikota / other similar stone slabs**

with **pointing and finishing joints** neatly in **CM 1:3** proportion for canal / field channel lining including cutting slabs to required size, mixing mortar, finishing joints neatly, curing etc., **complete with lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Shahabad Stone slabs	sqm	105.00	235.00	24675.00

2	Cement 43 Gr	kg	200.00	5.35	1070.00
3	Sand (Screened )	cum	0.40	165.00	66.00
Total cost of Materials				Rs:	<b>25811.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	5 hp pump ( diesel )	Hour	2.00	10.20	20.40
Fuel / Energy charges				2.00	79.30 158.60
Total hire charges of Machinery				Rs:	<b>179.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Operator pump	Hour	2.00	111.10	222.20
2	work inspector	Day	1.00	450.00	450.00
3	Mason Class I	Day	4.00	445.00	1780.00
4	Mason Class II	Day	2.00	400.00	800.00
5	mazdoor	Day	8.00	350.00	2800.00
6	Cartman with Double Bullock cart for water	Day	1.00	465.00	465.00
Total cost of Labour				Rs:	<b>6517.20</b>

labour component/unit qty 65.20

Add contractor's profit and overhead charges 13.615% 8.90

labour component/unit qty (including contractor's profit) **74.10****ABSTRACT:**

A. Cost of Materials	Rs:	25811.00
B. Hire charges of Machinery	Rs:	179.00
C. Cost of Labour	Rs:	<u>6517.20</u>
Total	Rs:	<u>32507.20</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 4425.86
Total cost for	100.00 sqm	Rs: <b>36933.06</b>
Rate per sqm	(A+B+C+D)/100.0	Rs. <b>369.30</b>

IRR-CAW-7-27 **Fixing PCC slabs** of various sizes in **CM 1 : 3** proportion to the side slopes of canal including preparing bed, flush pointing joints in CM 1 : 3 propn, cost of all materials ( excluding PCC slabs ), labour, finishing, curing etc., complete **with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement 43 Gr	kg	240.00	5.35	1284.00
2	Sand (Screened)	cum	0.50	165.00	82.50
Total cost of Materials				Rs:	<b>1366.50</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	5 hp pump ( diesel )	Hour	2.00	10.20	20.40
Fuel / Energy charges				2.00	79.30 158.60
Total hire charges of Machinery				Rs:	<b>179.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Operator pump	Hour	2.00	111.10	222.20
2	work inspector	Day	1.00	450.00	450.00
3	Mason Class I	Day	4.00	445.00	1780.00
4	mazdoor	Day	9.00	350.00	3150.00
5	Cartman with Double Bullock cart for water	Day	1.00	465.00	465.00

Total cost of Labour	Rs:	<b>6067.20</b>
labour component/unit qty	60.70	
Add contractor's profit and overhead charges	13.615% 8.30	
labour component/unit qty (including contractor's profit)	<b>69.00</b>	

**ABSTRACT:**

A. Cost of Materials	Rs:	1366.50
B. Hire charges of Machinery	Rs:	179.00
C. Cost of Labour	Rs:	6067.20
	Total	Rs: <u>7612.70</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 1036.47
Total cost for	100.00 sqm	Rs: <b>8649.17</b>
<b>Rate per sqm</b>	(A+B+C+D)/100.0	Rs. <b>86.50</b>

IRR-CAW-7-28 Fixing PCC lug slabs of various sizes in CM 1 : 3 proportion for supporting PCC slab lining including necessary excavation, refilling, flush pointing joints in CM 1 : 3 propn, cost of all materials ( excluding PCC lug slabs ), labour, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

DATA:

RATE ANALYSIS

UNIT : **100.00 Rm****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement 43 Gr	kg	58.00	5.35	310.30
2	Sand ( Screened)	cum	0.12	165.00	19.80
Total cost of Materials				Rs:	<b>330.10</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	5 hp pump ( diesel ) Fuel / Energy charges	Hour	1.00	10.20	10.20
		Hour	1.00	79.30	79.30
Total hire charges of Machinery				Rs:	<b>89.50</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Operator pump	Hour	1.00	111.10	111.10
2	work inspector	Day	1.00	450.00	450.00
3	Mason Class I	Day	2.00	445.00	890.00
4	Mason Class II	Day	1.00	400.00	400.00
5	mazdoor	Day	5.00	350.00	1750.00
6	Cartman with Double Bullock cart for water	Day	1.00	465.00	465.00
Total cost of Labour				Rs:	<b>4066.10</b>

labour component/unit qty	40.70	
Add contractor's profit and overhead charges	13.615% 5.50	
labour component/unit qty (including contractor's profit)	<b>46.20</b>	

**ABSTRACT:**

A. Cost of Materials	Rs:	330.10
B. Hire charges of Machinery	Rs:	89.50
C. Cost of Labour	Rs:	4066.10
	Total	Rs: <u>4485.70</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 610.73
Total cost for	100.00 Rm	Rs: <b>5096.43</b>
<b>Rate per Rm</b>	(A+B+C+D)/100.0	Rs. <b>51.00</b>

IRR-CAW-7-29 Fixing 30 cm height pre-cast drops for field channels as directed including excavation, etc., complete with all leads and lifts.

DATA:

**RATE ANALYSIS**UNIT : **7 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Cl- II	Day	1.00	400.00	400.00
3	mazdoor	Day	1.00	350.00	350.00
Total cost of Labour				Rs:	<b>1200.00</b>

labour component/unit qty 171.40

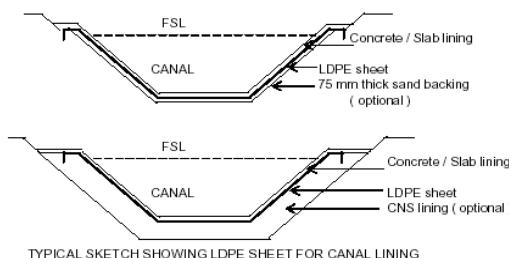
Add contractor's profit and overhead charges 13.615% 23.30

labour component/unit qty (including contractor's profit) **194.70****ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: <u>1200.00</u>
Total	Rs: <u>1200.00</u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 163.38
Total cost for 7.00 Nos.	Rs: <b>1363.38</b>
Rate per No. (A+B+C+D)/7.00	Rs. <b>194.80</b>

IRR-CAW-7-30 Providing and fixing LDPE sheet for bed and sides of canal including cost of all materials, labour, laying, joining etc., complete with all leads and lifts.

- a. Using 500 micron thick LDPE sheet.



TYPICAL SKETCH SHOWING LDPE SHEET FOR CANAL LINING

DATA:

**RATE ANALYSIS**UNIT : **250.00 sqm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	LDPE sheet 500 micron thick	sqm	275.00	92.00	25300.00
2	Bitumen 85 / 25 and 80 / 100 Gr	kg	4.00	46.00	184.00

Total cost of Materials	Rs: <b>25484.00</b>
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**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Joining & laying @ 10 % of sheet cost	sqm Day	250.00 1.00	9.20 350.00	2300.00 350.00
	Total cost of Labour			Rs:	<b>2650.00</b>

labour component/unit qty 10.60  
 Add contractor's profit and overhead charges 13.615% 1.40  
 labour component/unit qty (including contractor's profit) **12.00**

**ABSTRACT:**

A. Cost of Materials	Rs: 25484.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2650.00
	Total Rs: 28134.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 3830.44
Total cost for	250.00 sqm Rs: 31964.44
Rate per sqm	(A+B+C+D)/250.0 Rs. 127.90

Note : i ) If the surface on which the LDPE sheet is to be laid is too rough and undulating provide average 75 mm thick sand backing to LDPE sheet.

For providing average 75 mm thick sand backing :

DATA: Quantity of sand ( unscreened ) ( 250 x 0.075 ) 18.75 cum  
 2 mazdoors for laying 6 cum per day.

**RATE ANALYSIS**UNIT : **250.00** sqm**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Sand for filling	cum	18.75 0.00	95.00 0.00	1781.25
	Total cost of Materials			Rs:	<b>1781.25</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	mazdoor	Day	6.00	350.00	2100.00
	Total cost of Labour			Rs:	<b>2100.00</b>

labour component/unit qty 8.40  
 Add contractor's profit and overhead charges 13.615% 1.10  
 labour component/unit qty (including contractor's profit) **9.50**

**ABSTRACT:**

A. Cost of Materials	Rs: 1781.25
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2100.00
	Total Rs: 3881.25

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	528.43
Total cost for	250.00 sqm	Rs:	<b>4409.68</b>
Rate per sqm	(A+B+C+D)/250.0	Rs.	<b>17.60</b>

IRR-CAW-7-31 Providing and fixing LDPE sheet for bed and sides of canal including cost of all materials, labour, laying, joining etc., complete with all leads and lifts.

b. Using 750 micron thick LDPE sheet.

DATA:

RATE ANALYSIS

UNIT : 250.00 sqm

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	LDPE sheet 750 micron thick		275.00	135.00	37125.00
2	Bitumen 85 / 25 and 80 / 100 Gr		4.00	46.00	184.00
Total cost of Materials					Rs: <b>37309.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	
Total hire charges of Machinery					Rs: <b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Joining & laying @ 10 % of sheet cost	sqm	250.00	13.50	3375.00
2	mazdoor	Day	1.00	350.00	350.00
Total cost of Labour					Rs: <b>3725.00</b>

labour component/unit qty	14.90
Add contractor's profit and overhead charges	13.615% 2.00
labour component/unit qty (including contractor's profit)	<b>16.90</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 37309.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 3725.00
Total	Rs: 41034.00

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 5586.78
Total cost for	250.00 sqm	Rs: <b>46620.78</b>
Rate per sqm	(A+B+C+D)/250.0	Rs. <b>186.50</b>

Note : i ) If the surface on which the LDPE sheet is to be laid is too rough and undulating provide average 75 mm thick unscreened sand backing to LDPE sheet.  
For providing average 75 mm thick sand backing per sqm Rs: 17.60

IRR-CAW-7-32 Providing and fixing LDPE sheet for bed and sides of canal including cost of all materials, labour, laying, joining etc., complete with all leads and lifts.

c. Using 1000 micron thick LDPE sheet.

DATA:

RATE ANALYSIS

UNIT : 250.00 sqm

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	LDPE sheet 1000 micron thick		275.00	185.00	50875.00
2	Bitumen 85 / 25 and 80 / 100 Gr		4.00	46.00	184.00
Total cost of Materials					Rs: <b>51059.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Joining & laying @ 10 % of sheet cost	sqm	250.00	18.50	4625.00
2	mazdoor	Day	1.00	350.00	350.00
Total cost of Labour				Rs:	<b>4975.00</b>

labour component/unit qty 19.90  
 Add contractor's profit and overhead charges 13.615% 2.70  
 labour component/unit qty (including contractor's profit) **22.60**

**ABSTRACT:**

A. Cost of Materials	Rs:	51059.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	4975.00
Total	Rs:	<u>56034.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 7629.03
Total cost for	250.00 sqm	Rs: <b>63663.03</b>
Rate per sqm	(A+B+C+D)/250.0	Rs. <b>254.70</b>

Note : i ) If the surface on which the LDPE sheet is to be laid is too rough and undulating provide average 75 mm thick unscreened sand backing to LDPE sheet.  
 For providing average 75 mm thick sand backing per sqm Rs: 17.60

IRR-CAW-7-33 Providing and fixing 12 mm thick 380 mm depth tarfelt expansion joint filler boards for stone masonry lining of canal including cost of all materials, labour etc., complete with all leads and lifts.

DATA

## RATE ANALYSIS

UNIT : **100.00** Rm**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tarfelt joint filler board 12 mm thick	sqm	38.75 0.00	415.00 0.00	16081.25
Total cost of Materials				Rs:	<b>16081.25</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	
			0.00	0.00	
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Carpenter Cl- II	Day	1.00	400.00	400.00
2	mazdoor	Day	1.00	350.00	350.00
Total cost of Labour				Rs:	<b>750.00</b>

labour component/unit qty 7.50  
 Add contractor's profit and overhead charges 13.615% 1.00  
 labour component/unit qty (including contractor's profit) **8.50**

**ABSTRACT:**

A. Cost of Materials Rs: 16081.25

B. Hire charges of Machinery		Rs:	0.00
C. Cost of Labour		Rs:	750.00
	Total	Rs:	<u>16831.25</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	2291.57
Total cost for	100.00 Rm	Rs:	<b>19122.82</b>
Rate per Rm	(A+B+C+D)/100.00	Rs.	<b>191.20</b>

IRR-CAW-7-34 Providing and fixing 20 mm thick 100 mm depth tarfelt expansion joint filler boards for cement concrete lining of canal including cost of all materials, labour etc., complete with all leads and lifts.

DATA RATE ANALYSIS UNIT : 100.00 Rm

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tarfelt joint filler board 20 mm thick	sqm	10.00 0.00	630.00 0.00	6300.00 0.00
Total cost of Materials				Rs:	<b>6300.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Carpenter Cl- II	Day	1.00	400.00	400.00
2	mazdoor	Day	1.00	350.00	350.00
Total cost of Labour				Rs:	<b>750.00</b>

labour component/unit qty	7.50
Add contractor's profit and overhead charges	13.615% 1.00
labour component/unit qty (including contractor's profit)	<u>8.50</u>

**ABSTRACT:**

A. Cost of Materials		Rs:	6300.00
B. Hire charges of Machinery		Rs:	0.00
C. Cost of Labour		Rs:	750.00
	Total	Rs:	<u>7050.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	959.86
Total cost for	100.00 Rm	Rs:	<b>8009.86</b>
Rate per Rm	(A+B+C+D)/100.00	Rs.	<b>80.10</b>

IRR-CAW-7-35 Providing and fixing 20 mm thick 150 mm depth tarfelt expansion joint filler boards for cement concrete lining of canal including cost of all materials, labour etc., complete with all leads and lifts.

DATA: RATE ANALYSIS UNIT : 100.00 Rm

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tarfelt joint filler board 20 mm thick	sqm	15.30 0.00	630.00 0.00	9639.00
Total cost of Materials				Rs:	<b>9639.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Carpenter Cl- II	Day	1.00	400.00	400.00
2	mazdoor	Day	1.00	350.00	350.00
	Total cost of Labour			Rs:	<b>750.00</b>

labour component/unit qty 7.50  
 Add contractor's profit and overhead charges 13.615% 1.00  
 labour component/unit qty (including contractor's profit) **8.50**

**ABSTRACT:**

A. Cost of Materials	Rs: 9639.00	
B. Hire charges of Machinery	Rs: 0.00	
C. Cost of Labour	Rs: 750.00	
	Total Rs: 10389.00	
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 1414.46	
Total cost for 100.00 Rm	Rs: <b>11803.46</b>	
<b>Rate per Rm</b>	(A+B+C+D)/100.00	Rs. <b>118.00</b>

IRR-CAW-7-36 Providing and forming 35 mm wide and 10 mm thick construction / contraction joints for concrete lining by mastic filler including cost of all materials, labour etc., complete with all leads and lifts.

DATA:

**RATE ANALYSIS**UNIT : **100.00** Rm**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Asphalt 80/100 Gr Sand (Screened )	kg cum	35.00 0.04	46.00 165.00	1610.00 6.60
	Total cost of Materials			Rs:	<b>1616.60</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00 0.00	0.00 0.00	
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	0.50	400.00	200.00
2	mazdoor	Day	1.00	350.00	350.00
	Total cost of Labour			Rs:	<b>550.00</b>

labour component/unit qty 5.50  
 Add contractor's profit and overhead charges 13.615% 0.70  
 labour component/unit qty (including contractor's profit) **6.20**

**ABSTRACT:**

A. Cost of Materials	Rs: 1616.60
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 550.00
	Total Rs: 2166.60
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 294.98
Total cost for 100.00 Rm	Rs: <b>2461.58</b>

Rate per	Rm	(A+B+C+D)/100.00	Rs.	<b>24.60</b>
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**IRR-CAW-7-37 Manufacturing 550 x 550 x 55 mm size PCC lining slabs in M-15 grade ( 28 days cube compressive strength not less than 15 N /sqmm ) cement concrete using 20 mm down graded coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc.,complete with initial lead upto 50 m and all lifts.  
( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.80 cum, Blending Ratio of CA : 65:35, FA : 0.45cum equivalent concrete volume: 3.74 cum)**

DATA:

**RATE ANALYSIS****UNIT : 225 Nos.****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	1122.00	5.35	6002.70
	Cement for incidentals @ 1 kg / slab	kg	225.00	5.35	1203.75
2	Coarse aggregate 20-10 mm	cum	1.94	1225.00	2382.38
3	Coarse aggregate 10 mm below	cum	1.05	900.00	942.48
	Fine aggregate (Un-Screened )	cum	1.68	95.00	159.89
4	Super Plasticizer	kg	4.49	55.00	246.84
5	Use rate of moulds for 500 uses	No.	225.00	5.66	1273.79
Total cost of Materials				Rs:	<b>12211.82</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel)	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.10	10.20	1.02
	Fuel / Energy charges	Hour	0.10	79.30	7.93
3	Water tanker 8000 ltr	Hour	0.20	402.50	80.50
	Fuel / Energy charges	Hour	0.20	299.90	59.98
Total hire charges of Machinery				Rs:	<b>1211.83</b>
Apportioned hire charges of machinery for lining slab				90%	Rs: <b>1090.65</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.10	111.10	11.11
3	Crew for Water tanker	Hour	0.20	177.50	35.50
4	Mason Class-I	Day	2.00	445.00	890.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials / laying CC for demoulding / oiling / laying for shifting slabs to curing pond for stacking after curing for cleaning & miscellaneous	Day	3.00	350.00	1050.00
		Day	2.00	350.00	700.00
		Day	1.00	350.00	350.00
		Day	1.00	350.00	350.00
		Day	1.00	350.00	350.00
Total cost of Labour				Rs:	<b>5944.21</b>
Apportioned cost of labour for lining slabs				90%	Rs: <b>5349.79</b>

labour component/unit qty	23.80
Add contractor's profit and overhead charges	13.615% 3.20
labour component/unit qty (including contractor's profit)	<b>27.00</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 12211.82
B. Hire charges of Machinery	Rs: 1090.65
C. Cost of Labour	Rs: 5349.79
Total	Rs: <b>18652.26</b>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	2539.51
Total cost for	225.00 Nos.	Rs:	<b>21191.77</b>
Rate per each	(A+B+C+D)/225.0	Rs.	<b>94.20</b>

IRR-CAW-7-38 **Manufacturing 550 x 300 x 55 mm size PCC lug slabs in M-15 grade ( 28 days cube compressive strength not less than 15 N / sqmm ) cement concrete using 20 mm down graded coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc., complete with initial lead upto 50 m and all lifts. ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.80 cum, Blending Ratio of CA : 65:35, FA : 0.45cum, equivalent concrete volume: 0.23 cum)**

DATA:

**RATE ANALYSIS****UNIT :****25 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	69.00	5.35	369.15
					66.88
2	Cement for incidentals @ 0.5 kg/slab	kg	12.50	5.35	
	Coarse aggregate 20-10 mm	cum	0.12	1225.00	146.51
	Coarse aggregate 10 mm below	cum	0.06	900.00	57.96
3	Fine aggregate (Un-Screened )	cum	0.10	95.00	9.83
4	Super Plasticizer	kg	0.28	55.00	15.18
5	Use rate of moulds for 500 uses	No.	25.00	3.51	87.77
Total cost of Materials				Rs:	<b>753.28</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel)	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.10	10.20	1.02
	Fuel / Energy charges	Hour	0.10	79.30	7.93
3	Water tanker 8000 ltr	Hour	0.20	402.50	80.50
	Fuel / Energy charges	Hour	0.20	299.90	59.98
Total hire charges of Machinery				Rs:	<b>1211.83</b>
Apportioned hire charges of machinery for lug slabs				10%	Rs: <b>121.18</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.10	111.10	11.11
3	Crew for Water tanker	Hour	0.20	177.50	35.50
4	Mason Class-I	Day	2.00	445.00	890.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials / laying CC for demoulding / oiling / laying for shifting slabs to curing pond for stacking after curing for cleaning & miscellaneous	Day	3.00	350.00	1050.00
		Day	2.00	350.00	700.00
		Day	1.00	350.00	350.00
		Day	1.00	350.00	350.00
		Day	1.00	350.00	350.00
Total cost of Labour				Rs:	<b>5944.21</b>
Apportioned cost of labour for lug slabs				10%	Rs: <b>594.42</b>

labour component/unit qty	23.80
Add contractor's profit and overhead charges	13.615% 3.20
labour component/unit qty (including contractor's profit)	<b>27.00</b>

**ABSTRACT:**

A. Cost of Materials Rs: 753.28

B. Hire charges of Machinery	Rs: 121.18
C. Cost of Labour	Rs: 594.42
	Total Rs: 1468.89
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 199.99
Total cost for 25.00 Nos.	Rs: 1668.88
Rate per each (A+B+C+D)/25.0	Rs. 66.80

IRR-CAW-7-39 **Manufacturing 450 x 300 x 30 mm size PCC lining slabs in M-15 grade ( 28 days cube compressive strength not less than 15 N / sqmm ) cement concrete using 10 mm down graded coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc., complete with initial lead upto 50 m and all lifts. ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.68 cum, FA : 0.43cum)**

DATA:

**RATE ANALYSIS**

UNIT : 225 Nos.

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	270.00	5.35	1444.50
	Cement for incidentals @ 0.5 kg/slab	kg	112.50	5.35	601.88
2	Coarse aggregate 10 mm below	cum	0.61	900.00	550.80
3	Fine aggregate (Un-Screened )	cum	0.39	95.00	36.77
4	Super Plasticizer	kg	1.08	55.00	59.40
5	Use rate of moulds for 250 uses	No.	225.00	2.34	525.75
Total cost of Materials				Rs:	3219.09

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hand mixer 45 / 30 ltr	Hour	8.00	5.50	44.00
	Fuel / Energy charges	Hour	8.00	0.00	0.00
2	5 hp pump ( diesel )	Hour	0.10	10.20	1.02
	Fuel / Energy charges	Hour	0.10	79.30	7.93
3	Water tanker 8000 ltr	Hour	0.20	402.50	80.50
	Fuel / Energy charges	Hour	0.20	299.90	59.98
Total hire charges of Machinery				Rs:	193.43
Apportioned hire charges of machinery for lining slab				90%	Rs: 174.09

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Pump	Hour	0.10	111.10	11.11
2	Crew for Water tanker	Hour	0.20	177.50	35.50
3	Mason Class-I	Day	2.00	445.00	890.00
4	work inspector	Day	1.00	450.00	450.00
5	mazdoor for batching / mixing / laying for demoulding / cleaning / oiling for shifting slabs to curing pond for stacking after curing for cleaning & miscellaneous	Day	2.00 2.00 1.00 1.00 1.00	350.00 350.00 350.00 350.00 350.00	700.00 700.00 350.00 350.00 350.00
Total cost of Labour				Rs:	3836.61
Apportioned cost of labour for lining slabs				90%	Rs: 3452.95

labour component/unit qty 15.30  
Add contractor's profit and overhead charges 13.615% 2.10  
labour component/unit qty (including contractor's profit) 17.40

**ABSTRACT:**

A. Cost of Materials Rs: 3219.09

B. Hire charges of Machinery	Rs: 174.09
C. Cost of Labour	Rs: 3452.95
	Total Rs: 6846.12
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 932.1
Total cost for 225.00 Nos.	Rs: 7778.22
Rate per each (A+B+C+D)/225.0	Rs. 34.60

IRR-CAW-7-40 **Manufacturing 450 x 150 x 30 mm size PCC lug slabs in M-15 grade ( 28 days cube compressive strength not less than 15 N / sqmm ) cement concrete using 10 mm down graded coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc., complete with initial lead upto 50 m and all lifts. ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.68 cum, FA : 0.43cum )**

DATA:

**RATE ANALYSIS**

UNIT : 25 Nos.

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	15.00	5.35	80.25
	Cement for incidentals @ 0.3 kg/slab	kg	7.50	5.35	40.13
2	Coarse aggregate 10 mm below	cum	0.03	900.00	30.60
3	Fine aggregate (Un-Screened )	cum	0.02	95.00	2.04
4	Super Plasticizer	kg	0.06	55.00	3.30
5	Use rate of moulds for 250 uses	No.	25.00	1.27	31.76
Total cost of Materials				Rs:	188.08

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hand mixer 45 / 30 ltr	Hour	8.00	5.50	44.00
	Fuel / Energy charges	Hour	8.00	0.00	0.00
2	5 hp pump ( diesel )	Hour	0.10	10.20	1.02
	Fuel / Energy charges	Hour	0.10	79.30	7.93
3	Water tanker 8000 ltr	Hour	0.20	402.50	80.50
	Fuel / Energy charges	Hour	0.20	299.90	59.98
Total hire charges of Machinery				Rs:	193.43
Apportioned hire charges of machinery for lug slabs				10%	Rs: 19.34

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Pump	Hour	0.10	111.10	11.11
2	Crew for Water tanker	Hour	0.20	177.50	35.50
3	Mason Class-I	Day	2.00	445.00	890.00
4	work inspector	Day	1.00	450.00	450.00
5	mazdoor for batching / mixing / laying for demoulding / cleaning / oiling for shifting slabs to curing pond for stacking after curing for cleaning & miscellaneous	Day	2.00	350.00	700.00
		Day	2.00	350.00	700.00
		Day	1.00	350.00	350.00
		Day	1.00	350.00	350.00
		Day	1.00	350.00	350.00
Total cost of Labour				Rs:	3836.61
Apportioned cost of labour for lug slabs				10%	Rs: 383.66

labour component/unit qty	15.30
Add contractor's profit and overhead charges	13.615% 2.10
labour component/unit qty (including contractor's profit)	<u>17.40</u>

**ABSTRACT:**

A. Cost of Materials	Rs: 188.08
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B. Hire charges of Machinery		Rs: 19.34
C. Cost of Labour		Rs: 383.66
	Total	Rs: 591.08
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 80.48
Total cost for	25.00 Nos.	Rs: 671.56
Rate per each	(A+B+C+D)/25.0	Rs. 26.90

IRR-CAW-7-41 **Manufacturing 600 x 300 x 100mm size PCC lining slabs in M-15 grade (28 days cube compressive strength not less than 15 N/Sqmm) cement concrete using 20mm down grades coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc., complete with initial lead upto 50 m and all lifts.**  
**( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.80 cum, FA : 0.45cum, Blending Ratio of CA--65:35)**

DATA:

**RATE ANALYSIS**

UNIT: 225 Nos.

**A. MATERIALS :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	Kg	1215	5.35	6500.25
2		Kg	112.5		601.88
	Cement for incidentals @ 0.5kg/slab			5.35	
3	Coarse aggregate 20 mm below	Cum	2.11	1225.00	2579.85
4	Coarse aggregate 10 mm below	Cum	1.13	900.00	1020.60
5	Fine aggregate (Un-Screened)	Cum	1.82	95.00	173.14
6	Super Plasticizer	kg	4.86	55.00	267.30
7	Use rate of moulds for 250 uses	No.	225	1.23	276.75
Total Cost of Materials Rs.					11419.76

**B. MACHINERY :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Diesel mixer 300/200	Hour	8	53.50	428.00
	Fuel/Energy charges	Hour	8	79.30	634.40
2	5 hp pump (diesel)	Hour	0.1	10.20	1.02
	Fuel/Energy charges	Hour	0.1	79.30	7.93
3	Water tanker 8000 ltr	Hour	0.2	402.50	80.50
	Fuel/Energy charges	Hour	0.2	299.90	59.98
Total hire charges of Machinery Rs.					1211.83
Apportioned hire charges of machinery @ 90% for lining slab Rs.					1090.65

**C. LABOUR :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Pump	Hour	0.1	111.10	11.11
2	Crew for water tanker	Hour	0.2	177.50	35.50
3	Mason Class-I	Day	2	445.00	890.00
4	Class II Mason	Day	1	400.00	400.00
5	Mazdoor				
	For batching materials/laying	Day	2	350.00	700.00
	For demoulding/cleaning/oiling		2	350.00	700.00
	For shifting slabs to curing pond		1	350.00	350.00
	For stacking after curing		1	350.00	350.00
	For cleaning & miscellaneous	Day	1	350.00	350.00
Total Cost of Labour Rs.					3786.61
Apportioned cost of labour for lining slabs Rs.					3407.95

labour component/unit qty		15.10
Add contractor's profit and overhead charges	13.615%	2.10
labour component/unit qty (including contractor's profit)		<u>17.20</u>

**ABSTRACT :**

A. Cost of Materials		Rs. 11419.763
B. Hire Charges of machinery		Rs. 1090.65
C. Cost of Labour		Rs. <u>3407.95</u>
	Total	Rs: <u>15918.36</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 2167.28
Total cost for	225.00 Nos.	Rs: <b>18085.64</b>
<b>Rate per each</b>	(A+B+C+D)/225.0	Rs. <b>80.40</b>

IRR-CAW-7-42 **Manufacturing 400 x 400 x 30 mm size PCC lining slabs in M-15 grade ( 28 days cube compressive strength not less than 15 N / sqmm ) cement concrete using 10 mm down graded coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc., complete with initial lead upto 50 m and all lifts. ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.68 cum, FA : 0.43cum )**

DATA:

**RATE ANALYSIS**

UNIT : 225 Nos.

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	324.00	5.35	1733.40
					601.88
2	Cement for incidentals @ 0.5 kg/slab	kg	112.50	5.35	
3	Coarse aggregate 10 mm below	cum	0.73	900.00	660.96
4	Fine aggregate (Un-Screened )	cum	0.46	95.00	44.12
5	Super Plasticizer	kg	1.30	55.00	71.28
	Use rate of moulds for 250 uses	No.	225.00	2.36	531.16
Total cost of Materials				Rs:	<b>3642.79</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hand mixer 45 / 30 ltr	Hour	8.00	5.50	44.00
	Fuel / Energy charges	Hour	8.00	0.00	0.00
2	5 hp pump ( diesel )	Hour	0.10	10.20	1.02
	Fuel / Energy charges	Hour	0.10	79.30	7.93
3	Water tanker 8000 ltr	Hour	0.20	402.50	80.50
	Fuel / Energy charges	Hour	0.20	299.90	59.98
Total hire charges of Machinery				Rs:	<b>193.43</b>
Aportioned hire charges of machinery for lining slab				90%	Rs: <b>174.09</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Pump	Hour	0.10	111.10	11.11
2	Crew for Water tanker	Hour	0.20	177.50	35.50
3	Mason Class-I	Day	2.00	445.00	890.00
4	work inspector	Day	1.00	450.00	450.00
5	mazdoor for batching / mixing / laying for demoulding / cleaning / oiling for shifting slabs to curing pond for stacking after curing for cleaning & miscellaneous	Day	2.00	350.00	700.00
		Day	2.00	350.00	700.00
		Day	1.00	350.00	350.00
		Day	1.00	350.00	350.00
		Day	1.00	350.00	350.00
Total cost of Labour				Rs:	<b>3836.61</b>
Aportioned cost of labour for lining slabs				90%	Rs: <b>3452.95</b>

labour component/unit qty	15.30
Add contractor's profit and overhead charges	13.615% 2.10
labour component/unit qty (including contractor's profit)	<u><b>17.40</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 3642.79
B. Hire charges of Machinery	Rs: 174.09
C. Cost of Labour	Rs: <u><b>3452.95</b></u>
	Total Rs: <u><b>7269.83</b></u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 989.79
Total cost for 225.00 Nos.	Rs: <b>8259.62</b>
<b>Rate per each</b> (A+B+C+D)/225.0	Rs. <b>36.70</b>

IRR-CAW-7-43 **Manufacturing 400 x 150 x 30 mm size PCC lug slabs in M-15 grade ( 28 days cube compressive strength not less than 15 N /sqmm ) cement concrete using 10 mm down graded coarse aggregate including cost of all materials, machinery, labour, batching, mixing, laying, compacting, formwork, finishing, curing etc., complete with initial lead upto 50 m and all lifts. ( Cement content : 300 kg / cum with super plasticizer (0.4% by wt. of cement), CA : 0.68 cum, FA : 0.43cum )**

DATA:

**RATE ANALYSIS****UNIT : 25 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	13.50	5.35	72.23
					40.13
2	Cement for incidentals @ 0.3 kg/slab	kg	7.50	5.35	
3	Coarse aggregate 10 mm below	cum	0.03	900.00	27.54
4	Fine aggregate (Un-Screened )	cum	0.02	95.00	1.84
5	Super Plasticizer	kg	0.05	55.00	2.97
	Use rate of moulds for 250 uses	No.	25.00	1.24	31.01
Total cost of Materials				Rs:	<b>175.71</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hand mixer 45 / 30 ltr	Hour	8.00	5.50	44.00
	Fuel / Energy charges	Hour	8.00	0.00	0.00
2	5 hp pump ( diesel )	Hour	0.10	10.20	1.02
	Fuel / Energy charges	Hour	0.10	79.30	7.93
3	Water tanker 8000 ltr	Hour	0.20	402.50	80.50
	Fuel / Energy charges	Hour	0.20	299.90	59.98
Total hire charges of Machinery				Rs:	<b>193.43</b>
Apportioned hire charges of machinery for lug slabs				10%	Rs: <b>19.34</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Pump	Hour	0.10	111.10	11.11
2	Crew for Water tanker	Hour	0.20	177.50	35.50
3	Mason Class-I	Day	2.00	445.00	890.00
4	work inspector	Day	1.00	450.00	450.00
5	mazdoor	Day	2.00	350.00	700.00
	for batching / mixing / laying	Day	2.00	350.00	700.00
	for demoulding / cleaning / oiling	Day	2.00	350.00	700.00
	for shifting slabs to curing pond	Day	1.00	350.00	350.00
	for stacking after curing	Day	1.00	350.00	350.00
	for cleaning & miscellaneous	Day	1.00	350.00	350.00
Total cost of Labour				Rs:	<b>3836.61</b>
Apportioned cost of labour for lug slabs				10%	Rs: <b>383.66</b>

labour component/unit qty	15.30
Add contractor's profit and overhead charges	13.615% 2.10
labour component/unit qty (including contractor's profit)	<u><b>17.40</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 175.71
B. Hire charges of Machinery	Rs: 19.34
C. Cost of Labour	Rs: 383.66
	Total Rs: <u><b>578.71</b></u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 78.79
Total cost for 25.00 Nos.	Rs: <b>657.50</b>
<b>Rate per each</b> (A+B+C+D)/25.0	Rs. <b>26.30</b>

IRR-CAW-7-44 Providing and laying uncoursed rubble stone masonry in CM 1 : 5 proportion for canal side lining using stones and chips from **approved quarry** including cost of all materials, machinery, labour, forming weep holes at specified intervals, finishing, curing etc., complete with initial lead upto 50 m and all lifts.  
 (Thickness of the masonry assumed: 0.3 m, rubble stones : 0.96 cum, Stone Chips : 0.15cum, Through Stones 20 x 20 x 30cm : 1/sqm)

DATA:

**RATE ANALYSIS**UNIT : **10.00 cum****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement 43 Gr	kg	1152.00	5.35	6163.20
2	Sand (Screened )	cum	4.00	165.00	660.00
3	Uncoursed rubble stones at quarry	cum	9.60	318.00	3052.80
4	Through stones 20x20x30 cm	Nos	32.00	22.00	704.00
5	Stone chips at quarry	cum	1.50	350.00	525.00
Total cost of Materials				Rs:	<b>11105.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	5 hp pump ( diesel )	Hour	4.00	10.20	40.80
	Fuel / Energy charges	Hour	4.00	79.30	317.20
Total hire charges of Machinery				Rs:	<b>358.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Operator pump	Hour	4.00	111.10	444.40
2	work inspector	Day	1.00	450.00	450.00
3	Mason Class I	Day	2.00	445.00	890.00
4	Mason Class II	Day	2.00	400.00	800.00
5	mazdoor	Day	8.00	350.00	2800.00
6	Cartman with Double Bullock cart for water	Day	1.00	465.00	465.00
Total cost of Labour				Rs:	<b>5849.40</b>

labour component/unit qty	584.90
Add contractor's profit and overhead charges	13.615% 79.60
labour component/unit qty (including contractor's profit)	<u><b>664.50</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 11105.00
B. Hire charges of Machinery	Rs: 358.00
C. Cost of Labour	Rs: 5849.40
	Total Rs: <u><b>17312.40</b></u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 2357.08
Total cost for 10.00 cum	Rs: <b>19669.48</b>
<b>Rate per cum</b> (A+B+C+D)/10.0	Rs. <b>1966.90</b>

IRR-CAW-7-45 Providing and laying uncoursed rubble stone masonry in CM 1:5 proportion for canal side lining using stones from approved quarry including cost of all materials, machinery, labour, forming weep holes at specified intervals, finishing, curing etc., complete with initial lead upto 50m and all lifts.(without pin headers) : 1.1 cum)  
(Thickness of the Masonry assumed: 0.3 m , rubble stones

DATA:

**RATE ANALYSIS**

UNIT: 10 Cum

A.  
MATERIALS  
:

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement 43 Gr	Kg	979.2	5.35	5238.72
2	Sand (Screened)	Cum	3.4	165.00	561.00
3	Uncoursed rubble stones at quarry	Cum	11	318.00	3498.00
Total Cost of Materials Rs.					<b>9297.72</b>

B. MACHINERY :

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hand Mixing Charges	Hour	8	5.50	44.00
2	5 hp pump (diesel) Fuel / Energy charges	Hour	4	10.20	40.80
Total hire charges of Machinery Rs.					<b>481.30</b>

C. LABOUR :

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Operator pump	Hour	4	111.10	444.40
2	Mason Class I	Day	13	445.00	5785.00
3	Mason Class II	Day	6	400.00	2400.00
4	Mazdoor	Day	29	350.00	10150.00
5	Cartman with Double Bullock cart for water	Day	1	465.00	465.00
Total Cost of Labour Rs.					<b>19244.40</b>

labour component/unit qty 1924.40

Add contractor's profit and overhead charges 13.615% 262.00

labour component/unit qty (including contractor's profit) **2186.40**

## ABSTRACT :

A. Cost of Materials	Rs. 9297.72
B. Hire Charges of Machinery	Rs. 481.3
C. Cost of Labour	Rs. 19244.40
Total	Rs: 29023.42

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 3951.54
Total cost for	10.00 Cum	Rs: <b>32974.96</b>
Rate per Cum	(A+B+C+D)/10.0	Rs. <b>3297.50</b>

IRR-CAW-7-46 Providing and laying uncoursed rubble stone masonry in CM 1 : 5 proportion for canal side lining using stones and chips from canal excavation including cost of all materials, machinery, labour, forming weep holes at specified interval, finishing, curing etc., complete with initial lead upto 50 m and all lifts.  
( rubble stones : 0.96 cum, Stone Chips : 0.15cum, Through Stones 20 x 20 x 30cm : 1/sqm)

**Note:** Stones and chips will be issued from dump yard at specified issue rate.

DATA:

**RATE ANALYSIS**UNIT : **10.00 cum****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement 43 Gr	kg	1144.00	5.35	6120.40
2	Sand (Screened )	cum	4.00	165.00	660.00
3	Uncoursed rubble at dump yard	cum	9.60	155.00	1488.00
4	Through stones 20x20x30 cm	Nos	32.00	22.00	704.00
5	Stone chips at dump yard	cum	1.50	185.00	277.50
Total cost of Materials				Rs:	<b>9249.90</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	5 hp pump ( diesel )	Hour	4.00	10.20	40.80
	Fuel / Energy charges	Hour	4.00	79.30	317.20
Total hire charges of Machinery				Rs:	<b>358.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Operator pump	Hour	4.00	111.10	444.40
2	work inspector	Day	1.00	450.00	450.00
3	Mason Class I	Day	2.00	445.00	890.00
4	Mason Class II	Day	2.00	400.00	800.00
5	Crowbarman	Day	1.00	400.00	400.00
6	mazdoor	Day	9.00	350.00	3150.00
7	Cartman with Double Bullock cart for water	Day	1.00	465.00	465.00
Total cost of Labour				Rs:	<b>6599.40</b>

labour component/unit qty 659.90

Add contractor's profit and overhead charges 13.615% 89.80

labour component/unit qty (including contractor's profit) **749.70****ABSTRACT:**

A. Cost of Materials	Rs:	9249.90
B. Hire charges of Machinery	Rs:	358.00
C. Cost of Labour	Rs:	6599.40
Total		Rs: <b>16207.30</b>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 2206.62
Total cost for	10.00 cum	Rs: <b>18413.92</b>
Rate per cum	(A+B+C+D)/10.0	Rs. <b>1841.40</b>

IRR-CAW-7-47 Providing and laying uncoursed rubble stone masonry in CM 1:5 proportion for canal side lining

using stones from canal excavation including cost of all materials, machinery, labour, forming weep holes at specified intervals, finishing, curing etc., complete with initial lead upto 50m and all lifts.

( rubble stones : 1.1cum, cement : 98kg, sand 0.34 cum)

DATA:

**RATE ANALYSIS**UNIT: **10** Cum**A.****MATERIALS**

:

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement 43 Gr	Kg	980	5.35	5243.00
2	Sand (Screened)	Cum	3.4	165.00	561.00
3	Uncoursed rubble at dump yard	Cum	11	155.00	1705.00
Total Cost of Materials Rs.					<b>7509</b>

**B. MACHINERY :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hand Mixing Charges	Hour	8	5.50	44.00
2	5 hp pump (diesel)	Hour	4	10.20	40.80
	Fuel / Energy charges	Hour	5	79.30	396.50
Total hire charges of Machinery			Rs.		<b>481.30</b>

**C. LABOUR :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Operator pump	Hour	4	111.10	444.40
2	Mason Class I	Day	13	445.00	5785.00
3	Mason Class II	Day	6	400.00	2400.00
4	Mazdoor	Day	29	350.00	10150.00
5	Cartman with double bullock cart	Day	1	465.00	465.00
Total Cost of Labour			Rs.		<b>19244.40</b>
labour component/unit qty				1924.40	
Add contractor's profit and overhead charges			13.615%	262.00	
labour component/unit qty (including contractor's profit)				<b>2186.40</b>	

**ABSTRACT :**

A. Cost of Materials	Rs.	7509
B. Hire Charges of Machinery	Rs.	481.3
C. Cost of Labour	Rs.	19244.40
Total	Rs:	<u>27234.70</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 3708
Total cost for	10.00 Cum	Rs: <b>30942.70</b>
<b>Rate per Cum</b>	(A+B+C+D)/10.0	Rs. <b>3094.30</b>

**IRR-CAW-8 ROCK PITCHING:**

IRR-CAW-8-1 Providing and **constructing 25 cm thick dry rubble stone pitching with pin headers at 2 per sqm** including cost of all materials, labour, hand packing, finishing etc., complete with initial lead upto 50 m and all lifts.  
( rubble stones : 0.23 cum/sqm, Stone Chips : 0.0375cum/sqm, Pin Headers 30cm : 2/sqm)

DATA:

**RATE ANALYSIS**UNIT : **100.00** sqm**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Uncoursed rubble stones at quarry	cum	23.00	318.00	7314.00
2	Pin header (Through stone) 30 cm	Nos	200.00	22.00	4400.00
3	Stone chips at quarry	cum	3.75	350.00	1312.50
Total cost of Materials			Rs:		<b>13026.50</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
Total hire charges of Machinery			Rs:		<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class II	Day	5.00	400.00	2000.00
3	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour			Rs:		<b>4550.00</b>

labour component/unit qty	45.50
Add contractor's profit and overhead charges	13.615% 6.20
labour component/unit qty (including contractor's profit)	<u><b>51.70</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 13026.50
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 4550.00
	Total Rs: <u><b>17576.50</b></u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 2393.04
Total cost for 100.00 sqm	Rs: <b>19969.54</b>
<b>Rate per sqm</b>	Rs. <b>199.70</b>

Note: If 15 cm thick murum bed is to be provided below pitching  
(Murum : 0.18 cum/sqm)

DATA:

**RATE ANALYSIS**UNIT : **100.00** sqm**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Murum	cum	18.00	165.00	2970.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>2970.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>1400.00</b>

labour component/unit qty	14.00
Add contractor's profit and overhead charges	13.615% 1.90
labour component/unit qty (including contractor's profit)	<u><b>15.90</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 2970.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1400.00
	Total Rs: <u><b>4370.00</b></u>

D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 594.98
Total cost for 100.00 sqm	Rs: <b>4964.98</b>
<b>Rate per sqm</b>	Rs. <b>49.60</b>

IRR-CAW-8-1-A Providing and constructing 22.5 cm thick dry rubble stone pitching with pin headers at 2 per (New Item4 - 2011-

12) sqm including cost of all materials, labour, hand packing, finishing etc., complete with initial lead upto 50 m and all lifts.

( rubble stones : 0.207 cum/sqm, Stone Chips : 0.03375cum/sqm, Pin Headers 30cm : 2/sqm)  
(For Maintenance works)

DATA:

**RATE ANALYSIS**UNIT : **100.00** sqm**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Uncoursed rubble stones at quarry	cum	20.70	318.00	6582.60

2	Pin header (Through stone) 30 cm	Nos	200.00	22.00	4400.00
3	Stone chips at quarry	cum	3.375	350.00	1181.25
Total cost of Materials			Rs: <b>12163.85</b>		

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery			Rs: <b>0.00</b>		

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class II	Day	5.00	400.00	2000.00
3	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour			Rs: <b>4550.00</b>		

labour component/unit qty 45.50  
 Add contractor's profit and overhead charges 13.615% 6.20  
 labour component/unit qty (including contractor's profit) **51.70**

**ABSTRACT:**

A. Cost of Materials	Rs: 12163.85
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 4550.00
Total	Rs: <b>16713.85</b>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%
Total cost for	100.00 sqm
Rate per sqm	(A+B+C+D)/100.0
	Rs. 2275.59
	Rs: <b>18989.44</b>
	Rs. 189.90

IRR-CAW-8-2 Providing and **constructing 25 cm thick dry rubble stone pitching** including cost of all materials, labour, hand packing, finishing etc., complete  
 (**rubble stones : 0.275 cum/sqm**)

DATA:

**RATE ANALYSIS**

UNIT: 100 Sqm.

**A. MATERIALS :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Uncoursed rubble stones at quarry	Cum	27.50	318.00	8745.00
Total Cost of Materials Rs.			<b>8745</b>		

**B. MACHINERY :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0	0	
			0	0	
Total hire charges of Machinery Rs.			<b>0</b>		

**C. LABOUR :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Class II	Day	5.50	400.00	2200.00
2	Mazdoor	Day	24.75	350.00	8662.50
Total Cost of Labour Rs.			<b>10862.50</b>		

labour component/unit qty 108.60  
 Add contractor's profit and overhead charges 13.615% 14.80  
 labour component/unit qty (including contractor's profit) **123.40**

**ABSTRACT :**

A. Cost of Materials	Rs.	8745
B. Hire Charges of Machinery	Rs.	0
C. Cost of Labour	Rs.	<u>10862.50</u>
Total	Rs:	<u>19607.50</u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	2669.56
Total cost for	100.00 Sqm.	Rs:	<b>22277.06</b>
<b>Rate per Sqm.</b>	(A+B+C+D)/100.0	Rs.	<b>222.80</b>
If 15 cm thick murum bed is to be provided below pitching add		in Rs.	49.60
NOTE: ( As per rate analysis under item IRR-CAW-8-1- Note )			

IRR-CAW-8-2-A Providing and **constructing 225 mm thick dry rubble stone pitching** including cost of all materials, labour, (New Item5 - 2011-12) hand packing, finishing etc., complete  
**( rubble stones : 0.2475 cum/sqm) (For Maintenance Works)**

DATA: **RATE ANALYSIS** UNIT: **100** Sqm.

**A. MATERIALS :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rough Stone for Revetment	Cum	24.75	145.00	3588.75
2	Stone Chips at Quarry	Cum	3.40	350.00	1190.00
Total Cost of Materials Rs.					<b>4778.75</b>

**B. MACHINERY :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0	0	
Total hire charges of Machinery Rs.					<b>0</b>

**C. LABOUR :**

Sl. No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Class II	Day	4.95	400.00	1980.00
2	Mazdoor	Day	22.28	350.00	7796.25
Total Cost of Labour Rs.					<b>9776.25</b>

labour component/unit qty 97.80  
Add contractor's profit and overhead charges 13.615% 13.30  
labour component/unit qty (including contractor's profit) 111.10

**ABSTRACT :**

A. Cost of Materials	Rs.	4778.75
B. Hire Charges of Machinery	Rs.	0
C. Cost of Labour	Rs.	<u>9776.25</u>
Total	Rs:	<u>14555.00</u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	1981.66
Total cost for	100.00 Sqm.	Rs:	<b>16536.66</b>
<b>Rate per Sqm.</b>	(A+B+C+D)/100.0	Rs.	<b>165.40</b>

IRR-CAW-8-3 Providing and **constructing 30 cm thick dry rubble stone pitching with pin headers at 2 per sqm** including cost of all materials, labour, hand packing, finishing etc., complete with initial lead upto 50 m and all lifts.  
**( rubble stones : 0.275 cum/sqm, Stone Chips : 0.045cum/sqm, Pin Headers 30cm : 2/sqm)**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Uncoursed rubble stones at quarry	cum	27.50	318.00	8745.00
2	Pin header (Through stone) 30 cm	Nos	200.00	22.00	4400.00
3	Stone chips at quarry	cum	4.50	350.00	1575.00
Total cost of Materials				Rs:	<b>14720.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	
Total hire charges of Machinery			0.00	Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class II	Day	5.00	400.00	2000.00
3	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour				Rs:	<b>4550.00</b>

labour component/unit qty

45.50

Add contractor's profit and overhead charges

13.615% 6.20

labour component/unit qty (including contractor's profit)

**51.70****ABSTRACT:**

A. Cost of Materials	Rs: 14720.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 4550.00
Total	Rs: <u>19270.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% 2623.61
Total cost for	100.00 sqm Rs: <b>21893.61</b>
Rate per sqm	(A+B+C+D)/100.00 Rs. <b>218.90</b>

If 15 cm thick murum bed is to be provided below pitching add ( As per rate analysis under item IRR-CAW-8-1- Note ) 49.60

IRR-CAW-8-4 Providing and **Constructing 30 cm thick dry rubble stone pitching**  
including cost of all materials,labour,hand packing,finishing etc.,complete  
**( rubble stones : 0.33 cum/sqm)**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS :**

SI No	Particulars	Unit	Quantity	Rate in Rs	Amount in Rs
1	Uncoursed rubble stones at Quarry	Cum	33.00	318.00	10494.00
( Included in material Rate)					
Total Cost of materials					Rs : <b>10494.00</b>

**B.MACHINERY :**

SI No	Description	Unit	Quantity	Rate in Rs	Amount in Rs
1	Nill		0.00	0.00	

Total hire charges of machinery Rs :	<b>0.00</b>
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**C.LABOUR :**

SI No	Description	Unit	Quantity	Rate in Rs	Amount in Rs
1	Mason Class II	Day	6.60	400.00	2640.00
2	Mazdoor	Day	29.70	350.00	10395.00
Total cost of labour Rs :					<b>13035.00</b>

labour component/unit qty	130.40
Add contractor's profit and overhead charges	13.615% 17.80
labour component/unit qty (including contractor's profit)	<b>148.20</b>

**ABSTRACT**

A.Cost of Materials including ryolti charges	Rs: 10494.00
B. Hire charges of Machinery	Rs: 0.00
C.Cost of Labour	Rs: <u>13035.00</u>
Total	Rs: <u>23529.00</u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 3203.47
Total cost for	100.00 sqm	Rs: <b>26732.47</b>

<b>Rate per</b>	<b>sqm</b>	(A+B+C+D)/100.0	<b>Rs. 267.30</b>
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If 15 cm thick murum bed is to be provided below pitching	Rs 49.60
Add ( As per rate analysis under item IRR-CAW-8-1 - Note)	

IRR-CAW-8-5 Providing and **constructing 45 cm thick dry rubble stone pitching with pin headers at 2 per sqm** including cost of all materials, labour, hand packing, finishing etc., complete with initial lead upto 50 m and all lifts.  
( rubble stones : 0.40 cum/sqm, Stone Chips : 0.0675cum/sqm, Pin Headers 45cm : 2/sqm)

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Uncoursed rubble stones at quarry	cum	40.00	318.00	12720.00
2	Pin header (Through stone) 45 cm	Nos	200.00	39.00	7800.00
3	Stone chips at quarry	cum	6.75	350.00	2362.50
Total cost of Materials				Rs:	<b>22882.50</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class II	Day	7.00	400.00	2800.00
3	mazdoor	Day	9.00	350.00	3150.00
Total cost of Labour				Rs:	<b>6400.00</b>

labour component/unit qty	64.00
Add contractor's profit and overhead charges	13.615% 8.70
labour component/unit qty (including contractor's profit)	<b>72.70</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 22882.50
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B. Hire charges of Machinery		Rs: 0.00
C. Cost of Labour		Rs: 6400.00
	Total	Rs: <u>29282.50</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 3986.81
Total cost for	100.00 sqm	Rs: <b>33269.31</b>
<b>Rate per sqm</b>	(A+B+C+D)/100.0	Rs. <b>332.70</b>
If 15 cm thick murum bed is to be provided below pitching add ( As per rate analysis under item IRR-CAW-8-1 - Note )		49.60

IRR-CAW-8-6 Providing and **Constructing 45 cm thick dry rubble stone pitching** including cost of all materials,labour,hand packing,finishing etc.,complete (**rubble stones : 0.495 cum/sqm**)

DATA: **RATE ANALYSIS** UNIT : **100.00 sqm**

A. MATERIALS :

SI No	Particulars	Unit	Quantity	Rate in Rs	Amount in Rs
1	Uncoursed rubble stones at Quarry ( Included in material Rate )	Cum	49.50	318.00	15741.00
	Total Cost of materials Rs :				<b>15741.00</b>

B.MACHINERY :

SI No	Description	Unit	Quantity	Rate in Rs	Amount in Rs
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
	Total hire charges of machinery Rs :				<b>0.00</b>

C.LABOUR :

SI No	Description	Unit	Quantity	Rate in Rs	Amount in Rs
1	Mason Class II	Day	9.90	400.00	3960.00
2	Mazdoor	Day	44.55	350.00	15592.50
	Total cost of labour Rs :				<b>19552.50</b>

labour component/unit qty 195.50  
 Add contractor's profit and overhead charges 13.615% 26.60  
 labour component/unit qty (including contractor's profit) **222.10**

ABSTRACT

A.Cost of Materials including rolyty charges		Rs: 15741.00
B. Hire charges of Machinery		Rs: 0.00
C.Cost of Labour		Rs: <u>19552.50</u>
	Total	Rs: <u>35293.50</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 4805.21
Total cost for	100.00 sqm	Rs: <b>40098.71</b>
<b>Rate per sqm</b>	(A+B+C+D)/100.0	Rs. <b>401.00</b>
If 15 cm thick murum bed is to be provided below pitching		Rs 49.60
NOTE: Add ( As per rate analysis under item IRR-CAW-8-1 - Note )		

IRR-CAW-8-7 Providing and **constructing 30 cm thick rubble stone pitching** set in CM 1: 5 proportion with pin headers at 2 per sqm in including cost of all materials, labour, packing chips and mortar,

finishing, curing etc., complete with initial lead upto 50 m and all lifts.  
**( rubble stones : 0.275 cum/sqm, Stone Chips : 0.045cum/sqm, Pin Headers 30cm : 2/sqm)**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Uncoursed rubble stones at quarry	cum	27.50	318.00	8745.00
2	Pin header (Through stone) 30 cm	Nos	200.00	22.00	4400.00
3	Stone chips @ 15 % at quarry	cum	4.50	350.00	1575.00
4	Cement	kg	3000.00	5.35	16050.00
5	Sand (Screened )	cum	10.50	165.00	1732.50
Total cost of Materials				Rs:	<b>32502.50</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	5 hp pump ( diesel )		2.00	10.20	20.40
	Fuel / Energy charges		2.00	79.30	158.60
Total hire charges of Machinery				Rs:	<b>179.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Pump	Hour	2.00	111.10	222.20
2	work inspector	Day	1.00	450.00	450.00
3	Mason Class II	Day	5.00	400.00	2000.00
4	mazdoor	Day	12.00	350.00	4200.00
5	Catman with double bullock cart	Day	2.00	465.00	930.00
Total cost of Labour				Rs:	<b>7802.20</b>

labour component/unit qty

78.00

Add contractor's profit and overhead charges

13.615% 10.60

labour component/unit qty (including contractor's profit)

**88.60****ABSTRACT:**

A. Cost of Materials

Rs: **32502.50**

B. Hire charges of Machinery

Rs: **179.00**

C. Cost of Labour

Rs: **7802.20**

Total

Rs: **40483.70**

D. Add for contractor's profit and overheads on (A+B+C)

13.615% **5511.86**

Total cost for

100.00 sqm **45995.56**Rate per **sqm**(A+B+C+D)/100.0 **460.00**

If 15 cm thick murum bed is to be

NOTE: provided below pitching add

( As per rate analysis under item

IRR-CAW-8-1 - Note )

49.60

IRR-CAW-8-8 Providing and **Constructing 30 cm thick rubble stone pitching set in CM 1:5 Proportion**  
 including cost of all materials,labour, packing chips and mortar ,finishing etc.,complete  
**( rubble stones : 0.33 cum/sqm )**

DATA:

**RATE ANALYSIS**UNIT : **100.00 Sqm****A. MATERIALS :**

SI No	Particulars	Unit	Quantity	Rate in Rs	Amount in Rs
1	Uncoursed rubble stones at Quarry	Cum	33.00	318.00	10494.00
2	Cement	Kg	3232.00	5.35	17291.20
3	Sand (Screened)	Cum	11.22	165.00	1851.30
Total Cost of materials				Rs :	<b>29636.50</b>

**B.MACHINERY :**

Sl No	Description	Unit	Quantity	Rate in Rs	Amount in Rs
1	Nil		0.00	0.00	0.00
Total hire charges of machinery Rs :					<b>0.00</b>

**C.LABOUR :**

Sl No	Description	Unit	Quantity	Rate in Rs	Amount in Rs
1	Mason Class I	Day	0.54	445.00	240.30
2	Mason Class II	Day	1.26	400.00	504.00
3	Mazdoor	Day	2.80	350.00	980.00
Total cost of labour Rs :					<b>1724.30</b>

labour component/unit qty 17.20

Add contractor's profit and overhead charges 13.615% 2.30

labour component/unit qty (including contractor's profit) **19.50****ABSTRACT**

A.Cost of Materials	Rs:	29636.50
B. Hire charges of Machinery	Rs:	0.00
C.Cost of Labour	Rs:	1724.30
Total	Rs:	<u>31360.80</u>

D. Add for contractor's profit and overheads on (A+B+C) 13.615% Rs: 4269.77

Total cost for 100.00 Sqm Rs: **35630.57**Rate per Sqm (A+B+C+D)/100.0 Rs. **356.30**

If 15 cm thick murum bed is to be

NOTE: provided below pitching Rs 49.60

Add ( As per rate analysis under item IRR-CAW-8-1 - Note)

IRR-CAW-8-9 Providing and **constructing 30 cm thick dry khandki stone pitching using 20 to 25 cm size khandki stones with pin headers at 2 per sqm including cost of all materials, labour, hand packing, finishing etc., complete with initial lead upto 50 m and all lifts.**  
**( Khandki stones 20- 25 cm height : 1200 Nos/sqm, Stone Chips : 0.045cum/sqm, Pin Headers 30cm : 2/sqm )**

DATA:

**RATE ANALYSIS**UNIT : **100.00** sqm**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Khandki stones 20-25 cm height	Nos	1200.00	15.00	18000.00
2	Pin header (Through stone) 30 cm	Nos	200.00	22.00	4400.00
3	Stone chips	cum	4.50	350.00	1575.00
Total cost of Materials				Rs:	<b>23975.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class II	Day	5.00	400.00	2000.00
3	mazdoor	Day	6.00	350.00	2100.00

Total cost of Labour	Rs: <b>4550.00</b>
labour component/unit qty	45.50
Add contractor's profit and overhead charges	13.615% 6.20
labour component/unit qty (including contractor's profit)	<b>51.70</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 23975.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 4550.00
Total	<u>Rs: 28525.00</u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 3883.68
Total cost for	100.00 sqm	Rs: <b>32408.68</b>

**Rate per sqm** (A+B+C+D)/100.0 **Rs. 324.10**

If 15 cm thick murum bed is to be provided below pitching add  
 NOTE: ( As per rate analysis under item IRR-CAW-8-1 - Note ) **49.60**

- IRR-CAW-8-10 Providing and **constructing 45 cm thick dry khandki stone pitching using 25 to 30 cm size khandki stones with pin headers at 2 per sqm** including cost of all materials, labour, hand packing, finishing etc., complete **with initial lead upto 50 m and all lifts.**  
 ( Khandki stones 25- 30 cm height : 1200 Nos/sqm, Stone Chips : 0.0675cum/sqm, Pin Headers 45cm : 2/sqm)

DATA:

**RATE ANALYSIS**UNIT : **100.00** sqm**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Khandki stones 25-30 cm height	Nos	730.00	17.00	12410.00
2	Pin headers 45 cm	Nos	200.00	39.00	7800.00
3	Stone chips	cum	6.75	350.00	2362.50
Total cost of Materials				Rs: <b>22572.50</b>	

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
Total hire charges of Machinery			0.00	Rs: <b>0.00</b>	

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class II	Day	7.00	400.00	2800.00
3	mazdoor	Day	9.00	350.00	3150.00
Total cost of Labour				Rs: <b>6400.00</b>	

labour component/unit qty	64.00
Add contractor's profit and overhead charges	13.615% 8.70
labour component/unit qty (including contractor's profit)	<b>72.70</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 22572.50
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 6400.00
Total	<u>Rs: 28972.50</u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 3944.61
Total cost for	100.00 sqm	Rs: <b>32917.11</b>

**Rate per sqm** (A+B+C+D)/100.0 **Rs. 329.20**

If 15 cm thick murum bed is to be provided below pitching add **49.60**

( As per rate analysis under item  
IRR-CAW-8-1 - Note )

- IRR-CAW-8-11 Providing and **constructing 30 cm thick khandki stone pitching using 20 to 25 cm size khandki stones with pin headers at 2 per sqm set in CM 1 : 5 proportion with pointing joints in CM 1:3 proportion including cost of all materials, labour, packing chips and mortar, finishing, curing etc., complete with initial lead upto 50 m and all lifts.**  
**( Khandki stones 20- 25 cm height : 1200 Nos/sqm, Stone Chips : 0.045cum/sqm, Pin Headers 30cm : 2/sqm)**

DATA:

**RATE ANALYSIS**UNIT : **100.00** sqm**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Khandki stones 20-25 cm height	Nos	1200.00	15.00	18000.00
2	Pin headers 30 cm long	Nos	200.00	22.00	4400.00
3	Stone chips @ 15 % at quarry	cum	4.50	350.00	1575.00
4	Cement	kg	2902.00	5.35	15525.70
5	Sand (Screened )	cum	9.67	165.00	1595.55
Total cost of Materials				Rs:	<b>41096.25</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	5 hp diesel pump	Hour	2.00	10.20	20.40
	Fuel / Energy charges	Hour	2.00	79.30	158.60
Total hire charges of Machinery				Rs:	<b>179.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Pump	Hour	2.00	111.10	222.20
2	work inspector	Day	1.00	450.00	450.00
3	Cartman with double bullock cart	Day	2.00	465.00	930.00
4	Mason Class II	Day	5.00	400.00	2000.00
5	mazdoor	Day	11.00	350.00	3850.00
Total cost of Labour				Rs:	<b>7452.20</b>

labour component/unit qty 74.50  
Add contractor's profit and overhead charges 13.615% 10.10  
labour component/unit qty (including contractor's profit) **84.60**

**ABSTRACT:**

A. Cost of Materials	Rs: 41096.25
B. Hire charges of Machinery	Rs: 179.00
C. Cost of Labour	Rs: 7452.20
Total	Rs: <b>48727.45</b>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 6634.24
Total cost for 100.00 sqm	Rs: <b>55361.69</b>
<b>Rate per sqm</b> (A+B+C+D)/100.0	Rs. <b>553.60</b>
If 15 cm thick murum bed is to be provided below pitching add ( As per rate analysis under item IRR-CAW-8-1 - Note )	49.60

- IRR-CAW-8-12 Providing and **constructing 45 cm thick khandki stone pitching using 25 to 30 cm stones with pin headers at 2 per sqm set in CM 1 : 5 proportion with pointing joints in CM 1 : 3 proportion including cost of all materials, labour, packing chips and mortar, finishing, curing etc., complete with initial lead upto 50 m and all lifts.**  
**( Khandki stones 25- 30 cm height : 730 Nos/sqm, Stone Chips : 0.0675cum/sqm, Pin Headers 45cm : 2/sqm)**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Khandki stones 25-30 cm height	Nos	730.00	17.00	12410.00
2	Pin headers 45 cm	Nos	200.00	39.00	7800.00
3	Stone chips @ 15 % at quarry	cum	6.75	350.00	2362.50
4	Cement	kg	4050.00	5.35	21667.50
5	Sand (Screened)	cum	13.99	165.00	2308.35
Total cost of Materials				Rs:	<b>46548.35</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	5 hp diesel pump	Hour	4.00	10.20	40.80
	Fuel / Energy charges	Hour	4.00	79.30	317.20
Total hire charges of Machinery				Rs:	<b>358.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Pump	Hour	4.00	111.10	444.40
2	work inspector	Day	1.00	450.00	450.00
3	Cartman with double bullock cart	Day	2.00	465.00	930.00
4	Mason Class II	Day	7.00	400.00	2800.00
5	mazdoor	Day	16.00	350.00	5600.00
Total cost of Labour				Rs:	<b>10224.40</b>

labour component/unit qty 102.20  
 Add contractor's profit and overhead charges 13.615% 13.90  
 labour component/unit qty (including contractor's profit) **116.10**

**ABSTRACT:**

A. Cost of Materials	Rs: 46548.35
B. Hire charges of Machinery	Rs: 358.00
C. Cost of Labour	Rs: 10224.40
Total	Rs: <u><b>57130.75</b></u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 7778.35
Total cost for	100.00 sqm	Rs: <b>64909.10</b>
Rate per sqm	(A+B+C+D)/100.0	Rs. <b>649.10</b>
If 15 cm thick murum bed is to be provided below pitching add ( As per rate analysis under item IRR-CAW-8-1 - Note )		49.60

IRR-CAW-8-13 Providing 10 cm thick approved type grass turfing to the side slopes of canal including cost of all materials, labour, watering for minimum 15 days etc., complete with lead 50 m and all lifts.  
**(FA : 2 cum/sqm)**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Turfing sods	sqm	100.00	28.00	2800.00
2	Sand for filling	cum	2.00	95.00	190.00
Total cost of Materials				Rs:	<b>2990.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.10	450.00	45.00
2	Cartman with double bullock cart	Day	2.00	465.00	930.00
3	mazdoor	Day	14.00	350.00	4900.00
Total cost of Labour				Rs:	<b>5875.00</b>

labour component/unit qty 58.80  
 Add contractor's profit and overhead charges 13.615% 8.00  
 labour component/unit qty (including contractor's profit) **66.80**

**ABSTRACT:**

A. Cost of Materials	Rs: 2990.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: <b>5875.00</b>
Total	Rs: <b>8865.00</b>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 1206.97
Total cost for 100.00 sqm	Rs: <b>10071.97</b>
<b>Rate per Sqm</b>	(A+B+C+D)/100.0 Rs. <b>100.70</b>

IRR-CAW-8-14 **Providing 10 cm Thick approved type gross turfing** to the side slopes of canal including cost of all materials ,labour,watering for minimum 15 days etc.,complete.  
**with initial lead upto 50 m and all lifts ( WITHOUT USING SAND)**

DATA:

**RATE ANALYSIS**UNIT : **100.00 Sqm****A. MATERIALS :**

SI No	Particulars	Unit	Quantity	Rate in Rs	Amount in Rs
1	Turfing Sods	Sqm	100.00	28.00	2800.00
<b>Total Cost of materials</b>		Rs :			<b>2800.00</b>

**B.MACHINERY :**

SI No	Description	Unit	Quantity	Rate in Rs	Amount in Rs
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
<b>Total hire charges of machinery</b>					<b>0.00</b>
Rs :					

**C.LABOUR :**

SI No	Description	Unit	Quantity	Rate in Rs	Amount in Rs
1	Mazdoor	Day	7.00	350.00	2450.00
2	Cart men with double bullock cart	Day	2.00	465.00	930.00
<b>Total cost of labour</b>					<b>3380.00</b>
Rs :					

labour component/unit qty 33.80  
 Add contractor's profit and overhead charges 13.615% 4.60  
 labour component/unit qty (including contractor's profit) **38.40**

**ABSTRACT**

A.Cost of Materials including ryolti charges	Rs: 2800.00
B. Hire charges of Machinery	Rs: 0.00
C.Cost of Labour	Rs: <b>3380.00</b>
Total	Rs: <b>6180.00</b>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs: 841.41
Total cost for 100.00 Sqm	Rs: <b>7021.41</b>
<b>Rate per Sqm</b>	(A+B+C+D)/100.0 Rs. <b>70.20</b>

## CHAPTER-IV

## CANAL CROSS DRAINAGE WORKS - Standard Data

(WLL BE WITH E-N-C &amp; TO INCORPORATE CHANGES YEARLY/ AS NEEDED)

FOR THE YEAR :2016-17

Index- code

IRR-CCDW

## CANAL CROSS DRAINAGE WORKS - DATA RATES

**Directions to add Seigniorage Charges and Additional Lead Charges****Seigniorage Charges:**

1. The unit rate for work item in the Standard Data is **exclusive of Seigniorage Charges** wherever applicable.
2. The appropriate Seigniorage Charges for relevant materials are to be added to the Unit rate of work item while preparing the estimate. (i.e., to the data itself)
3. The Provision towards Contractor's Profit and Overhead charges **should not be operated on** the Seigniorage Charges while adding Seigniorage Charges to the data in the estimate

**Additional Lead and Lift Charges:**

1. Unless otherwise specified the basic rates are inclusive of all lifts.
2. For concrete, masonry and reinforcement items **wherever** initial lead of 1km is considered in the basic rate, the additional lead as follows:

Additional lead charges for Steel, sand, coarse aggregate, stones and stone chips shall be worked out for total lead involved and 1 km lead charges included in basic rate shall be deducted from total lead charges. No loading and unloading charges shall be allowed for any item.

In case of Cement and Steel, Loading and unloading charges are already added in the work item while arriving the unit rate and hence should not be added again

Example:

Total lead for sand from approved sand quarry :	15 Km
Initial lead included in the basic rate in the SR :	1 Km
Additional lead charges :	
Lead charges fc Rs.	84.00
Lead charges for next 10 k Rs.	126
Total lead charges for 15 k Rs.	210.00
Less 1 km initial lead charg Rs.	31.50 (-)
Net additional lead charge Rs.	178.50

3. The Leads for Steel shall be from the nearest market place to the Project area

4. For earth/rockfill embankments **wherever** initial lead of 1km is considered in the basic rate, the additional lead charges are to be added as follows:

Additional lead charges for Earth, Murrum etc., shall be worked out for total lead involved and 1 km lead charges included in basic rate shall be deducted from total lead charges. No loading and unloading charges shall be allowed for any item.  
(same as above)

Example:

Total lead for earth from approved borrow area :	15 Km
Initial lead included in the basic rate in the SR :	1 Km
Additional lead charges :	
Lead charges fc Rs.	84.00
Lead charges for next 10 k Rs.	126
Total lead charges for 15 k Rs.	210.00
Less 1 km initial lead charg Rs.	31.50 (-)
Net additional lead charge Rs.	178.50

5. The initial lead up to 50 m as mentioned in some standard data items is meant for manual lead within the working area. For conveyance of materials, the lead required from quarry/Borrow area/ Dump Area to worksite shall be added to the data without deducting the 50 m initial lead charges

**CCDW - Work Items**IRR-CCDW-1   **EXCAVATION & FOUNDATION TREATMENT WORKS :**

- IRR-CCDW-1-1 Excavation **in all kinds of soil** including boulders **upto 0.30 m dia.** for foundations of canal cross drainage and other appurtenant structures and placing the excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto **50 m and initial lift upto 3 m.**

DATA:

**RATE ANALYSIS**UNIT :   **10.00 cum**

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.25	450.00	112.50
2	mazdoor	Day	6.00	350.00	2100.00
	Total cost of Labour			Rs:	<b>2212.50</b>
	labour component/unit qty		221.30		
	Add contractor's profit and overhead charges		13.615% 30.10		
	labour component/unit qty (including contractor's profit)		<b>251.40</b>		

**ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	<u>2212.50</u>
	Total	Rs: <u>2212.50</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 301.23
Total cost for	10.00 cum	Rs: <u>2513.73</u>
<b>Rate per cum</b>	(A+B+C+D)/10.0	Rs. <b>251.40</b>

IRR-CCDW-1-2

**Excavation for Structures- Mechanical Means ( Data adopted from MORTH)**

Earth work in excavation in all kinds of soils of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.

**Depth upto 3 m**

Unit = cum

DATA:

Taking output = 240 cum      **Unit      240.00      cum****A. Materials:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
	NIL		0.00	0.00	<b>0.00</b>

**B. Machinery:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hydraulic excavator 1.0 cum bucket capacity	hour	6.00	1706.60	10239.60
	Fuel/ Energy charges	hour	6.00	872.70	5236.20
	Total in Rs.				<b>15475.80</b>

**C. Labour:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	day	0.32	450.00	144.00
2	Mazdoor	day	8.00	350.00	2800.00
3	crew for excavator	hour	6.00	236.60	1419.60
	Total in Rs.				<b>4363.60</b>

labour component/unit qty      18.20

Add contractor's profit and overhead charges      13.615% 2.50

labour component/unit qty (including contractor's profit)      **20.70****Abstract**

a) Material	Rs	0.00
b) Machinery	Rs	15475.80
c) Labour	Rs	4363.60
Total	Rs	<u>19839.40</u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	2701.13
Total cost for	240.00 cum	Rs:	<b>22540.53</b>
<b>Rate per cum</b>	(A+B+C+D)/240.0	Rs.	<b>93.90</b>

- IRR-CCDW-1-3 Excavation in **ordinary rock (including HDR) without blasting** including boulders **above 0.3 m upto 0.60 m dia.** for foundations of canal cross drainage and other appurtenant structures and placing the excavated stuff neatly in specified dump area or disposing off the same as directed etc., **complete with initial lead upto 50 m and initial lift upto 3 m.**

DATA:

**RATE ANALYSIS**UNIT : **10.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	<b>Total cost of Materials</b>			Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	<b>Total hire charges of Machinery</b>			Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crowbarman	Day	1.25	400.00	500.00
2	Stone breaker	Day	1.25	400.00	500.00
3	work inspector	Day	0.25	450.00	112.50
4	mazdoor	Day	6.00	350.00	2100.00
	<b>Total cost of Labour</b>			Rs:	<b>3212.50</b>

labour component/unit qty 321.30

Add contractor's profit and overhead charges 13.615% 43.70

labour component/unit qty (including contractor's profit) **365.00****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	3212.50
	Total	Rs: 3212.50
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 437.38
Total cost for	10.00 cum	Rs: <b>3649.88</b>
<b>Rate per cum</b>	(A+B+C+D)/10.0	Rs. <b>365.00</b>

- IRR-CCDW-1-4 Excavation in **ordinary rock without blasting** for foundations of canal cross drainage and other appurtenant structures and placing the excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto 50 m and initial lift upto 3 m.

( Data adopted from MORTH)

Mechanical Means

Unit = cum

DATA: Taking output = 180 cum Unit: **180.00** cum**A. Materials:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
	NIL		0.00	0.00	<b>0.00</b>

**B. Machinery:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1.0	Hydraulic excavator 1.0 cum bucket capacity	hour	6.00	1706.60	10239.60
	Fuel/ Energy charges	hour	6.00	872.70	5236.20
	<b>Total in Rs.</b>				<b>15475.80</b>

**C. Labour:**

Sl No	Description	Unit	Quantity	Rate	Amount

				in Rs.	in Rs.
1	work inspector	day	0.24	450.00	108.00
2	Mazdoor	day	6.00	350.00	2100.00
3	crew for excavator	hour	6.00	236.60	1419.60
	Total in Rs.				<b>3627.60</b>

labour component/unit qty 20.20  
 Add contractor's profit and overhead charges 13.615% 2.80  
 labour component/unit qty (including contractor's profit) **23.00**

**Abstract**

a) Material	Rs 0.00
b) Machinery	Rs 15475.80
c) Labour	Rs 3627.60
Total	Rs 19103.40
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 2600.93
Total cost for Rate per cum	180.00 cum Rs: <b>21704.33</b>
(A+B+C+D)/180.0	Rs. <b>120.60</b>

IRR-CCDW-1-5 Excavation in hard rock requiring blasting including boulders above 0.6 m upto 1.2 m dia. for foundations of canal cross drainage and other appurtenant structures and placing the excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto 50 m and initial lift upto 3 m.

DATA:

**RATE ANALYSIS**UNIT : **100 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of drill rod 1.6 m length	Rm	43.50	20.14	876.09
	Reconditioning charges @ 10%				87.61
2	Use rate of air hose 2 Nos.	Hour	6.00	0.23	1.39
3	Explosive small dia ( Kelvex-220 )	kg	20.00	70.00	1400.00
4	Electric detonators	Nos	29.00	11.00	319.00
5	Detonating fuse coil	Rm	70.00	9.00	630.00
6	Sundries	LS	0.50	30.00	15.00
Total cost of Materials				Rs:	<b>3329.09</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor 8.5 cmm ( diesel )	Hour	3.00	275.60	826.80
	Fuel / Energy charges	Hour	3.00	892.50	2677.50
2	Jack hammers 2 Nos.	Hour	6.00	19.80	118.80
	Fuel / Energy charges	Hour	6.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>3623.10</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Air compressor	Hour	3.00	210.90	632.70
2	Crew for Jack hammer	Hour	6.00	329.60	1977.60
3	work inspector	Day	1.00	450.00	450.00
4	Blaster	Day	0.50	510.00	255.00
5	Helper blaster	Day	0.50	400.00	200.00
6	Crowbarman	Day	6.00	400.00	2400.00
7	Stone breaker	Day	3.00	400.00	1200.00
8	mazdoor	Day	51.00	350.00	17850.00
Total cost of Labour				Rs:	<b>24965.30</b>

labour component/unit qty 249.70  
 Add contractor's profit and overhead charges 13.615% 34.00  
 labour component/unit qty (including contractor's profit) **283.70**

**ABSTRACT:**

A. Cost of Materials	Rs: 3329.09
B. Hire charges of Machinery	Rs: 3623.10
C. Cost of Labour	Rs: 24965.30
Total	Rs: 31917.49
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 4345.57

Total cost for <b>Rate per cum</b>	100.00 cum (A+B+C+D)/100.0	Rs: Rs.	<b>36263.057</b> <b>362.60</b>
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- IRR-CCDW-1-6 Excavation in hard rock of all toughness by blasting including boulders above 1.2 m dia. for foundations of canal cross drainage and other appurtenant structures and placing the excavated rock neatly in specified dump area or stack yard as directed etc., complete with initial lead upto 50 m and initial lift upto 3 m.

DATA: **RATE ANALYSIS** UNIT : **100.00 cum**

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Explosive small dia ( Kelvex-220 )	kg	32.00	70.00	2240.00
2	Ordinary detonator	No.	8.00	7.00	56.00
3	Electric detonator	No.	104.00	11.00	1144.00
4	Detonating fuse coil	Rm	150.00	9.00	1350.00
5	Use rate of air hose 2 Nos.	Hour	16.00	11.56	185.00
6	Use rate of drill rod	Rm	98.30	26.85	2639.68
	Reconditioning charges @ 10%				263.97
Total cost of Materials				Rs:	<b>7878.65</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor 8.5 cmm ( diesel )	Hour	8.00	275.60	2204.80
	Fuel / Energy charges	Hour	8.00	892.50	7140.00
2	Jack hammer 2 Nos	Hour	16.00	19.80	316.80
	Fuel / Energy charges	Hour	16.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>9661.60</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Air compressor	Hour	8.00	210.90	1687.20
2	Crew for Jack hammer	Hour	16.00	329.60	5273.60
3	Blaster licensed	Day	1.00	510.00	510.00
4	Helper blasting	Day	1.00	400.00	400.00
5	work inspector	Day	1.00	450.00	450.00
6	Crowbarman	Day	6.00	400.00	2400.00
7	Stone breaker	Day	6.00	400.00	2400.00
8	mazdoor	Day	51.00	350.00	17850.00
Total cost of Labour				Rs:	<b>30970.80</b>

labour component/unit qty 309.70

Add contractor's profit and overhead charges 13.615% 42.20

labour component/unit qty (including contractor's profit) **351.90**

**ABSTRACT:**

A. Cost of Materials	Rs: 7878.65
B. Hire charges of Machinery	Rs: 9661.60
C. Cost of Labour	Rs: 30970.80
	Total Rs: 48511.05
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 6604.78
Total cost for	100.00 cum Rs: 55115.83
Rate per cum	(A+B+C+D)/100.00 Rs: 551.20

- IRR-CCDW-1-7 Excavation in hard rock with blasting prohibited for foundations of canal cross drainage and other appurtenant structures and placing the excavated rock neatly in or stack yard as directed etc., complete with specified dump area initial lead upto 50 m and initial lift upto 3 m.

**Hard Rock ( blasting prohibited )** ( Data adopted from MORTH)

Unit = cum

DATA: Taking output = 10 cum Mechanical Means **10.00** cum

**A.Materials:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.

	NIL		0.00	0.00	<b>0.00</b>
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**b) Machinery**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1.0	Air Compressor 250 cft with 2 leads of pneumatic breaker	hour	6.00	241.30	1447.80
	Fuel/ Energy charges	hour	6.00	714.00	4284.00
	Total in Rs.				<b>5731.80</b>

**c) Labour**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	day	0.20	450.00	90.00
2	Mazdoor	day	5.00	350.00	1750.00
3	crew for compressor	hour	6.00	210.90	1265.40
	Total in Rs.				<b>3105.40</b>
	labour component/unit qty			310.50	
	Add contractor's profit and overhead charges			13.615% 42.30	
	labour component/unit qty (including contractor's profit)			<b>352.80</b>	

**Abstract**

a) Material	Rs	0.00
b) Machinery	Rs	5731.80
c) Labour	Rs	3105.40
Total	Rs	8837.20
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	1203.18
Total cost for	10.00 cum	Rs: <b>10040.38</b>
<b>Rate per cum</b>	(A+B+C+D)/10.0	Rs. <b>1004.00</b>

- IRR-CCDW-1-8 Providing and fixing 25 mm dia 2.50 m long cold twisted deformed steel anchor rods with 1.25 m length driven into 32 mm dia hole drilled in bed rock and remaining length embedded in concrete / masonry including cost of all materials, machinery, labour, drilling and cleaning hole, driving anchor rod, grouting hole with thick cement slurry etc., complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS**UNIT : **10.00 Nos.****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for grouting	kg	5.00	5.35	26.75
2	25 mm dia steel	kg	101.00	34.00	3434.00
3	Use rate of 32 mm dia drill rod	Rm	12.50	26.85	335.67
4	Reconditioning charges @ 10%	Hour	2.00	11.56	23.13
	Total cost of Materials			Rs:	<b>3853.11</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor 8.5 cmm ( diesel )	Hour	1.00	275.60	275.60
	Fuel / Energy charges	Hour	1.00	892.50	892.50
2	Jack hammer 2 Nos	Hour	2.00	19.80	39.60
	Fuel / Energy charges	Hour	2.00	0.00	0.00
	Total hire charges of Machinery			Rs:	<b>1207.70</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Air compressor	Hour	1.00	210.90	210.90
2	Crew for Jack hammer	Hour	2.00	329.60	659.20
3	Mason Class-II	Day	0.50	400.00	200.00
4	Bar bender	Day	0.50	555.00	277.50
5	work inspector	Day	0.50	450.00	225.00
6	mazdoor	Day	1.00	350.00	350.00
	Total cost of Labour			Rs:	<b>1922.60</b>

labour component/unit qty 192.30

Add contractor's profit and overhead charges 13.615% 26.20

labour component/unit qty (including contractor's profit)

**218.50****ABSTRACT:**

A. Cost of Materials	Rs: 3853.11
B. Hire charges of Machinery	Rs: 1207.70
C. Cost of Labour	Rs: 1922.60
	Total Rs: 6983.41
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 950.79
Total cost for 10.00 Nos.	Rs: 7934.20
<b>Rate per each</b> (A+B+C+D)/10.0	Rs. 793.40

**IRR-CCDW-2 STEEL AND CEMENT CONCRETE WORKS :**

- IRR-CCDW-2-1 Providing, fabricating and placing in position reinforcement steel bars for RCC works including cleaning, straightening, cutting, bending, hooking, lapping, welding wherever required, tying with 1.25 mm dia soft annealed steel wire, including cost of all materials, machinery, labour etc., complete with initial lead upto 50 and all lifts.

DATA:

**RATE ANALYSIS**UNIT : **1000.00 kg****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rein.Steel with 5 % wastage	kg	1050.00	34.00	35700.00
2	Binding wire 1.25 mm dia	kg	8.00	60.00	480.00
3	Sundries ( chairs / spacers etc )	LS	3.00	30.00	90.00
Total cost of Materials					Rs: <b>36270.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil		0.00	0.00	0.00
Total hire charges of Machinery					Rs: <b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Bar bender	Day	6.00	555.00	3330.00
3	mazdoor	Day	11.00	350.00	3850.00
Total cost of Labour					Rs: <b>7630.00</b>

labour component/unit qty

7.60

Add contractor's profit and overhead charges

13.615% 1.00

labour component/unit qty (including contractor's profit)

**8.60****ABSTRACT:**

A. Cost of Materials	Rs: 36270.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 7630.00
	Total Rs: 43900.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 5976.99
Total cost for 1000.00 kg	Rs: 49876.99
<b>Rate per kg</b> (A+B+C+D)/1000.0	Rs. 49.90

- IRR-CCDW-2-2 Providing, fabricating and fixing in position structural steel cutting edge consisting of 100 x 100 x 10 mm angle and 250 x 12 mm plate for sinking for sinking 4.50 m outer diameter foundation wells foundation wells including cost of all materials, machinery, labour, bending, welding, providing anchors etc., complete with initial lead upto 50 m and all lifts.

**DETAILS OF FOUNDATION WELL CUTTING EDGE**

DATA:

**RATE ANALYSIS****UNIT : 615.00 kg****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Str.Steel angle with 2.5 % wastage	kg	216.10	37.50	8103.75
2	Str.Steel plate with 2.5 % wastage	kg	342.30	37.40	12802.02
3	Steel for anchors	kg	56.60	34.00	1924.40
4	Acetyline gas	cum	0.50	335.00	167.50
5	Oxygen gas	cum	1.50	42.00	63.00
6	Welding electrodes	Nos	300.00	13.00	3900.00
7	Sundries	LS	5.00	30.00	150.00
Total cost of Materials				Rs:	<b>27110.67</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Bending machine	Hour	8.00	42.60	340.80
	Fuel / Energy charges	Hour	8.00	84.10	672.80
2	Welding set	Hour	30.00	16.00	480.00
	Fuel / Energy charges	Hour	30.00	67.20	2016.00
3	Sundries	LS	10.00	30.00	300.00
Total hire charges of Machinery				Rs:	<b>3809.60</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Str. Steel fabricator	Day	2.00	550.00	1100.00
2	Welder / Gas cutter	Day	5.00	445.00	2225.00
3	work inspector	Day	1.00	450.00	450.00
4	mazdoor	Day	5.00	350.00	1750.00
Total cost of Labour				Rs:	<b>5525.00</b>

labour component/unit qty

9.00

Add contractor's profit and overhead charges

13.615% 1.20

labour component/unit qty (including contractor's profit)

10.20**ABSTRACT:**

A. Cost of Materials	Rs: 27110.67
B. Hire charges of Machinery	Rs: 3809.60
C. Cost of Labour	Rs: 5525.00
D. Add for contractor's profit and overheads on (A+B+C)	Total Rs: 36445.27
Total cost for	13.615% Rs: 4962.02
Rate per kg	615.00 kg Rs: 41407.29
	(A+B+C+D)/615.00 Rs: 67.30

- IRR-CCDW-2-3 Providing and laying **insitu vibrated M-15** ( 28 days cube compressive strength not less than 15 N /sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates for foundation filling including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., **complete with initial lead upto 50 m and all lifts.**  
**(Cement content: 260 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA-50:30:20, FA : 0.40 cum)**

Data

**RATE ANALYSIS****UNIT : 15.38 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	3998.80	5.35	21393.58
	Cement for incidentals @ 3 kg / cum	kg	46.14	5.35	246.85
2	Coarse aggregate 40-20 mm	cum	6.92	1175.00	8132.18
	Coarse aggregate 20-10 mm	cum	4.15	1225.00	5086.94
	Coarse aggregate 10 mm below	cum	2.77	900.00	2491.56
3	Fine aggregate (Un-Screened)	cum	6.15	95.00	584.44
4	Super Plasticizer	kg	16.00	55.00	879.74
5	Use rate of shuttering for 40 uses	sqm	15.38	224.57	3453.85

6	Scaffolding @ of shuttering Sundries	10% LS	0.50	30.00	345.38 15.00
<b>Total cost of Materials</b>				<b>Rs:</b>	<b>42629.51</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
<b>Total hire charges of Machinery</b>				<b>Rs:</b>	<b>2020.75</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.50
4	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
5	work inspector	Day	1.00	450.00	450.00
6	Mason Class-I	Day	1.00	445.00	445.00
7	mazdoor	Day	11.00	350.00	3850.00
	for batching materials	Day	4.00	350.00	1400.00
	for loading mortar pans	Day	3.00	350.00	1050.00
	for laying	Day	15.38	350.00	5383.00
	for conveying concrete	Day	1.00	350.00	350.00
	for cleaning/ washing/ curing	Day	15.38	88.50	1361.13
8	Labour cost for shuttering	sqm	15.38		136.11
	Labour cost for scaffolding @		10%		
<b>Total cost of Labour</b>				<b>Rs:</b>	<b>17681.49</b>

labour component/unit qty 1149.60

Add contractor's profit and overhead charges 13.615% 156.50

labour component/unit qty (including contractor's profit) 1306.10**ABSTRACT:**

A. Cost of Materials	Rs: 42629.51
B. Hire charges of Machinery	Rs: 2020.75
C. Cost of Labour	Rs: 17681.49
D. Add for contractor's profit and overheads on (A+B+C)	Total Rs: 62331.75
Total cost for 15.38 cum	13.615% Rs: 8486.47
<b>Rate per cum</b>	<b>(A+B+C+D)/15.38</b> Rs: <b>70818.22</b>
	Rs. <b>4604.60</b>

IRR-CCDW-2-4 Providing and laying **insitu vibrated M-15** ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using **80 mm down size** approved, clean, hard, graded aggregates for foundation filling including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., **complete with initial lead upto 50 m and all lifts.**  
**(Cement content: 250 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.98cum, Blending Ratio of CA-35:30:20:15, FA : 0.35 cum)**

DATA:

**RATE ANALYSIS**UNIT : **14.40 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	3600.00	5.35	19260.00
	Cement for incidentals @ 3 kg / cum	kg	43.20	5.35	231.12
2	Coarse aggregate 80-40 mm	cum	4.94	650.00	3210.48
	Coarse aggregate 40-20 mm	cum	4.23	1175.00	4974.48
	Coarse aggregate 20-10 mm	cum	2.82	1225.00	3457.44
	Coarse aggregate 10 mm below	cum	2.12	900.00	1905.12
3	Fine aggregate (Un-Screened)	cum	5.04	95.00	478.80
4	Super Plasticizer	kg	14.40	55.00	792.00

5	Use rate of shuttering for 40 uses Scaffolding @ of shuttering	sqm 10% LS	14.40 0.50	224.57 30.00	3233.77 323.38 15.00
Total cost of Materials				Rs:	37881.59

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 600/400 ltr ( diesel)	Hour	8.00	92.70	741.60
	Fuel / Energy charges	Hour	8.00	158.70	1269.60
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 60 mm dia ( petrol)	Hour	8.00	8.20	65.60
	Fuel / Energy charges	Hour	8.00	28.20	225.60
Total hire charges of Machinery				Rs:	3049.55

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.50
4	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
5	Mason Class-I	Day	1.00	445.00	445.00
6	work inspector	Day	1.00	450.00	450.00
7	mazdoor for batching materials for loading mortar pans for laying for conveying concrete for cleaning/ washing/ curing	Day	11.00	350.00	3850.00
		Day	4.00	350.00	1400.00
		Day	3.00	350.00	1050.00
		Day	14.40	350.00	5040.00
		Day	1.00	350.00	350.00
8	Labour cost for shuttering Labour cost for scaffolding @	sqm 10%	14.40 10%	88.50	1274.40 127.44
Total cost of Labour				Rs:	17243.09

labour component/unit qty 1197.40

Add contractor's profit and overhead charges 13.615% 163.00

labour component/unit qty (including contractor's profit) 1360.40**ABSTRACT:**

A. Cost of Materials	Rs: 37881.59
B. Hire charges of Machinery	Rs: 3049.55
C. Cost of Labour	Rs: 17243.09
	Total Rs: 58174.23
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 7920.42
Total cost for	14.40 cum Rs: 66094.65
Rate per cum	(A+B+C+D)/14.40 Rs: 4589.90

IRR-CCDW-2-5 Providing and laying **insitu vibrated M-10** ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates for foundation filling including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., **complete with initial lead upto 50 m and all lifts.**  
**(Cement content: 220 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)**

DATA:

**RATE ANALYSIS**UNIT : **16.36 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix Cement for incidentals @ 3 kg / cum	kg kg	3599.20 49.08	5.35 5.35	19255.72 262.58
2	Coarse aggregate 40-20 mm Coarse aggregate 20-10 mm Coarse aggregate 10 mm below	cum cum cum	7.36 4.42 2.94	1175.00 1225.00 900.00	8650.35 5411.07 2650.32
3	Fine aggregate (Un-Screened)	cum	6.54	95.00	621.68
4	Super Plasticizer	kg	14.40	55.00	791.82

5	Use rate of shuttering for 40 uses	sqm	16.36	224.57	3673.92
6	Scaffolding @ of shuttering	10% LS	0.50	30.00	367.39
	Sundries				15.00
Total cost of Materials			Rs:	<b>41699.86</b>	

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery			Rs:	<b>2020.75</b>	

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.50
4	Crew for Vibrator	Hour	8.00	158.20	1265.60
5	Mason Class-I	Day	1.00	445.00	445.00
6	work inspector	Day	1.00	450.00	450.00
7	mazdoor for batching materials for loading mortar pans for laying for conveying concrete for cleaning/ washing/ curing Labour cost for shuttering	Day Day Day Day Day sqm	11.00 4.00 3.00 16.36 1.00 16.36	350.00 350.00 350.00 350.00 350.00 88.50	3850.00 1400.00 1050.00 5726.00 350.00 1447.86
Total cost of Labour			Rs:	<b>17975.11</b>	

labour component/unit qty 1098.70

Add contractor's profit and overhead charges 13.615% 149.60labour component/unit qty (including contractor's profit) 1248.30**ABSTRACT:**

A. Cost of Materials	Rs: 41699.86
B. Hire charges of Machinery	Rs: 2020.75
C. Cost of Labour	Rs: 17975.11
D. Add for contractor's profit and overheads on (A+B+C)	Total Rs: 61695.72
Total cost for 16.36 cum	13.615% Rs: 8399.87
Rate per cum (A+B+C+D)/16.36	Rs: <b>70095.59</b>
	Rs: <b>4284.60</b>

IRR-CCDW-2-6 Providing and laying **insitu vibrated M-10** ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using **80 mm down size** approved, clean, hard, graded aggregates for foundation filling including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., **complete with initial lead upto 50 m and all lifts.**  
**(Cement content: 220 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.98cum, Blending Ratio of CA-35:30:20:15, FA : 0.35 cum)**

DATA:

**RATE ANALYSIS**UNIT : **14.55 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	3201.00	5.35	17125.35
	Cement for incidentals @ 3 kg / cum	kg	43.65	5.35	233.53
2	Coarse aggregate 80-40 mm	cum	4.99	650.00	3243.92
	Coarse aggregate 40-20 mm	cum	4.28	1175.00	5026.30
	Coarse aggregate 20-10 mm	cum	2.85	1225.00	3493.46
	Coarse aggregate 10 mm below	cum	2.14	900.00	1924.97
3	Fine aggregate (Un-Screened)	cum	5.09	95.00	483.79
	Super Plasticizer	kg	12.80	55.00	704.22

5	Use rate of shuttering for 40 uses Scaffolding @ of shuttering	sqm 10% LS	14.55 0.50	224.57 30.00	3267.46 326.75 15.00
Total cost of Materials				Rs:	35844.73

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 600/400 ltr ( diesel )	Hour	8.00	92.70	741.60
	Fuel / Energy charges	Hour	8.00	158.70	1269.60
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 60 mm dia ( petrol )	Hour	8.00	8.20	65.60
	Fuel / Energy charges	Hour	8.00	28.20	225.60
Total hire charges of Machinery				Rs:	3049.55

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.50
4	Crew for Vibrator	Hour	8.00	158.20	1265.60
5	Mason Class-I	Day	1.00	445.00	445.00
6	work inspector	Day	1.00	450.00	450.00
7	mazdoor for batching materials for loading mortar pans for laying for conveying concrete for cleaning/ washing/ curing	Day	11.00	350.00	3850.00
		Day	4.00	350.00	1400.00
		Day	3.00	350.00	1050.00
		Day	14.55	350.00	5092.50
8	Labour cost for shuttering Labour cost for scaffolding @	sqm 10%	14.55	88.50	1287.68 128.77
Total cost of Labour				Rs:	17310.19

labour component/unit qty 1189.70

Add contractor's profit and overhead charges 13.615% 162.00

labour component/unit qty (including contractor's profit) 1351.70**ABSTRACT:**

A. Cost of Materials	Rs:	35844.73
B. Hire charges of Machinery	Rs:	3049.55
C. Cost of Labour	Rs:	17310.19
	Total	56204.47
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	7652.24
Total cost for	14.55 cum	Rs:
<b>Rate per cum</b>	(A+B+C+D)/14.55	Rs.

IRR-CCDW-2-7 Providing and laying **insitu vibrated M-20** ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates for foundation filling including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete **with initial lead upto 50 m and all lifts.** ( Cement content : 220 kg / cum )  
**(Cement content: 310 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)**

DATA:

**RATE ANALYSIS**UNIT : **14.19 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix Cement for incidentals @ 3 kg / cum	kg kg	4398.90 42.57	5.35 5.35	23534.12 227.75
2	Coarse aggregate 40-20 mm Coarse aggregate 20-10 mm Coarse aggregate 10 mm below	cum cum cum	6.39 3.83 2.55	1175.00 1225.00 900.00	7502.96 4693.34 2298.78
3	Fine aggregate (Un-Screened)	cum	5.68	95.00	539.22
4	Super Plasticizer	kg	17.60	55.00	967.76

5	Use rate of shuttering for 40 uses Scaffolding @ of shuttering	sqm 10% LS	14.19 0.50	224.57 30.00	3186.61 318.66 15.00
Total cost of Materials				Rs:	43284.20

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	2020.75

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.50
4	Crew for Vibrator	Hour	8.00	158.20	1265.60
5	Mason Class-I	Day	1.00	445.00	445.00
6	work inspector	Day	1.00	450.00	450.00
7	mazdoor for batching materials for loading mortar pans for laying for conveying concrete for cleaning/ washing/ curing	Day	11.00	350.00	3850.00
		Day	4.00	350.00	1400.00
		Day	3.00	350.00	1050.00
		Day	14.19	350.00	4966.50
8	Labour cost for shuttering Labour cost for scaffolding @	sqm 10%	14.19	88.50	1255.82
					125.58
Total cost of Labour				Rs:	17149.15

labour component/unit qty 1208.50

Add contractor's profit and overhead charges 13.615% 164.50

labour component/unit qty (including contractor's profit) 1373.00

**ABSTRACT:**

A. Cost of Materials	Rs:	43284.20
B. Hire charges of Machinery	Rs:	2020.75
C. Cost of Labour	Rs:	17149.15
	Total	62454.10
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	8503.13
Total cost for	14.19 cum	Rs:
Rate per cum	(A+B+C+D)/14.19	Rs.

IRR-CCDW-2-8 Providing and laying **insitu vibrated M-20** ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates **for sub-structure / super- structure works** including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete **with initial lead upto 50 m and all lifts.**  
**(Cement content: 320 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)**

DATA:

**RATE ANALYSIS**

UNIT : 15.00 cum

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix Cement for incidentals @ 5 kg / cum	kg kg	4800.00 75.00	5.35 5.35	25680.00 401.25
2	Coarse aggregate 40-20 mm Coarse aggregate 20-10 mm Coarse aggregate 10 mm below	cum cum cum	6.75 4.05 2.70	1175.00 1225.00 900.00	7931.25 4961.25 2430.00
3	Fine aggregate (Un-Screened)	cum	6.00	95.00	570.00
4	Super Plasticizer	kg	19.20	55.00	1056.00

5	Use rate of shuttering	sqm	30.00	224.57	6737.03
6	Scaffolding @ of shuttering	25% LS	0.50	30.00	1684.26
	Sundries				15.00
Total cost of Materials					Rs: 51466.03

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery					Rs: 2020.75

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.50
4	Crew for Vibrator	Hour	8.00	158.20	1265.60
5	Mason Class-I	Day	1.00	445.00	445.00
6	work inspector	Day	1.00	450.00	450.00
7	mazdoor for batching materials	Day	11.00	350.00	3850.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying including lifting	Day	4.00	350.00	1400.00
	for conveying concrete	Day	15.00	350.00	5250.00
	for cleaning/ washing/ curing	Day	1.00	350.00	350.00
8	Labour cost for shuttering	sqm	15.00	88.50	1327.50
	Labour cost for scaffolding @	25%			331.88
Total cost of Labour					Rs: 18060.63

labour component/unit qty 1204.00

Add contractor's profit and overhead charges 13.615% 163.90

labour component/unit qty (including contractor's profit) 1367.90**ABSTRACT:**

A. Cost of Materials	Rs: 51466.03
B. Hire charges of Machinery	Rs: 2020.75
C. Cost of Labour	Rs: 18060.63
D. Add for contractor's profit and overheads on (A+B+C)	Total Rs: 71547.41
Total cost for 13.615% 9741.18	15.00 cum Rs: 81288.59
Rate per cum (A+B+C+D)/15.00 Rs: 5419.20	Rs: 5419.20

IRR-CCDW-2-9 Providing and laying **insitu vibrated M-20** ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates **for sub-structure / super- structure works** including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete **with initial lead upto 50 m and all lifts.**  
**(Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum)**

DATA:

**RATE ANALYSIS**

UNIT : 15.76 cum

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	5200.80	5.35	27824.28
	Cement for incidentals @ 5 kg / cum	kg	78.80	5.35	421.58
2	Coarse aggregate 20-10 mm	cum	8.20	1225.00	10039.12
	Coarse aggregate 10 mm below	cum	4.41	900.00	3971.52
3	Fine aggregate (Un-Screened)	cum	7.09	95.00	673.74
4	Super Plasticizer	kg	20.80	55.00	1144.18
5	Use rate of shuttering	sqm	31.52	224.57	7078.37

6	Scaffolding @ of shuttering Sundries	25% LS	0.50	30.00	1769.59 15.00
Total cost of Materials				Rs:	<b>52937.38</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	<b>2020.75</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.50
4	Crew for Vibrator	Hour	8.00	158.20	1265.60
5	Mason Class-I	Day	1.00	445.00	445.00
6	work inspector	Day	1.00	450.00	450.00
7	mazdoor for batching materials for loading mortar pans for laying for conveying concrete for cleaning/ washing/ curing	Day	11.00	350.00	3850.00
		Day	4.00	350.00	1400.00
		Day	4.00	350.00	1400.00
		Day	15.76	350.00	5516.00
		Day	1.00	350.00	350.00
8	Labour cost for shutting Labour cost for scaffolding @	sqm	31.52	88.50	2789.52
		25%			697.38
Total cost of Labour				Rs:	<b>20154.15</b>

labour component/unit qty 1278.80

Add contractor's profit and overhead charges 13.615% 174.10labour component/unit qty (including contractor's profit) 1452.90**ABSTRACT:**

A. Cost of Materials	Rs: 52937.38
B. Hire charges of Machinery	Rs: 2020.75
C. Cost of Labour	Rs: 20154.15
D. Add for contractor's profit and overheads on (A+B+C)	Total Rs: 75112.28
Total cost for 15.76 cum	13.615% Rs: 10226.54
Rate per cum (A+B+C+D)/15.76	Rs: 85338.817
	Rs: 5414.90

IRR-CCDW-2-10 Providing and laying **insitu vibrated M-15** ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates for **sub-structure / super- structure works** including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.  
**(Cement content: 280 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)**

DATA:

**RATE ANALYSIS**UNIT : **15.71 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	4398.80	5.35	23533.58
	Cement for incidentals @ 5 kg / cum	kg	78.55	5.35	420.24
2	Coarse aggregate 20-10 mm	cum	8.17	1225.00	10007.27
	Coarse aggregate 10 mm below	cum	4.40	900.00	3958.92
3	Fine aggregate (Un-Screened)	cum	7.07	95.00	671.60
4	Super Plasticizer	kg	17.60	55.00	967.74
5	Use rate of shattering for 40 uses	sqm	31.42	224.57	7055.91
	Scaffolding @ of shattering	25%			1763.98

6	Sundries	LS	0.50	30.00	15.00
	Total cost of Materials			Rs: 48394.24	

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
	Total hire charges of Machinery			Rs: 2020.75	

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.50
4	Crew for Vibrator	Hour	8.00	158.20	1265.60
5	Mason Class-I	Day	1.00	445.00	445.00
6	work inspector	Day	1.00	450.00	450.00
7	mazdoor for batching materials for loading mortar pans for laying for conveying concrete for cleaning/ washing/ curing	Day	11.00	350.00	3850.00
		Day	4.00	350.00	1400.00
		Day	4.00	350.00	1400.00
		Day	15.71	350.00	5498.50
8	Labour cost for shuttering Labour cost for scaffolding @	sqm	31.42	88.50	2780.67
		25%			695.17
	Total cost of Labour			Rs: 20125.59	

labour component/unit qty 1281.10

Add contractor's profit and overhead charges 13.615% 174.40

labour component/unit qty (including contractor's profit) 1455.50**ABSTRACT:**

A. Cost of Materials	Rs: 48394.24
B. Hire charges of Machinery	Rs: 2020.75
C. Cost of Labour	Rs: 20125.59
	Total Rs: 70540.58
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 9604.1

Total cost for 15.71 cum Rs: 80144.678

Rate per cum (A+B+C+D)/15.71 Rs: 5101.50

IRR-CCDW-2-11 Providing and laying **insitu vibrated M-10** ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates for **sub-structure / super- structure works** including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.  
**(Cement content: 220 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum)**

DATA:

**RATE ANALYSIS**

UNIT : 18.00 cum

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	3960.00	5.35	21186.00
	Cement for incidentals @ 5 kg / cum	kg	90.00	5.35	481.50
2	Coarse aggregate 20-10 mm	cum	9.36	1225.00	11466.00
	Coarse aggregate 10 mm below	cum	5.04	900.00	4536.00
3	Fine aggregate (Un-Screened)	cum	8.10	95.00	769.50
4	Super Plasticizer	kg	15.84	55.00	871.20
5	Use rate of shuttering for 40 uses	sqm	36.00	224.57	8084.43
	Scaffolding @ of shuttering	25%			2021.11
6	Sundries	LS	0.50	30.00	15.00

Total cost of Materials	Rs: <b>49430.74</b>
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**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
4	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs: <b>2020.75</b>	

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.50
4	Crew for Vibrator	Hour	8.00	158.20	1265.60
5	Mason Class-I	Day	1.00	445.00	445.00
6	work inspector	Day	1.00	450.00	450.00
7	mazdoor	Day	11.00	350.00	3850.00
	for batching materials	Day	4.00	350.00	1400.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	18.00	350.00	6300.00
	for conveying concrete	Day	1.00	350.00	350.00
8	for cleaning/ washing/ curing	Labour cost for shuttering	36.00	88.50	3186.00
	Labour cost for scaffolding @	sqm			796.50
		25%			
Total cost of Labour				Rs: <b>21433.75</b>	

labour component/unit qty 1190.80

Add contractor's profit and overhead charges 13.615% 162.10labour component/unit qty (including contractor's profit) **1352.90****ABSTRACT:**

A. Cost of Materials	Rs: <b>49430.74</b>
B. Hire charges of Machinery	Rs: <b>2020.75</b>
C. Cost of Labour	Rs: <b>21433.75</b>
	Total Rs: <b>72885.24</b>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: <b>9923.33</b>
Total cost for 18.00 cum	Rs: <b>82808.569</b>
Rate per cum (A+B+C+D)/(18.00)	Rs. <b>4600.50</b>

IRR-CCDW-2-12 Providing and laying **insitu vibrated M-20** ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates **for well kerb** including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.

(Cement content: 350 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum)

DATA:

**RATE ANALYSIS**UNIT : **15.00 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	5250.00	5.35	28087.50
2	Coarse aggregate 20-10 mm	cum	7.80	1225.00	9555.00
	Coarse aggregate 10 mm below	cum	4.20	900.00	3780.00
3	Fine aggregate (Un-Screened)	cum	6.75	95.00	641.25
4	Super Plasticizer	kg	21.00	55.00	1155.00
5	Use rate of curved shutter (40 uses)	sqm	82.50	247.02	20379.50
6	Sundries	LS	0.50	30.00	15.00
Total cost of Materials				Rs: <b>63613.25</b>	

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	<b>1318.35</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials	Day	11.00	350.00	3850.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	3.00	350.00	1050.00
	for conveying concrete	Day	15.00	350.00	5250.00
	for cleaning/ washing/ curing	Day	1.00	350.00	350.00
7	Labour cost for shuttering	sqm	82.50	88.50	7301.25
Total cost of Labour				Rs:	<b>23175.00</b>
labour component/unit qty				1545.00	
Add contractor's profit and overhead charges				13.615% <u>210.40</u>	
labour component/unit qty (including contractor's profit)				<u>1755.40</u>	

**ABSTRACT:**

A. Cost of Materials	Rs: 63613.25
B. Hire charges of Machinery	Rs: 1318.35
C. Cost of Labour	Rs: 23175.00
Total	Rs: 88106.60
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 11995.71
Total cost for	15.00 cum Rs: 100102.31
Rate per cum	(A+B+C+D)/15.00 Rs. 6673.50

IRR-CCDW-2-13 Providing and laying **insitu vibrated M-20** ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates **for well steining** including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.  
(Cement content: 320 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)

DATA:

**RATE ANALYSIS**UNIT : **15.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	4800.00	5.35	25680.00
	Cement for incidentals @ 2 kg / cum	kg	30.00	5.35	160.50
2	Coarse aggregate 40-20 mm	cum	6.75	1175.00	7931.25
	Coarse aggregate 20-10 mm	cum	4.05	1225.00	4961.25
	Coarse aggregate 10 mm below	cum	2.70	900.00	2430.00
3	Fine aggregate (Un-Screened)	cum	6.00	95.00	570.00
4	Super Plasticizer	kg	19.20	55.00	1056.00
5	Use rate of curved shutter (40 uses)	sqm	60.00	247.02	14821.46
6	Sundries	LS	0.50	30.00	15.00
Total cost of Materials				Rs:	<b>57625.46</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00

	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	1318.35

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials for loading mortar pans for laying for conveying concrete for cleaning/ washing/ curing	Day	11.00	350.00	3850.00
7	Labour cost for shuttering	Day	4.00	350.00	1400.00
		Day	3.00	350.00	1050.00
		Day	15.00	350.00	5250.00
		Day	1.00	350.00	350.00
	Total cost of Labour	sqm	60.00	88.50	5310.00
Total cost of Labour				Rs:	21183.75

labour component/unit qty 1412.30

Add contractor's profit and overhead charges 13.615% 192.30

labour component/unit qty (including contractor's profit) 1604.60**ABSTRACT:**

A. Cost of Materials	Rs:	57625.46
B. Hire charges of Machinery	Rs:	1318.35
C. Cost of Labour	Rs:	21183.75
	Total	80127.56
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	10909.37
Total cost for	15.00 cum	Rs: 91036.93
Rate per cum	(A+B+C+D)/15.00	Rs. 6069.10

IRR-CCDW-2-14 Providing and laying insitu M-15 ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using 20 mm down size approved, clean, hard, graded aggregates for well bottom plug by tremie or skip box method including cost of all materials, machinery, labour, batching, mixing, placing in position as per detailed specifications etc., complete with initial lead upto 50 m and all lifts. ( Cement content : 350 kg / cum )  
 (Cement content: 350 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)

DATA:

**RATE ANALYSIS**

UNIT : 14.00 cum

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	4900.00	5.35	26215.00
2	Coarse aggregate 20-10 mm	cum	7.28	1225.00	8918.00
	Coarse aggregate 10 mm below	cum	3.92	900.00	3528.00
3	Fine aggregate (Un-Screened)	cum	6.30	95.00	598.50
4	Super Plasticizer	kg	19.60	55.00	1078.00
Add for tremie arrangement @				TOTAL 1%	Rs: 40337.50
Total cost of Materials				Rs:	40740.88

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Sundries( Hopper etc. )	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	1257.15

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Fitter shuttering	Day	1.00	400.00	400.00
4	work inspector	Day	1.00	450.00	450.00
5	mazdoor for erecting/ dismantling tremie for batching materials for loading mortar pans for feeding tremie hopper for conveying concrete	Day	4.00	350.00	1400.00
		Day	11.00	350.00	3850.00
		Day	4.00	350.00	1400.00
		Day	2.00	350.00	700.00
		Day	16.00	350.00	5600.00
Total cost of Labour				Rs:	<b>15613.15</b>

labour component/unit qty 1115.20  
 Add contractor's profit and overhead charges 13.615% 151.80  
 labour component/unit qty (including contractor's profit) **1267.00**

**ABSTRACT:**

A. Cost of Materials	Rs:	40740.88
B. Hire charges of Machinery	Rs:	1257.15
C. Cost of Labour	Rs:	15613.15
	Total	Rs: 57611.18
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 7843.76
Total cost for	14.00 cum	Rs: 65454.94
<b>Rate per cum</b>	(A+B+C+D)/14.0	Rs. 4675.40

IRR-CCDW-2-15 Providing and laying **insitu vibrated M-15** ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates for **well top plug** including cost of all materials, machinery, labour, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.

(Cement content: 280 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA--50:30:20, FA : 0.40 cum)

DATA:

**RATE ANALYSIS**UNIT : **14.29 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	4001.20	5.35	21406.42
2	Coarse aggregate 40-20 mm	cum	6.43	1175.00	7555.84
	Coarse aggregate 20-10 mm	cum	3.86	1225.00	4726.42
	Coarse aggregate 10 mm below	cum	2.57	900.00	2314.98
3	Fine aggregate (Un-Screened)	cum	5.72	95.00	543.02
4	Super Plasticizer	kg	16.00	55.00	880.26
Total cost of Materials				Rs:	<b>37426.94</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	<b>1318.35</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials	Day	11.00	350.00	3850.00

for loading mortar pans	Day	4.00	350.00	1400.00
for laying	Day	3.00	350.00	1050.00
for conveying concrete	Day	14.29	350.00	5001.50
for cleaning/ washing/ curing	Day	1.00	350.00	350.00
Total cost of Labour				Rs: <b>15625.25</b>

labour component/unit qty	1093.40
Add contractor's profit and overhead charges	13.615% 148.90
labour component/unit qty (including contractor's profit)	<b>1242.30</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 37426.94
B. Hire charges of Machinery	Rs: 1318.35
C. Cost of Labour	Rs: 15625.25
Total	Rs: 54370.54
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 7402.55
Total cost for	14.29 cum Rs: <b>61773.09</b>
Rate per cum	(A+B+C+D)/14.29 Rs. <b>4322.80</b>

IRR-CCDW-2-16 Providing and laying **insitu vibrated M-20** ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates **for well cap** including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.  
(Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)

DATA:

**RATE ANALYSIS**UNIT : **15.76** cum**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	5200.80	5.35	27824.28
	Cement for incidentals @ 5 kg / cum	kg	78.80	5.35	421.58
2	Coarse aggregate 20-10 mm	cum	8.20	1225.00	10039.12
	Coarse aggregate 10 mm below	cum	4.41	900.00	3971.52
3	Fine aggregate (Un-Screened)	cum	7.09	95.00	673.74
4	Super Plasticizer	kg	20.80	55.00	1144.18
5	Use rate of curved shutter (40 uses)	sqm	15.76	224.57	3539.18
6	Sundries	LS	0.50	30.00	15.00
Total cost of Materials				Rs: <b>47628.60</b>	

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs: <b>1318.35</b>	

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor	Day	11.00	350.00	3850.00
	for batching materials	Day	4.00	350.00	1400.00
	for loading mortar pans	Day	3.00	350.00	1050.00
	for laying	Day	15.76	350.00	5516.00
	for conveying concrete	Day	1.00	350.00	350.00
	for cleaning/ washing/ curing	Day	15.76	88.50	1394.76
7	Labour cost for shuttering	sqm			
Total cost of Labour				Rs: <b>17534.51</b>	

labour component/unit qty	1112.60
Add contractor's profit and overhead charges	13.615% 151.50
labour component/unit qty (including contractor's profit)	<b>1264.10</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 47628.60
B. Hire charges of Machinery	Rs: 1318.35
C. Cost of Labour	Rs: 17534.51
	Total Rs: 66481.46
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 9051.45
Total cost for	15.76 cum Rs: <b>75532.91</b>
<b>Rate per cum</b>	(A+B+C+D)/15.76 Rs. <b>4792.70</b>

IRR-CCDW-2-17 Providing and laying **insitu vibrated M-15** ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using **80 mm down size** approved, clean, hard, graded aggregates for piers and abutments including cost of all materials, labour, machinery, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.

(Cement content: 250 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.98cum, Blending Ratio of CA--35:30:20:15, FA : 0.35 cum)

DATA:

**RATE ANALYSIS**UNIT : **14.40 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	3600.00	5.35	19260.00
	Cement for incidentals @ 5 kg / cum	kg	72.00	5.35	385.20
2	Coarse aggregate 80-40 mm	cum	4.94	650.00	3210.48
	Coarse aggregate 40-20 mm	cum	4.23	1175.00	4974.48
	Coarse aggregate 20-10 mm	cum	2.82	1225.00	3457.44
	Coarse aggregate 10 mm below	cum	2.12	900.00	1905.12
3	Fine aggregate (Un-Screened)	cum	5.04	95.00	478.80
4	Super Plasticizer	kg	14.40	55.00	792.00
5	Use rate of shuttering for 40 uses	sqm	39.60	235.80	9337.52
6	Scaffolding @ of shuttering	30%			2801.26
Total cost of Materials				Rs:	<b>46602.29</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 600/400 ltr ( diesel )	Hour	8.00	92.70	741.60
	Fuel / Energy charges	Hour	8.00	158.70	1269.60
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 60 mm dia ( petrol )	Hour	8.00	8.20	65.60
	Fuel / Energy charges	Hour	8.00	28.20	225.60
Total hire charges of Machinery				Rs:	<b>2347.15</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials for loading mortar pans for laying for conveying concrete for cleaning/ washing/ curing	Day	11.00	350.00	3850.00
		Day	4.00	350.00	1400.00
		Day	6.00	350.00	2100.00
		Day	14.40	350.00	5040.00
7	Labour cost for shuttering Labour cost for scaffolding @	Day	1.00	350.00	350.00
		sqm	39.60	88.50	3504.60
		30%			1051.38
Total cost of Labour				Rs:	<b>21269.73</b>

labour component/unit qty

1477.10

Add contractor's profit and overhead charges

13.615% 201.10

labour component/unit qty (including contractor's profit)

**1678.20****ABSTRACT:**

A. Cost of Materials	Rs: 46602.29
B. Hire charges of Machinery	Rs: 2347.15
C. Cost of Labour	Rs: 21269.73
	Total Rs: 70219.17
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 9560.34
Total cost for 14.40 cum	Rs: <b>79779.513</b>
<b>Rate per cum</b>	(A+B+C+D)/14.40 Rs. <b>5540.20</b>

IRR-CCDW-2-18 Providing and laying insitu vibrated M-10 ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using **80 mm down size** approved, clean, hard, graded aggregates **for piers and abutments** including cost of all materials, labour, machinery, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.  
(Cement content: 220 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.98cum, Blending Ratio of CA-35:30:20:15, FA : 0.35 cum)

DATA:

**RATE ANALYSIS**UNIT : **14.55 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	3201.00	5.35	17125.35
	Cement for incidentals @ 5 kg / cum	kg	72.75	5.35	389.21
2	Coarse aggregate 80-40 mm	cum	4.99	650.00	3243.92
	Coarse aggregate 40-20 mm	cum	4.28	1175.00	5026.30
	Coarse aggregate 20-10 mm	cum	2.85	1225.00	3493.46
	Coarse aggregate 10 mm below	cum	2.14	900.00	1924.97
3	Fine aggregate (Un-Screened)	cum	5.09	95.00	483.79
4	Super Plasticizer	kg	12.80	55.00	704.22
5	Use rate ofshuttering for 40 uses	sqm	40.01	235.80	9434.78
6	Scaffolding @ of shuttering	30%			2830.44
Total cost of Materials				Rs:	<b>44656.43</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 600/400 ltr ( diesel )	Hour	8.00	92.70	741.60
	Fuel / Energy charges	Hour	8.00	158.70	1269.60
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 60 mm dia ( petrol )	Hour	8.00	8.20	65.60
	Fuel / Energy charges	Hour	8.00	28.20	225.60
Total hire charges of Machinery				Rs:	<b>2347.15</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor	Day	11.00	350.00	3850.00
	for batching materials	Day	4.00	350.00	1400.00
	for loading mortar pans	Day	6.00	350.00	2100.00
	for laying	Day	14.55	350.00	5092.50
	for conveying concrete	Day	1.00	350.00	350.00
	for cleaning/ washing/ curing	Day	40.01	88.50	3541.11
7	Labour cost for shuttering	sqm			1062.33
	Labour cost for scaffolding @	30%			
Total cost of Labour				Rs:	<b>21369.69</b>

labour component/unit qty

1468.70

Add contractor's profit and overhead charges

13.615% 200.00

labour component/unit qty (including contractor's profit)

**1668.70**

**ABSTRACT:**

A. Cost of Materials	Rs: 44656.43
B. Hire charges of Machinery	Rs: 2347.15
C. Cost of Labour	Rs: 21369.69
	Total Rs: 68373.27
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 9309.02
Total cost for 14.55 cum	Rs: 77682.29
<b>Rate per cum</b>	(A+B+C+D)/14.55 Rs. 5339.00

IRR-CCDW-2-19 Providing and laying **insitu vibrated M-10** ( 28 days cube compressive strength not less than 10 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates for piers and abutments including cost of all materials, labour, machinery, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.

(Cement content: 220 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA-50:30:20, FA : 0.40 cum)

DATA:

**RATE ANALYSIS**UNIT : **16.36 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	3599.20	5.35	19255.72
	Cement for incidentals @ 5 kg / cum	kg	81.80	5.35	437.63
2	Coarse aggregate 40-20 mm	cum	7.36	1175.00	8650.35
	Coarse aggregate 20-10 mm	cum	4.42	1225.00	5411.07
	Coarse aggregate 10 mm below	cum	2.94	900.00	2650.32
3	Fine aggregate (Un-Screened)	cum	6.54	95.00	621.68
4	Super Plasticizer	kg	14.40	55.00	791.82
5	Use rate of shuttering for 40 uses	sqm	44.99	235.80	10608.46
6	Scaffolding @ of shuttering	30%			3182.54
Total cost of Materials				Rs:	<b>51609.59</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	<b>1318.35</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials	Day	11.00	350.00	3850.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	5.00	350.00	1750.00
	for conveying concrete	Day	16.36	350.00	5726.00
	for cleaning/ washing/ curing	Day	1.00	350.00	350.00
7	Labour cost for shuttering	sqm	44.99	88.50	3981.62
	Labour cost for scaffolding @	30%			1194.48
Total cost of Labour				Rs:	<b>22225.85</b>

labour component/unit qty 1358.50

Add contractor's profit and overhead charges 13.615% 185.00

labour component/unit qty (including contractor's profit) **1543.50**

**ABSTRACT:**

A. Cost of Materials	Rs: 51609.59
B. Hire charges of Machinery	Rs: 1318.35

C. Cost of Labour		Rs: 22225.85
	Total	Rs: 75153.79
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 10232.19
Total cost for	16.36 cum	Rs: 85385.98
Rate per cum	(A+B+C+D)/16.36	Rs. 5219.20

IRR-CCDW-2-20 Providing and laying **insitu vibrated M-20** ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates for **cantiliver / counterfort retaining walls** including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts. (Cement content: 320 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA-50:30:20, FA : 0.40 cum)

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.

DATA:

#### RATE ANALYSIS

UNIT : 16.25 cum

#### A. MATERIALS:

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	5200.00	5.35	27820.00
	Cement for incidentals @ 5 kg / cum	kg	81.25	5.35	434.69
2	Coarse aggregate 40-20 mm	cum	7.31	1175.00	8592.19
	Coarse aggregate 20-10 mm	cum	4.39	1225.00	5374.69
3	Coarse aggregate 10 mm below	cum	2.93	900.00	2632.50
	Fine aggregate (Un-Screened)	cum	6.50	95.00	617.50
4	Super Plasticizer	kg	20.80	55.00	1144.00
5	Use rate of shuttering for 40 uses	sqm	52.81	224.57	11859.97
6	Scaffolding @ of shuttering	25%			2964.99
	Sundries	LS	0.50	30.00	15.00
Total cost of Materials				Rs:	61455.53

#### B. MACHINERY:

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	1318.35

#### C. LABOUR:

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials	Day	11.00	350.00	3850.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	5.00	350.00	1750.00
	for conveying concrete	Day	16.25	350.00	5687.50
	for cleaning/ washing/ curing	Day	1.00	350.00	350.00
7	Labour cost for shuttering	sqm	52.81	88.50	4673.91
	Labour cost for scaffolding @	25%			1168.48
Total cost of Labour				Rs:	22853.63

labour component/unit qty	1406.40
Add contractor's profit and overhead charges	13.615% 191.50
labour component/unit qty (including contractor's profit)	<u>1597.90</u>

#### ABSTRACT:

A. Cost of Materials	Rs: 61455.53
B. Hire charges of Machinery	Rs: 1318.35
C. Cost of Labour	Rs: 22853.63

D. Add for contractor's profit and overheads on (A+B+C)	Total 13.615%	Rs: 85627.51
Total cost for 16.25 cum	Rs:	11658.19
Rate per cum (A+B+C+D)/16.25	Rs.	<b>97285.70</b>
		<b>5986.80</b>

IRR-CCDW-2-21 Providing and laying **insitu vibrated M-15** ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using **40 mm down size** approved, clean, hard, graded aggregates **with placing and sinking plums of size 150 to 80 mm upto 15 percent for gravity type retaining walls / piers / abutments** etc., including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete **with initial lead upto 50 m and all lifts.**

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.  
(Cement content: 260 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.765cum, Blending Ratio of CA-50:30:20, FA : 0.34 cum, plums of size 150 to 80 mm : 0.25cum )

DATA:

**RATE ANALYSIS**UNIT : **18.09 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	4703.40	5.35	25163.19
	Cement for incidentals @ 4 kg / cum	kg	72.36	5.35	387.13
2	Coarse aggregate 40-20 mm	cum	6.92	1175.00	8130.32
	Coarse aggregate 20-10 mm	cum	4.15	1225.00	5085.78
3	Coarse aggregate 10 mm below	cum	2.77	900.00	2490.99
	Plums of size 150 to 80 mm	cum	4.52	350.00	1582.88
4	Fine aggregate (Un-Screened)	cum	6.15	95.00	584.31
5	Super Plasticizer	kg	18.81	55.00	1034.75
6	Use rate of shuttering for 40 uses	sqm	49.75	224.57	11171.67
	Scaffolding @ of shuttering	30%			3351.50
Total cost of Materials					Rs: <b>58982.52</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 60 mm dia ( petrol )	Hour	8.00	8.20	65.60
	Fuel / Energy charges	Hour	8.00	28.20	225.60
Total hire charges of Machinery					Rs: <b>1398.35</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor	Day	11.00	350.00	3850.00
	for batching materials	Day	4.00	350.00	1400.00
	for loading mortar pans	Day	5.00	350.00	1750.00
	for laying	Day	2.00	350.00	700.00
	for placing plums	Day	15.38	350.00	5383.00
	for conveying concrete	Day	2.00	350.00	700.00
	for conveying plums	Day	1.00	350.00	350.00
	for cleaning/ washing/ curing	Day	49.75	88.50	4402.65
	Labour for shuttering	sqm			1320.80
	Labour for scaffolding @	30%			
Total cost of Labour					Rs: <b>23830.20</b>

labour component/unit qty 1317.30

Add contractor's profit and overhead charges 13.615% 179.40

labour component/unit qty (including contractor's profit) **1496.70****ABSTRACT:**

A. Cost of Materials

Rs: 58982.52

B. Hire charges of Machinery	Rs:	1398.35
C. Cost of Labour	Rs:	23830.20
	Total	Rs: 84211.07
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 11465.34
Total cost for	18.09 cum	Rs: 95676.41
Rate per cum	(A+B+C+D)/18.09	Rs. 5288.90

IRR-CCDW-2-22 Providing and laying insitu vibrated M-15 ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using 40 mm down size approved, clean, hard, graded aggregates for cast in-situ pipes including cost of all materials, machinery, labour, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.

(Cement content: 260 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.90cum, Blending Ratio of CA-50:30:20, FA : 0.40 cum)

DATA:

**RATE ANALYSIS**

UNIT : 15.38 cum

**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	3998.80	5.35	21393.58
	Cement for incidentals @ 5 kg / cum	kg	76.90	5.35	411.42
2	Coarse aggregate 40-20 mm	cum	6.92	1175.00	8132.18
	Coarse aggregate 20-10 mm	cum	4.15	1225.00	5086.94
3	Coarse aggregate 10 mm below	cum	2.77	900.00	2491.56
	Fine aggregate (Un-Screened)	cum	6.15	95.00	584.44
4	Super Plasticizer	kg	16.00	55.00	879.74
5	Use rate of shuttering for 40 uses	sqm	30.76	235.80	7253.08
6	Scaffolding @ of shuttering	15%			1087.96
	Sundries	LS	0.50	30.00	15.00
Total cost of Materials				Rs:	47335.89

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	1318.35

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials	Day	11.00	350.00	3850.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	3.00	350.00	1050.00
	for conveying concrete	Day	15.38	350.00	5383.00
	for cleaning/ washing/ curing	Day	1.00	350.00	350.00
7	Labour for shuttering	sqm	30.76	88.50	2722.26
	Labour for scaffolding @	15%			408.34
Total cost of Labour				Rs:	19137.35

labour component/unit qty 1244.30

Add contractor's profit and overhead charges 13.615% 169.40

labour component/unit qty (including contractor's profit) 1413.70

**ABSTRACT:**

A. Cost of Materials	Rs: 47335.89
B. Hire charges of Machinery	Rs: 1318.35
C. Cost of Labour	Rs: 19137.35

D. Add for contractor's profit and overheads on (A+B+C)	Total 13.615%	Rs: 67791.58
Total cost for 15.38 cum	Rs:	9229.82
Rate per cum (A+B+C+D)/15.38	Rs.	77021.40
		5007.90

IRR-CCDW-2-23 Providing and laying **in situ vibrated M-15** ( 28 days cube compressive strength not less than 15 N / sq mm ) grade cement concrete using **80 mm down size** approved, clean, hard, graded aggregates for **cast in-situ pipes** including cost of all materials, labour, machinery, formwork, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., **complete with initial lead upto 50 m and all lifts.**

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.  
(Cement content: 250 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.98cum, Blending Ratio of CA-35:30:20:15, FA : 0.35 cum)

DATA:

**RATE ANALYSIS**UNIT : **14.40 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	3600.00	5.35	19260.00
	Cement for incidentals @ 5 kg / cum	kg	72.00	5.35	385.20
2	Coarse aggregate 80-40 mm	cum	4.94	650.00	3210.48
	Coarse aggregate 40-20 mm	cum	4.23	1175.00	4974.48
	Coarse aggregate 20-10 mm	cum	2.82	1225.00	3457.44
	Coarse aggregate 10 mm below	cum	2.12	900.00	1905.12
3	Fine aggregate (Un-Screened)	cum	5.04	95.00	478.80
4	Super Plasticizer	kg	14.40	55.00	792.00
5	Use rate of shuttering for 40 uses	sqm	28.80	235.80	6790.92
6	Scaffolding @ of shuttering	15%			1018.64
Total cost of Materials				Rs:	<b>42273.08</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 600/400 ltr ( diesel )	Hour	8.00	92.70	741.60
	Fuel / Energy charges	Hour	8.00	158.70	1269.60
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 60 mm dia ( petrol )	Hour	8.00	8.20	65.60
	Fuel / Energy charges	Hour	8.00	28.20	225.60
Total hire charges of Machinery				Rs:	<b>2347.15</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor	Day	11.00	350.00	3850.00
	for batching materials	Day	4.00	350.00	1400.00
	for loading mortar pans	Day	3.00	350.00	1050.00
	for laying	Day	14.40	350.00	5040.00
	for conveying concrete	Day	1.00	350.00	350.00
	for cleaning/ washing/ curing	Day	28.80	88.50	2548.80
7	Labour cost for shuttering	sqm			382.32
	Labour cost for scaffolding @	15%			
Total cost of Labour				Rs:	<b>18594.87</b>

labour component/unit qty 1291.30

Add contractor's profit and overhead charges 13.615% 175.80

labour component/unit qty (including contractor's profit) 1467.10

**ABSTRACT:**

A. Cost of Materials	Rs: 42273.08
B. Hire charges of Machinery	Rs: 2347.15
C. Cost of Labour	Rs: 18594.87
D. Add for contractor's profit and overheads on (A+B+C)	Total Rs: 63215.10
	13.615% Rs: 8606.74

Total cost for <b>Rate per cum</b>	14.40 cum (A+B+C+D)/14.40	Rs: Rs.	<b>71821.84</b> <b>4987.60</b>
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IRR-CCDW-2-24 Providing and laying insitu vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates for deck slab & kerb including cost of all materials,machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.  
(Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum)

DATA:

**RATE ANALYSIS**UNIT : **15.76 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	5200.80	5.35	27824.28
	Cement for incidentals @ 5 kg / cum	kg	78.80	5.35	421.58
2	Coarse aggregate 20-10 mm	cum	8.20	1225.00	10039.12
	Coarse aggregate 10 mm below	cum	4.41	900.00	3971.52
3	Fine aggregate (Un-Screened)	cum	7.09	95.00	673.74
4	Super Plasticizer	kg	20.80	55.00	1144.18
5	Use rate of shuttering for 30 uses	sqm	39.40	271.42	10694.08
	Scaffolding @ of shuttering	250%			26735.20
6	Sundries	LS	1.00	30.00	30.00
Total cost of Materials				Rs:	<b>81533.70</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	<b>1318.35</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	2.00	445.00	890.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor	Day	11.00	350.00	3850.00
	for batching materials	Day	4.00	350.00	1400.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	15.76	350.00	5516.00
	for conveying concrete	Day	1.00	350.00	350.00
	for cleaning/ washing/ curing	Day	39.40	88.50	3486.90
7	Labour cost for shuttering	sqm	250%		8717.25
Total cost of Labour				Rs:	<b>29138.90</b>

labour component/unit qty 1848.90

Add contractor's profit and overhead charges 13.615% 251.70

labour component/unit qty (including contractor's profit) 2100.60**ABSTRACT:**

A. Cost of Materials	Rs: 81533.70
B. Hire charges of Machinery	Rs: 1318.35
C. Cost of Labour	Rs: 29138.90
D. Add for contractor's profit and overheads on (A+B+C)	Total Rs: 15247.57
Total cost for 15.76 cum	13.615% Rs: 127238.52
Rate per cum (A+B+C+D)/15.76	Rs: 8073.50

IRR-CCDW-2-25 Providing and laying insitu vibrated M-20 ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using 20 mm down size approved, clean, hard, graded aggregates for columns and beams including cost of all materials, labour, machinery, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum.  
 (Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement),  
 CA : 0.80cum, Blending Ratio of CA--65:35, FA : 0.45 cum)

DATA:

## RATE ANALYSIS

UNIT : 15.76 cum

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	5200.80	5.35	27824.28
	Cement for incidentals @ 5 kg / cum	kg	78.80	5.35	421.58
2	Coarse aggregate 20-10 mm	cum	8.20	1225.00	10039.12
	Coarse aggregate 10 mm below	cum	4.41	900.00	3971.52
3	Fine aggregate (Un-Screened)	cum	7.09	95.00	673.74
4	Super Plasticizer	kg	20.80	55.00	1144.18
5	Use rate of shuttering	sqm	78.80	224.57	17695.92
6	Scaffolding @ of shuttering	50%			8847.96
	Sundries	LS	1.00	30.00	30.00
Total cost of Materials				Rs:	70648.30

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	1318.35

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials for loading mortar pans for laying for conveying concrete for cleaning/ washing/ curing	Day	11.00	350.00	3850.00
		Day	4.00	350.00	1400.00
		Day	3.00	350.00	1050.00
		Day	15.76	350.00	5516.00
7	Labour cost for shuttering Labour cost for scaffolding @	sqm	78.80	88.50	6973.80
		50%			3486.90
Total cost of Labour				Rs:	26600.45

labour component/unit qty	1687.80
Add contractor's profit and overhead charges	13.615% 229.80
labour component/unit qty (including contractor's profit)	<u>1917.60</u>

**ABSTRACT:**

A. Cost of Materials	Rs: 70648.30
B. Hire charges of Machinery	Rs: 1318.35
C. Cost of Labour	Rs: 26600.45
Total	Rs: 98567.10
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 13419.91
Total cost for	15.76 cum
Rate per cum	(A+B+C+D)/15.76
	Rs: 111987.01
	Rs: 7105.80

IRR-CCDW-2-26 Providing and laying insitu M-20 ( 28 days cube compressive strength not less than 20 N /

sqmm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates **for wearing coat** including cost of all materials, machinery, labour, formwork, cleaning, batching, mixing, placing in position in alternate panels, levelling, compacting, finishing, curing, packing joints with asphalt mortar etc., complete **with initial lead upto 50 m and all lifts.**

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum. to the data  
 (Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement),  
 CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum)

DATA:

## RATE ANALYSIS

UNIT : 15.76 cum

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	5200.80	5.35	27824.28
	Cement for incidentals @ 5 kg / cum	kg	78.80	5.35	421.58
2	Coarse aggregate 20-10 mm	cum	8.20	1225.00	10039.12
	Coarse aggregate 10 mm below	cum	4.41	900.00	3971.52
3	Fine aggregate (Un-Screened)	cum	7.09	95.00	673.74
4	Super Plasticizer	kg	20.80	55.00	1144.18
5	Use rate of shuttering	sqm	7.88	224.57	1769.59
6	Sundries ( asphalt mortar etc )	LS	5.00	30.00	150.00
Total cost of Materials				Rs:	<b>45994.01</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( petrol )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	<b>1318.35</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	2.00	445.00	890.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor	Day	11.00	350.00	3850.00
	for batching materials	Day	4.00	350.00	1400.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	15.76	350.00	5516.00
	for conveying concrete	Day	2.00	350.00	700.00
7	for cleaning/ washing/ curing	Day	7.88	88.50	697.38
Total cost of Labour				Rs:	<b>17982.13</b>

labour component/unit qty 1141.00  
 Add contractor's profit and overhead charges 13.615% 155.30  
 labour component/unit qty (including contractor's profit) **1296.30**

**ABSTRACT:**

A. Cost of Materials	Rs: 45994.01
B. Hire charges of Machinery	Rs: 1318.35
C. Cost of Labour	Rs: 17982.13
D. Add for contractor's profit and overheads on (A+B+C)	Total Rs: 65294.49
Total cost for 15.76 cum	13.615% Rs: 8889.84
<b>Rate per cum</b>	<b>Rs: 74184.33</b>
	(A+B+C+D)/15.76 Rs: <b>4707.10</b>

IRR-CCDW-2-27 Providing and laying **insitu vibrated M-20** ( 28 days cube compressive strength not less than 20 N / sq mm ) grade cement concrete using **20 mm down size** approved, clean, hard, graded aggregates **for troughs** including cost of all materials, machinery, labour, formwork, scaffolding, cleaning, batching, mixing, placing in position, levelling, vibrating, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

Note: If water is to be brought from other place add only lead charges @ 500 ltr / cum. to the data  
 (Cement content: 330 kg / cum with use of super plasticiser(0.4% by wt. of cement),  
 CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum)

DATA:

**RATE ANALYSIS**UNIT : **15.76 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	5200.80	5.35	27824.28
	Cement for incidentals @ 5 kg / cum	kg	78.80	5.35	421.58
2	Coarse aggregate 20-10 mm	cum	8.20	1225.00	10039.12
	Coarse aggregate 10 mm below	cum	4.41	900.00	3971.52
3	Fine aggregate (Un-Screened)	cum	7.09	95.00	673.74
4	Super Plasticizer	kg	20.80	55.00	1144.18
5	Use rate of shuttering for 40 uses	sqm	70.92	224.57	15926.33
	Scaffolding @ of shuttering	25%			3981.58
6	Sundries	LS	0.50	30.00	15.00
Total cost of Materials				Rs:	<b>63997.33</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Needle vibrator 40 mm dia ( diesel )	Hour	8.00	7.60	60.80
	Fuel / Energy charges	Hour	8.00	18.80	150.40
Total hire charges of Machinery				Rs:	<b>1318.35</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Needle vibrator	Hour	8.00	158.20	1265.60
4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor for batching materials	Day	11.00	350.00	3850.00
	for loading mortar pans	Day	4.00	350.00	1400.00
	for laying	Day	5.00	350.00	1750.00
	for conveying concrete	Day	15.76	350.00	5516.00
	for cleaning/ washing/ curing	Day	1.00	350.00	350.00
7	Labour cost for shuttering	sqm	70.92	88.50	6276.42
	Labour cost for scaffolding @	25%			1569.11
Total cost of Labour				Rs:	<b>24685.28</b>

labour component/unit qty 1566.30

Add contractor's profit and overhead charges 13.615% 213.30labour component/unit qty (including contractor's profit) **1779.60****ABSTRACT:**

A. Cost of Materials	Rs: 63997.33
B. Hire charges of Machinery	Rs: 1318.35
C. Cost of Labour	Rs: 24685.28
D. Add for contractor's profit and overheads on (A+B+C)	Total Rs: 12253.63
Total cost for 15.76 cum	13.615% Rs: 102254.58
Rate per cum (A+B+C+D)/15.76	Rs. 6488.20

**IRR-CCDW-3 FOUNDATION WELL SINKING WORKS :****IRR-CCDW-3-1 Sinking RCC wells vertically for foundation of piers and abutments in all kinds of soil,**

DATA: Unit = Running meter

Taking output = 1m

diameter of well = 6.00m

- (i) Depth below bed level upto 3.0m  
 Rate of sinking = 0.50 m /hour

**a) Labour**

0.12	Mate (Mason Cl- II )	400.00	day	48.00
1.00	Sinker ( skilled)	445.00	day	445.00
2.00	Sinking helper ( Semi skilled)	350.00	day	700.00
	sub total (a)			1193.00

**b) Machinery**

2.00	Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	519.70	hour	1039.40
	Fuel Charges	299.90	hour	599.80
	Crew Charges	177.50	hour	355.00
	Consumables in sinking @ 10% of machinery charges			199.42
	sub total (b)			2193.62
	sub total (a+b)			3386.62

c) Add for Contractor's profit and overhead charges on (A+B)	13.615%	461.09
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<b>Rate per metre = (a+b+c)/1.0</b>	<u>3847.71</u>
or say ( Rate upto 3.0m for 6.0 m well sinking )	<b><u>3847.70</u></b>

labour component/unit qty	1548.00
Contractor's profit and overhead charges	210.80
labour component/unit qty(including contractor's profit)	<b><u>1758.80</u></b>

- (ii) Beyond 3m and upto 10m depth  
Rate of sinking = 0.33 m per hour.

**a) Labour**

0.15	Mate (Mason Cl- II )	400.00	day	60.00
1.25	Sinker ( skilled)	445.00	day	556.25
2.50	Sinking helper ( Semi skilled)	350.00	day	875.00
	sub total (a)			1491.25

**b) Machinery**

3.00	Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	519.70	hour	1559.10
	Fuel Charges	299.90	hour	899.70
	Crew Charges	177.50	hour	532.50
	Consumables in sinking @ 10% of machinery charges			299.13
	sub total (b)			3290.43
	sub total (a+b)			4781.68

c) Add for Contractor's profit and overhead charges on (A+B)	13.615%	651.03
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<b>Rate per metre = (a+b+c)</b>	<u>5432.71</u>
or say ( Rate for 3.0m to 10m well sinking )	<b><u>5432.70</u></b>

labour component/unit qty	2023.80
Contractor's profit and overhead charges	275.50
labour component/unit qty(including contractor's profit)	<b><u>2299.30</u></b>

IRR-CCDW-3-2 **Filling foundation wells with sand in layers of 25 to 30 cm and compacting by watering, ramming as directed including cost of all materials, machinery, labour etc., complete with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **15.00** cum**A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Sand for filling	cum	15.75	95.00 0.00	1496.25 0.00
Total cost of Materials					Rs: <b><u>1496.25</u></b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery					Rs: <b><u>0.00</u></b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
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1	work inspector	Day	0.25	450.00	112.50
2	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>1512.50</b>
labour component/unit qty			100.80		
Add contractor's profit and overhead charges			13.615%	13.70	
labour component/unit qty (including contractor's profit)				<b>114.50</b>	

**ABSTRACT:**

A. Cost of Materials	Rs:	1496.25
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	<u>1512.50</u>
	Total	Rs: <u>3008.75</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	409.64
Total cost for	15.00 cum	Rs: <b>3418.39</b>
<b>Rate per cum</b>	(A+B+C+D)/15.0	Rs. <b>227.90</b>

**IRR-CCDW-4 MASONRY WORKS :**

IRR-CCDW-4-1 Providing and **constructing un-coursed rubble stone masonry** with approved stones in **CM 1 : 4** proportion for sub-structure portions of return walls / abutments etc., including cost of all materials, machinery, labour, scaffolding, cleaning, packing cement mortar, wedging stone chips, curing etc., complete with initial lead upto 50 m and all lifts.  
**(Cement content: 143 kg / cum of masonry, rubble stones : 0.85cum, FA : 0.40 cum, Stone Chips : 0.15 cum)**

DATA:

**RATE ANALYSIS**UNIT : **10.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	1430.00	5.35	7650.50
2	Rubble stones	cum	8.50	318.00	2703.00
3	Stone chips	cum	1.50	350.00	525.00
4	Sand (Screened)	cum	4.00	165.00	660.00
Total cost of Materials				Rs:	<b>11538.50</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
Total hire charges of Machinery				Rs:	<b>747.15</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Water tanker	Hour	1.00	177.50	177.50
2	Crew for Pump	Hour	0.50	111.10	55.55
3	work inspector	Day	1.00	450.00	450.00
4	Mason Class-I	Day	1.00	445.00	445.00
5	Mason Class-II	Day	2.00	400.00	800.00
6	mazdoor for conveying rubble stones for preparing mortar for loading mortar pans for laying & packing mortar for washing rubble / finishing / curing for conveying mortar / chips	Day	4.00	350.00	1400.00
		Day	2.00	350.00	700.00
		Day	1.00	350.00	350.00
		Day	3.00	350.00	1050.00
		Day	1.00	350.00	350.00
		Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>7178.05</b>

labour component/unit qty **717.80**  
Add contractor's profit and overhead charges **13.615% 97.70**  
labour component/unit qty (including contractor's profit) **815.50**

**ABSTRACT:**

A. Cost of Materials	Rs:	11538.50
B. Hire charges of Machinery	Rs:	747.15
C. Cost of Labour	Rs:	<u>7178.05</u>
	Total	Rs: <u>19463.70</u>

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	2649.98
Total cost for	10.00 cum	Rs:	<b>22113.68</b>
<b>Rate per cum</b>	(A+B+C+D)/10.0	Rs.	<b>2211.40</b>

- IRR-CCDW-4-2 Providing and **constructing un-coursed rubble stone masonry** with approved stones in **CM 1 : 4** proportion for super-structure portions of return walls / abutments etc., including cost of all materials, machinery, labour, scaffolding, cleaning, packing cement mortar, wedging stone chips, curing etc., complete with initial lead upto 50 m and all lifts.  
**(Cement content: 143 kg / cum of masonry, rubble stones : 0.85cum, FA : 0.40 cum, Stone Chips : 0.15 cum)**

DATA:

**RATE ANALYSIS****UNIT : 10.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	1430.00	5.35	7650.50
2	Rubble stones	cum	8.50	318.00	2703.00
3	Stone chips	cum	1.50	350.00	525.00
4	Sand (Screened)	cum	4.00	165.00	660.00
TOTAL				Rs:	11538.50
Add for scaffolding @				2.5%	Rs: 288.46
Total cost of Materials				Rs:	<b>11826.96</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
Total hire charges of Machinery				Rs:	<b>747.15</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Water tanker	Hour	1.00	177.50	177.50
2	Crew for Pump	Hour	0.50	111.10	55.55
3	work inspector	Day	1.00	450.00	450.00
4	Mason Class-I	Day	1.00	445.00	445.00
5	Mason Class-II	Day	2.00	400.00	800.00
6	mazdoor for conveying rubble stones for preparing mortar for loading mortar pans for laying & packing mortar for washing rubble / finishing / curing for conveying mortar / chips	Day	4.00	350.00	1400.00
		Day	2.00	350.00	700.00
		Day	1.00	350.00	350.00
		Day	3.00	350.00	1050.00
		Day	1.00	350.00	350.00
		Day	4.00	350.00	1400.00
TOTAL				Rs:	7178.05
Add for labour for scaffolding @				2.5%	Rs: 179.45
Total cost of Labour				Rs:	<b>7357.50</b>

labour component/unit qty	735.80
Add contractor's profit and overhead charges	13.615% <u>100.20</u>
labour component/unit qty (including contractor's profit)	<b>836.00</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 11826.96
B. Hire charges of Machinery	Rs: 747.15
C. Cost of Labour	Rs: 7357.50
	Total Rs: 19931.61
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 2713.69
Total cost for	10.00 cum
<b>Rate per cum</b>	(A+B+C+D)/10.0
	Rs. 2264.50

- IRR-CCDW-4-3 Providing and **constructing coursed rubble masonry second sort** in **CM 1:4** proportion with stones from approved source including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, finishing, curing etc., complete with **initial lead upto 50 m and initial lift upto 3m.**

(Cement content: 133 kg / cum of masonry, rubble stones : 0.45cum, FA : 0.35 cum, Stone Chips : 0.15 cum, Khandki stones 25 x 25 x 30 cm : 180 Nos, Header stones 25 x 25x 45 cm : 60 Nos)

DATA:

## RATE ANALYSIS

UNIT : 10.00 cum

## A. MATERIALS:

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	1330.00	5.35	7115.50
2	Header stones 25x25x45 cm	Nos	60.00	39.00	2340.00
3	Khandki stones 25x25x30 cm	Nos	180.00	17.00	3060.00
4	Rubble stones	cum	4.50	318.00	1431.00
5	Stone chips	cum	1.50	350.00	525.00
6	Sand (Screened)	cum	3.50	165.00	577.50
				TOTAL	Rs: 15049.00
Add for scaffolding materials @				2.5%	Rs: 376.23
Total cost of Materials					Rs: 15425.23

## B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
					Rs: 747.15

## C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Water tanker	Hour	1.00	177.50	177.50
2	Crew for Pump	Hour	0.50	111.10	55.55
3	work inspector	Day	1.00	450.00	450.00
4	Stone chiseller Cl -II	Day	3.00	400.00	1200.00
5	Mason Class-I	Day	1.00	445.00	445.00
6	Mason Class-II	Day	2.00	400.00	800.00
7	mazdoor for conveying stones / rubble for preparation of mortar for loading mortar pans for laying & packing mortar for washing rubble / finishing / curing for conveying mortar / chips	Day	4.00 3.00 1.00 3.00 1.00 2.00	350.00 350.00 350.00 350.00 350.00 350.00	1400.00 1050.00 350.00 1050.00 350.00 700.00
				TOTAL	Rs: 8028.05
Add for labour for scaffolding @				2.5%	Rs: 200.70
Total cost of Labour					Rs: 8228.75

labour component/unit qty 822.90

Add contractor's profit and overhead charges 13.615% 112.00

labour component/unit qty (including contractor's profit) 934.90

## ABSTRACT:

A. Cost of Materials	Rs: 15425.23
B. Hire charges of Machinery	Rs: 747.15
C. Cost of Labour	Rs: 8228.75
Total	Rs: 24401.13
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 3322.21
Total cost for 10.00 cum	Rs: 27723.34
Rate per cum (A+B+C+D)/10.0	Rs. 2772.30

IRR-CCDW-4-4 Providing and **constructing coursed rubble masonry first sort** in CM 1:4 proportion with stones from approved source including cost of all materials, machinery, labour, scaffolding, ramps, cleaning, packing mortar, wedging stone chips, finishing, curing etc., complete with initial lead upto 50 m and initial lift upto 3 m.

(Cement content: 133 kg / cum of masonry, rubble stones : 0.45cum, FA : 0.35 cum, Stone Chips : 0.15 cum, Khandki stones 25 x 25 x 30 cm : 180 Nos, Header stones 25 x 25x 45 cm : 60 Nos)

DATA:

## RATE ANALYSIS

UNIT : 10.00 cum

## A. MATERIALS:

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	1330.00	5.35	7115.50
2	Header stones 25x25x45 cm	Nos	60.00	39.00	2340.00
3	Khandki stones 25x25x30 cm	Nos	180.00	17.00	3060.00
4	Rubble stones	cum	4.50	318.00	1431.00
5	Stone chips	cum	1.50	350.00	525.00
6	Sand (Screened)	cum	3.50	165.00	577.50
				TOTAL	Rs: 15049.00
Add for scaffolding materials @				2.5%	Rs: 376.23
Total cost of Materials					Rs: <b>15425.23</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
Total hire charges of Machinery					Rs: <b>747.15</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Water tanker	Hour	1.00	177.50	177.50
2	Crew for Pump	Hour	0.50	111.10	55.55
3	work inspector	Day	1.00	450.00	450.00
4	Stone chiseller Cl -II	Day	6.00	400.00	2400.00
5	Mason Class-I	Day	1.00	445.00	445.00
6	Mason Class-II	Day	2.00	400.00	800.00
7	mazdoor	Day			
8	for conveying rubble/ stones	Day	4.00	350.00	1400.00
	for preparation of mortar	Day	3.00	350.00	1050.00
	for loading mortar pans	Day	1.00	350.00	350.00
	for laying & packing mortar	Day	3.00	350.00	1050.00
	for washing rubble / finishing / curing	Day	1.00	350.00	350.00
	for conveying mortar / chips	Day	2.00	350.00	700.00
				TOTAL	Rs: 9228.05
Add for labour for scaffolding @				2.5%	Rs: 230.70
Total cost of Labour					Rs: <b>9458.75</b>

labour component/unit qty 945.90

Add contractor's profit and overhead charges 13.615% 128.80labour component/unit qty (including contractor's profit) **1074.70****ABSTRACT:**

A. Cost of Materials	Rs: 15425.23
B. Hire charges of Machinery	Rs: 747.15
C. Cost of Labour	Rs: 9458.75
Total	Rs: 25631.13
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 3489.68
Total cost for	10.00 cum Rs: <b>29120.81</b>
Rate per cum	(A+B+C+D)/10.0 Rs: <b>2912.10</b>

**IRR-CCDW-4-5 Providing cement mortar pointing to coursed rubble face stone masonry in CM 1 : 2**

proportion by volume including raking and cleaning joints for 50 mm depth, pressing cement mortar into joints, cost of all materials, labour, scaffolding, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

DATA:

RATE ANALYSIS

UNIT : **100.00 sqm****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	456.00	5.35	2439.60
2	Sand (Screened)	cum	0.75	165.00	123.75
				TOTAL	Rs: 2563.35
Add for scaffolding / ramps etc @				2.5%	Rs: 64.08
Total cost of Materials					Rs: <b>2627.43</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil ( Manual mixing)		0.00	0.00	0.00
	Total hire charges of Machinery		0.00	0.00	0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- I	Day	10.00	445.00	4450.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	10.00	350.00	3500.00
Total cost of Labour				Rs:	<b>8400.00</b>
labour component/unit qty				84.00	
Add contractor's profit and overhead charges				13.615% <u>11.40</u>	
labour component/unit qty (including contractor's profit)				<b>95.40</b>	

**ABSTRACT:**

A. Cost of Materials	Rs:	2627.43
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	8400.00
	Total	11027.43
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	1501.39
Total cost for	100.00 sqm	Rs: <b>12528.82</b>
Rate per sqm	(A+B+C+D)/100.0	Rs. <b>125.30</b>

**IRR-CCDW-4-6 Providing cement mortar pointing to coursed rubble face stone masonry in CM 1 : 3**

proportion by volume including raking and cleaning joints for 50 mm depth, pressing cement mortar into joints, cost of all materials, labour, scaffolding, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	322.00	5.35	1722.70
2	Sand (Screened)	cum	0.75	165.00	123.75
				TOTAL	1846.45
Add for scaffolding / ramps etc @				2.5%	Rs: 46.16
Total cost of Materials				Rs:	<b>1892.61</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil ( Manual mixing)		0.00	0.00	0.00
	Total hire charges of Machinery		0.00	0.00	0.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- I	Day	10.00	445.00	4450.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	10.00	350.00	3500.00
Total cost of Labour				Rs:	<b>8400.00</b>
labour component/unit qty				84.00	
Add contractor's profit and overhead charges				13.615% <u>11.40</u>	
labour component/unit qty (including contractor's profit)				<b>95.40</b>	

**ABSTRACT:**

A. Cost of Materials	Rs:	1892.61
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	8400.00
	Total	10292.61
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	1401.34
Total cost for	100.00 sqm	Rs: <b>11693.95</b>
Rate per sqm	(A+B+C+D)/100.0	Rs. <b>116.90</b>

**IRR-CCDW-4-7 Providing 12 mm thick plastering in cement mortar 1:3 proportion by volume including cost of all materials, machinery, labour, scaffolding, cleaning joints, smooth finishing, curing etc., complete with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	629.00	5.35	3365.15
2	Sand (Screened)	cum	1.32	165.00	217.80
				TOTAL	Rs: 3582.95
	Add for scaffolding / ramps etc @		2.5%	Rs:	89.57
				Total cost of Materials	Rs: <b>3672.52</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil ( Manual mixing)		0.00	0.00	0.00
			0.00	0.00	0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- I	Day	10.00	445.00	4450.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	20.00	350.00	7000.00
	Total cost of Labour			Rs:	<b>11900.00</b>

labour component/unit qty 119.00

Add contractor's profit and overhead charges 13.615% 16.20

labour component/unit qty (including contractor's profit) 135.20**ABSTRACT:**

A. Cost of Materials	Rs: 3672.52
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 11900.00
	Total Rs: 15572.52
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 2120.2
Total cost for 100.00 sqm	Rs: <b>17692.72</b>
Rate per sqm (A+B+C+D)/100.00	Rs. <b>176.90</b>

**IRR-CCDW-4-8 Providing 12 mm thick plastering in cement mortar 1:4 proportion by volume including cost of all materials, machinery, labour, scaffolding, cleaning joints, smooth finishing, curing etc., complete with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	472.00	5.35	2525.20
2	Sand (Screened)	cum	1.32	165.00	217.80
				TOTAL	Rs: 2743.00
	Add for scaffolding / ramps etc @		2.5%	Rs:	68.58
				Total cost of Materials	Rs: <b>2811.58</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil ( Manual mixing)		0.00	0.00	0.00
			0.00	0.00	0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	Mason Cl- I	Day	10.00	445.00	4450.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	20.00	350.00	7000.00
Total cost of Labour				Rs:	<b>11900.00</b>

labour component/unit qty	119.00
Add contractor's profit and overhead charges	13.615% 16.20
labour component/unit qty (including contractor's profit)	<b>135.20</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 2811.58
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 11900.00
	Total Rs: 14711.58
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 2002.98
Total cost for	100.00 sqm Rs: <b>16714.555</b>
<b>Rate per sqm</b>	(A+B+C+D)/100.00 Rs. <b>167.10</b>

IRR-CCDW-4-9 **Providing 20 mm thick plastering in cement mortar 1:3 proportion by volume including cost of all materials, machinery, labour, scaffolding, cleaning joints, smooth finishing, curing etc., complete with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	1050.00	5.35	5617.50
2	Sand (Screened)	cum	2.20	165.00	363.00
			TOTAL	Rs:	5980.50
	Add for scaffolding / ramps etc @		2.5%	Rs:	149.51
				Rs:	<b>6130.01</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil ( Manual mixing)		0.00	0.00	0.00
			0.00	0.00	0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- I	Day	15.00	445.00	6675.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	25.00	350.00	8750.00
			Total cost of Labour	Rs:	<b>15875.00</b>

labour component/unit qty	158.80
Add contractor's profit and overhead charges	13.615% 21.60
labour component/unit qty (including contractor's profit)	<b>180.40</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 6130.01
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 15875.00
	Total Rs: 22005.01
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 2995.98
Total cost for	100.00 sqm Rs: <b>25000.99</b>
<b>Rate per sqm</b>	(A+B+C+D)/100.00 Rs. <b>250.00</b>

IRR-CCDW-4-10 **Providing 20 mm thick plastering in cement mortar 1:4 proportion by volume including cost of all materials, machinery, labour, scaffolding, cleaning joints, smooth finishing, curing etc., complete with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **100.00 sqm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	Cement	kg	788.00	5.35	4215.80
2	Sand (Screened)	cum	2.20	165.00	363.00
				TOTAL	Rs: 4578.80
	Add for scaffolding / ramps etc @		2.5%		Rs: 114.47
	Total cost of Materials				Rs: 4693.27

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil ( Manual mixing)		0.00	0.00	0.00
			0.00	0.00	0.00
	Total hire charges of Machinery			Rs:	0.00

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- I	Day	15.00	445.00	6675.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	25.00	350.00	8750.00
	Total cost of Labour			Rs:	15875.00

labour component/unit qty 158.80

Add contractor's profit and overhead charges 13.615% 21.60

labour component/unit qty (including contractor's profit) 180.40

**ABSTRACT:**

A. Cost of Materials	Rs: 4693.27
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 15875.00
	Total Rs: 20568.27
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 2800.37
Total cost for 100.00 sqm	Rs: 23368.64
Rate per sqm (A+B+C+D)/100.0	Rs. 233.70

**IRR-CCDW-5 COPING & RAILING WORKS :**

IRR-CCDW-5-1 Providing and fixing 10 cm thick roughly dressed burnt stone slabs for coping set in

**CM 1: 6** proportion by volume with pointing to joints in CM 1 : 3 proportion by volume including cost of all materials, machinery, labour, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

(Cement content: 7.5 kg / sqm, FA : 0.030 cum/sqm,  
Burnt stone slab 10 cm thick 1.05 sqm/ sqm)

DATA:

**RATE ANALYSIS**

UNIT : 10.00 sqm

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	75.00	5.35	401.25
2	Sand (Screened)	cum	0.30	165.00	49.50
3	Burnt stone slab 10 cm thick	sqm	10.50	320.00	3360.00
	Total cost of Materials			Rs:	3810.75

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil ( Manual mixing)		0.00	0.00	0.00
			0.00	0.00	0.00
	Total hire charges of Machinery			Rs:	0.00

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	1.00	400.00	400.00
2	Stone chiseller Cl- II	Day	1.00	400.00	400.00
3	work inspector	Day	0.50	450.00	225.00
4	mazdoor	Day	2.00	350.00	700.00
	Total cost of Labour			Rs:	1725.00

labour component/unit qty 172.50

Add contractor's profit and overhead charges 13.615% 23.50

labour component/unit qty (including contractor's profit) 196.00

**ABSTRACT:**

A. Cost of Materials	Rs: 3810.75
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1725.00
	Total Rs: 5535.75
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 753.69
Total cost for 10.00 sqm	Rs: 6289.44
<b>Rate per sqm</b>	(A+B+C+D)/10.00 Rs. 628.90

IRR-CCDW-5-2 Providing and fixing **10 cm thick one line dressed burnt stone slabs for coping** set in  
**CM 1: 6** proportion by volume with pointing to joints in CM 1 : 3 proportion by volume including  
cost of all materials, machinery, labour, finishing, curing etc., complete with initial lead upto  
**50 m and all lifts.**  
(Cement content: 7.5 kg / sqm, FA : 0.030 cum/sqm, Burnt stone slab 10 cm  
thick 1.05 sqm/ sqm)

DATA:

**RATE ANALYSIS**UNIT : **10.00 sqm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	75.00	5.35	401.25
2	Sand (Screened)	cum	0.30	165.00	49.50
3	Burnt stone slab 10 cm thick	sqm	10.50	320.00	3360.00
Total cost of Materials					Rs: <b>3810.75</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil ( Manual mixing)		0.00	0.00	0.00
Total hire charges of Machinery					Rs: <b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	1.00	400.00	400.00
2	Stone chiseller Cl- I	Day	4.00	445.00	1780.00
3	work inspector	Day	0.50	450.00	225.00
4	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour					Rs: <b>3105.00</b>

labour component/unit qty 310.50

Add contractor's profit and overhead charges 13.615% 42.30

labour component/unit qty (including contractor's profit) **352.80****ABSTRACT:**

A. Cost of Materials	Rs: 3810.75
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 3105.00
	Total Rs: 6915.75
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 941.58
Total cost for 10.00 sqm	Rs: 7857.33
<b>Rate per sqm</b>	(A+B+C+D)/10.00 Rs. 785.70

IRR-CCDW-5-3 Providing and fixing **10 cm thick two line dressed burnt stone slabs for coping** set in  
**CM 1: 6** proportion by volume with pointing to joints in CM 1 : 3 proportion by volume including  
cost of all materials, machinery, labour, finishing, curing etc., complete with initial lead upto  
**50 m and all lifts.**  
(Cement content: 7.5 kg / sqm, FA : 0.030 cum/sqm, Burnt stone slab 10 cm  
thick 1.05 sqm/ sqm)

DATA:

**RATE ANALYSIS**UNIT : **10.00 sqm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	75.00	5.35	401.25
2	Sand (Screened)	cum	0.30	165.00	49.50
3	Burnt stone slab 10 cm thick	sqm	10.50	320.00	3360.00
Total cost of Materials					Rs: <b>3810.75</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nil ( Manual mixing)		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	1.00	400.00	400.00
2	Stone chiseller Cl-I	Day	8.00	445.00	3560.00
3	work inspector	Day	0.50	450.00	225.00
4	mazdoor	Day	2.00	350.00	700.00
	Total cost of Labour			Rs:	<b>4885.00</b>

labour component/unit qty 488.50  
 Add contractor's profit and overhead charges 13.615% 66.50  
 labour component/unit qty (including contractor's profit) **555.00**

**ABSTRACT:**

A. Cost of Materials	Rs: 3810.75
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 4885.00
	Total Rs: 8695.75
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 1183.93
Total cost for 10.00 sqm	Rs: <b>9879.68</b>
<b>Rate per sqm</b>	Rs. <b>988.00</b>

IRR-CCDW-5-4 Providing and laying insitu M-15 ( 28 days cube compressive strength not less than 15 N / sqmm ) grade cement concrete using **20 mm down size** approved clean, hard, graded aggregates for coping slab including cost of all materials, machinery, labour, formwork, cleaning surface, batching, mixing, placing in position, levelling, compacting, finishing, curing etc., complete with initial lead upto 50 m and initial lift upto 3 m.  
 (Cement content: 300 kg / cum with use of super plasticiser(0.4% by wt. of cement), CA : 0.80cum, Blending Ratio of CA-65:35, FA : 0.45 cum)

DATA:

**RATE ANALYSIS**UNIT : **14.67** cum**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement for mix	kg	4401.00	5.35	23545.35
	Cement for incidentals @ 5 kg / cum	kg	73.35	5.35	392.42
2	Coarse aggregate 20-10 mm	cum	7.63	1225.00	9344.79
	Coarse aggregate 10 mm below	cum	4.11	900.00	3696.84
3	Fine aggregate (Un-Screened)	cum	6.60	95.00	627.14
4	Super Plasticizer	kg	17.60	55.00	968.22
5	Use rate of shuttering	sqm	80.69	224.57	18119.23
6	Sundries	sqm	1.00	30.00	30.00
	Total cost of Materials			Rs:	<b>56724.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Concrete mixer 300/200 ltr ( diesel )	Hour	8.00	53.50	428.00
	Fuel / Energy charges	Hour	8.00	79.30	634.40
2	5 hp pump ( diesel )	Hour	0.50	10.20	5.10
	Fuel / Energy charges	Hour	0.50	79.30	39.65
3	Water tanker 8000 ltr	Hour	1.00	402.50	402.50
	Fuel / Energy charges	Hour	1.00	299.90	299.90
	Total hire charges of Machinery			Rs:	<b>1809.55</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Concrete mixer	Hour	8.00	219.70	1757.60
2	Crew for Pump	Hour	0.50	111.10	55.55
3	Crew for Water tanker	Hour	1.00	177.50	177.50

4	Mason Class-I	Day	1.00	445.00	445.00
5	work inspector	Day	1.00	450.00	450.00
6	mazdoor	Day	11.00	350.00	3850.00
	for batching materials	Day	4.00	350.00	1400.00
	for loading mortar pans	Day	3.00	350.00	1050.00
	for laying and tamping	Day	14.67	350.00	5134.50
	for conveying concrete	Day	1.00	350.00	350.00
	for cleaning/ washing/ curing	sqm	80.69	88.50	7140.62
7	Labour cost for shuttering/scaffolding				
		Total cost of Labour		Rs:	<b>21810.77</b>
	labour component/unit qty		1486.80		
	Add contractor's profit and overhead charges		13.615% 202.40		
	labour component/unit qty (including contractor's profit)		<b>1689.20</b>		
<b>ABSTRACT:</b>					
A. Cost of Materials				Rs:	56724.00
B. Hire charges of Machinery				Rs:	1809.55
C. Cost of Labour				Rs:	<b>21810.77</b>
D. Add for contractor's profit and overheads on (A+B+C)			Total	Rs:	80344.32
Total cost for		14.67 cum	13.615% Rs:		10938.88
<b>Rate per cum</b>		(A+B+C+D)/14.67	Rs:	<b>91283.20</b>	
			Rs.		<b>6222.40</b>

IRR-CCDW-5-5 Providing and **constructing protective railing** consisting of in-situ railing posts of size 15 x 15 cm at bottom, 10 x 10 cm at top and 75 cm height at 2 m centre to centre in **M-20** grade concrete using **20 mm down size** graded aggregates and with each post reinforced by 4 Nos. of 8 mm dia main bars embedded in kerb concrete for a depth of 40 cm and 5 Nos. of 6 mm dia. stirrups including fixing 3 rows of 40 mm dia. GI pipes with one coat of red oxide primer and two coats of synthetic enamel paint, cost of all materials, machinery, labour, formwork, finishing, curing etc., complete **with lead upto 50 m and all lifts**.

DATA:

**RATE ANALYSIS**UNIT : **10.00 Rm****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	30.00	5.35	160.50
2	20-10 mm coarse aggregate	cum	0.04	1225.00	49.00
3	10-4.75 mm coarse aggregate	cum	0.02	900.00	18.00
4	Fine aggregate (Un-Screened)	cum	0.04	95.00	3.80
5	Reinforcement steel	kg	16.39	34.00	557.26
6	40 mm dia GI pipes B class	Rm	30.00	270.00	8100.00
7	Use rate of shuttering	sqm	3.00	224.57	673.70
8	Sundries ( paints/ binding wire etc )	LS	4.00	30.00	120.00
	Total cost of Materials			Rs:	<b>9682.26</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
			0.00	0.00	0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Class I	Day	0.50	445.00	222.50
2	Bar bender	Day	0.50	555.00	277.50
3	work inspector	Day	0.50	450.00	225.00
4	mazdoor	Day	1.50	350.00	525.00
5	Painter Cl- II	Day	0.50	400.00	200.00
6	Fitter shuttering	Day	0.50	400.00	200.00
	Total cost of Labour			Rs:	<b>1650.00</b>

labour component/unit qty	165.00
Add contractor's profit and overhead charges	13.615% 22.50
labour component/unit qty (including contractor's profit)	<b>187.50</b>

**ABSTRACT:**

A. Cost of Materials Rs: 9682.26

B. Hire charges of Machinery		Rs:	0.00
C. Cost of Labour		Rs:	1650.00
	Total	Rs:	11332.26
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	1542.89
Total cost for	10.00 Rm	Rs:	12875.15
Rate per Rm	(A+B+C+D)/10.0	Rs.	1287.50

## IRR-CCDW-6 HUME PIPE LAYING &amp; JOINTING WORKS :

IRR-CCDW-6-1 Laying and jointing 300 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.  
(Cement content: 9.9 kg / joint, FA : 0.01cum/joint, Hemp Yarn : 0.091kg/joint)

DATA:

## RATE ANALYSIS

UNIT : 10.00 Joints

## A. MATERIALS:

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	99.00	5.35	529.65
2	Sand (Screened)	cum	0.10	165.00	16.50
3	Hemp yarn	kg	0.91	72.00	65.52
Total cost of Materials					Rs: 611.67

## B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill ( Manual mixing )		0.00	0.00	0.00
Total hire charges of Machinery					Rs: 0.00

## C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	2.00	400.00	800.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour					Rs: 2300.00

labour component/unit qty 230.00

Add contractor's profit and overhead charges 13.615% 31.30

labour component/unit qty (including contractor's profit) 261.30

## ABSTRACT:

A. Cost of Materials	Rs:	611.67
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	2300.00
	Total	2911.67
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	396.42
Total cost for	10.00 Joints	Rs: 3308.09
Rate per joint	(A+B+C+D)/10.0	Rs. 330.80

Note:

(1) For NP3 Class - 10% extra over the rates of NP2 Class

(2) For NP4 Class - 20% extra over the rates of NP2 Class

IRR-CCDW-6-2 Laying and jointing 450 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.  
(Cement content: 17.4 kg / joint, FA : 0.022cum/joint, Hemp Yarn : 0.127kg/joint)

DATA:

## RATE ANALYSIS

UNIT : 10.00 Joints

## A. MATERIALS:

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	174.00	5.35	930.90
2	Sand (Screened)	cum	0.22	165.00	36.30
3	Hemp yarn	kg	1.27	72.00	91.44

Total cost of Materials	Rs:	<b>1058.64</b>
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**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill ( Manual mixing )		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	2.00	400.00	800.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour				Rs:	<b>2300.00</b>

labour component/unit qty	230.00
Add contractor's profit and overhead charges	13.615% <u>31.30</u>
labour component/unit qty (including contractor's profit)	<u><b>261.30</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 1058.64
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2300.00
Total	Rs: 3358.64
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 457.28
Total cost for	10.00 Joints Rs: <b>3815.92</b>
Rate per joint	(A+B+C+D)/10.0 Rs: <b>381.60</b>

Note:  
(1) For NP3 Class - 10% extra over the rates of NP2 Class  
(2) For NP4 Class - 20% extra over the rates of NP2 Class

IRR-CCDW-6-3 Laying and **jointing 600 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2**  
proportion by volume including cost of all materials ( excluding pipes and collars ), machinery,  
labour, aligning, packing joints with hemp, finishing, curing etc., complete **with initial lead upto  
50 m and all lifts.**  
(Cement content: 24.8 kg / joint, FA : 0.025cum/joint, Hemp Yarn : 0.22kg/joint)

DATA:

**RATE ANALYSIS**UNIT : **10.00 Joints****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	248.00	5.35	1326.80
2	Sand (Screened)	cum	0.25	165.00	41.25
3	Hemp yarn	kg	2.20	72.00	158.40
Total cost of Materials				Rs:	<b>1526.45</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill ( Manual mixing )		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	2.50	400.00	1000.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>2850.00</b>

labour component/unit qty	285.00
Add contractor's profit and overhead charges	13.615% <u>38.80</u>
labour component/unit qty (including contractor's profit)	<u><b>323.80</b></u>

**ABSTRACT:**

A. Cost of Materials	Rs: 1526.45
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2850.00

D. Add for contractor's profit and overheads on (A+B+C)	Total	Rs: 4376.45
Total cost for	13.615%	Rs: 595.85
<b>Rate per joint</b>	10.00 Joints	Rs: 4972.3

(A+B+C+D)/10.0 Rs. 497.20

**Note:**  
(1) For NP3 Class - 10% extra over the rates of NP2 Class  
(2) For NP4 Class - 20% extra over the rates of NP2 Class

IRR-CCDW-6-4 Laying and jointing 700 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.  
(Cement content: 32.1 kg / joint, FA : 0.031cum/joint, Hemp Yarn : 0.25kg/joint)

DATA:

**RATE ANALYSIS**UNIT : **10.00 Joints****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	321.00	5.35	1717.35
2	Sand (Screened)	cum	0.31	165.00	51.15
3	Hemp yarn	kg	2.50	72.00	180.00
Total cost of Materials					Rs: 1948.50

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill ( Manual mixing )		0.00	0.00	0.00
Total hire charges of Machinery					Rs: 0.00

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	2.50	400.00	1000.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour					Rs: 2850.00

labour component/unit qty 285.00

Add contractor's profit and overhead charges 13.615% 38.80

labour component/unit qty (including contractor's profit) 323.80

**ABSTRACT:**

A. Cost of Materials	Rs: 1948.50
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2850.00
<b>D. Add for contractor's profit and overheads on (A+B+C)</b>	<b>Total Rs: 4798.50</b>
Total cost for	13.615% 653.32
<b>Rate per joint</b>	<b>10.00 Joints Rs: 5451.82</b>

(A+B+C+D)/10.0 Rs. 545.20

**Note:**  
(1) For NP3 Class - 10% extra over the rates of NP2 Class  
(2) For NP4 Class - 20% extra over the rates of NP2 Class

IRR-CCDW-6-5 Laying and jointing 800 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.  
(Cement content: 39.6 kg / joint, FA : 0.039cum/joint, Hemp Yarn : 0.31kg/joint)

DATA:

**RATE ANALYSIS**UNIT : **10.00 Joints****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	396.00	5.35	2118.60
2	Sand (Screened)	cum	0.39	165.00	64.35
3	Hemp yarn	kg	3.10	72.00	223.20
Total cost of Materials					Rs: 2406.15

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill ( Manual mixing )		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	3.00	400.00	1200.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	5.00	350.00	1750.00
	Total cost of Labour			Rs:	<b>3400.00</b>
	labour component/unit qty			340.00	
	Add contractor's profit and overhead charges			13.615% 46.30	
	labour component/unit qty (including contractor's profit)			<u>386.30</u>	

**ABSTRACT:**

A. Cost of Materials	Rs: 2406.15
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 3400.00
	Total Rs: 5806.15
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 790.51
Total cost for	10.00 Joints Rs: 6596.66
Rate per joint	(A+B+C+D)/10.0 Rs: 659.70

Note:  
(1) For NP3 Class - 10% extra over the rates of NP2 Class  
(2) For NP4 Class - 20% extra over the rates of NP2 Class

IRR-CCDW-6-6 Laying and **jointing 900 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.**  
**(Cement content: 44.6 kg / joint, FA : 0.045cum/joint, Hemp Yarn : 0.34kg/joint)**

DATA:

**RATE ANALYSIS**UNIT : **10.00 Joints****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	446.00	5.35	2386.10
2	Sand (Screened)	cum	0.45	165.00	74.25
3	Hemp yarn	kg	3.40	72.00	244.80
	Total cost of Materials			Rs:	<b>2705.15</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill ( Manual mixing )		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	3.00	400.00	1200.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	5.00	350.00	1750.00
	Total cost of Labour			Rs:	<b>3400.00</b>
	labour component/unit qty			340.00	
	Add contractor's profit and overhead charges			13.615% 46.30	
	labour component/unit qty (including contractor's profit)			<u>386.30</u>	

**ABSTRACT:**

A. Cost of Materials	Rs: 2705.15
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 3400.00
	Total Rs: 6105.15

D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs:	831.22
Total cost for	10.00 Joints	Rs:	<b>6936.37</b>
<b>Rate per joint</b>	(A+B+C+D)/10.0	Rs.	<b>693.60</b>

Note:  
(1) For NP3 Class - 10% extra over the rates of NP2 Class  
(2) For NP4 Class - 20% extra over the rates of NP2 Class

IRR-CCDW-6-7 Laying and jointing 1000 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto **50 m and all lifts.**  
(Cement content: 49.5 kg / joint, FA : 0.05cum/joint, Hemp Yarn : 0.377kg/joint)

DATA:

**RATE ANALYSIS**UNIT : **10.00 Joints****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	495.00	5.35	2648.25
2	Sand (Screened)	cum	0.50	165.00	82.50
3	Hemp yarn	kg	3.77	72.00	271.44
Total cost of Materials					Rs: <b>3002.19</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill ( Manual mixing )		0.00	0.00	0.00
Total hire charges of Machinery					Rs: <b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	3.00	400.00	1200.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour					Rs: <b>3750.00</b>

labour component/unit qty 375.00

Add contractor's profit and overhead charges 13.615% 51.10  
labour component/unit qty (including contractor's profit) **426.10****ABSTRACT:**

A. Cost of Materials	Rs: 3002.19
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 3750.00
<b>Total</b>	Rs: 6752.19
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 919.31
Total cost for	10.00 Joints Rs: <b>7671.5</b>
<b>Rate per joint</b>	(A+B+C+D)/10.0 Rs: <b>767.20</b>

Note:  
(1) For NP3 Class - 10% extra over the rates of NP2 Class  
(2) For NP4 Class - 20% extra over the rates of NP2 Class

IRR-CCDW-6-8 Laying and jointing 1100 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto **50 m and all lifts.**  
(Cement content: 56.9 kg / joint, FA : 0.058cum/joint, Hemp Yarn : 0.415kg/joint)

DATA:

**RATE ANALYSIS**UNIT : **10.00 Joints****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	569.00	5.35	3044.15
2	Sand (Screened)	cum	0.58	165.00	95.70
3	Hemp yarn	kg	4.15	72.00	298.80
Total cost of Materials					Rs: <b>3438.65</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill ( Manual mixing )		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	3.00	400.00	1200.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	6.00	350.00	2100.00
	Total cost of Labour			Rs:	<b>3750.00</b>
	labour component/unit qty			375.00	
	Add contractor's profit and overhead charges			13.615% <u>51.10</u>	
	labour component/unit qty (including contractor's profit)			<u>426.10</u>	

**ABSTRACT:**

A. Cost of Materials	Rs:	3438.65
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	3750.00
	Total	7188.65
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	978.73
Total cost for	10.00 Joints	Rs: <b>8167.38</b>
Rate per joint	(A+B+C+D)/10.0	Rs. <b>816.70</b>

Note:

- (1) For NP3 Class - 10% extra over the rates of NP2 Class  
(2) For NP4 Class - 20% extra over the rates of NP2 Class

IRR-CCDW-6-9 Laying and **jointing 1200 mm dia. NP- 2 class or IRC standard hume pipes in CM 1 : 2 proportion by volume including cost of all materials ( excluding pipes and collars ), machinery, labour, aligning, packing joints with hemp, finishing, curing etc., complete with initial lead upto 50 m and all lifts.**  
**(Cement content: 66.8 kg / joint, FA : 0.069cum/joint, Hemp Yarn : 0.453kg/joint)**

DATA:

**RATE ANALYSIS**UNIT : **10.00 Joints****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement	kg	668.00	5.35	3573.80
2	Sand (Screened)	cum	0.69	165.00	113.85
3	Hemp yarn	kg	4.53	72.00	326.16
	Total cost of Materials			Rs:	<b>4013.81</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill ( Manual mixing )		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	4.00	400.00	1600.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	7.00	350.00	2450.00
	Total cost of Labour			Rs:	<b>4500.00</b>
	labour component/unit qty			450.00	
	Add contractor's profit and overhead charges			13.615% <u>61.30</u>	
	labour component/unit qty (including contractor's profit)			<u>511.30</u>	

**ABSTRACT:**

A. Cost of Materials	Rs:	4013.81
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	4500.00
	Total	8513.81
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	1159.16

Total cost for <b>Rate per joint</b>	10.00 Joints (A+B+C+D)/10.0	Rs: Rs.	<b>9672.97</b> <b>967.30</b>
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Note: (1) For NP3 Class - 10% extra over the rates of NP2 Class  
(2) For NP4 Class - 20% extra over the rates of NP2 Class

#### IRR-CCDW-7 BACK FILLING & OTHER WORKS :

- IRR-CCDW-7-1 **Providing rubble / boulder and sand filling behind abutment and return walls** in layers including cost of all materials, machinery, labour, watering, ramming etc., complete with initial lead upto 50 m and initial lift upto 3 m.

DATA:

**RATE ANALYSIS**UNIT : **10.00 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rubble / Boulder	cum	10.00	318.00	3180.00
2	Sand for filling	cum	4.00	95.00	380.00
Total cost of Materials				Rs:	<b>3560.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill ( Manual mixing )		0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.50	450.00	225.00
2	Mason Cl II	Day	1.00	400.00	400.00
3	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>2025.00</b>

labour component/unit qty 202.50

Add contractor's profit and overhead charges 13.615% 27.60labour component/unit qty (including contractor's profit) 230.10**ABSTRACT:**

A. Cost of Materials	Rs: 3560.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2025.00
	Total Rs: 5585.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 760.4
Total cost for	10.00 cum Rs: 6345.4
<b>Rate per cum</b>	(A+B+C+D)/10.0 Rs: <b>634.50</b>

- IRR-CCDW-7-2 **Providing and filling murrum / gravelly soil ( CNS soil ) for foundation or around pipes** including breaking clods, spreading in layers of 10 to 15 cm, watering, compaction by earth masters to achieve density control of not less than 95 percent etc., complete with lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS**UNIT : **10.00 cum****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Murum	cum	12.00	165.00	1980.00
Total cost of Materials				Rs:	<b>1980.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Nill		0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cartman with double bullock cart	Day	0.50	465.00	232.50
2	work inspector	Day	0.50	450.00	225.00
3	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour				Rs:	<b>2557.50</b>

labour component/unit qty 255.80  
 Add contractor's profit and overhead charges 13.615% 34.80  
 labour component/unit qty (including contractor's profit) **290.60**

**ABSTRACT:**

A. Cost of Materials	Rs: 1980.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2557.50
Total	Rs: 4537.50
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 617.78
Total cost for	10.00 cum Rs: 5155.28
<b>Rate per cum</b>	(A+B+C+D)/10.0 Rs. 515.50

- IRR-CCDW-7-3 Providing and **filling murum / gravelly soil ( CNS soil ) for foundation or above pipes**  
 including breaking clods, spreading in **layers of 10 to 15 cm**, watering, compaction by power roller to achieve density control of **not less than 98 percent** etc., complete with lead upto **50 m and all lifts.**

DATA:

**RATE ANALYSIS**UNIT : **10.00 cum****A. MATERIALS:**

Sl No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Murum	cum	12.00	165.00	1980.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>1980.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Diesel road roller 8-10 tonne	Hour	0.17	197.20	33.65
	Fuel / Energy charges	Hour	0.17	714.00	121.84
Total hire charges of Machinery				Rs:	<b>155.49</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Operator road roller	Hour	0.17	210.90	35.99
2	Cartman with double bullock cart	Day	0.50	465.00	232.50
3	work inspector	Day	0.50	450.00	225.00
4	mazdoor	Day	1.50	350.00	525.00
Total cost of Labour				Rs:	<b>1018.49</b>

labour component/unit qty 101.80  
 Add contractor's profit and overhead charges 13.615% 13.90  
 labour component/unit qty (including contractor's profit) **115.70**

**ABSTRACT:**

A. Cost of Materials	Rs: 1980.00
B. Hire charges of Machinery	Rs: 155.49
C. Cost of Labour	Rs: 1018.49
Total	Rs: 3153.98
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 429.42
Total cost for	10.00 cum Rs: 3583.40
<b>Rate per cum</b>	(A+B+C+D)/10.0 Rs. 358.30

- IRR-CCDW-7-4 Providing and **fixing one line dressed 111x35x25 cm thick IRC standard kilometre stone in cement concrete M-10 grade with 40 mm down size aggregates including excavating pit of size 70x45x40 cm, embedding the stone by 30 cm in concrete, providing 2 coats synthetic enamel paint of approved quality and colour to exposed surfaces and lettering as directed, cost of all materials, labour, finishing, curing etc., complete with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT : 4 Nos.

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	One line dressed Km stone	No.	4.00	480.00	1920.00
2	40-20 mm coarse aggregate	cum	0.20	1175.00	235.00
3	20-10 mm coarse aggregate	cum	0.15	1225.00	183.75
4	10-4.75 mm coarse aggregate	cum	0.10	900.00	90.00
5	Sand (Un-Screened)	cum	0.20	95.00	19.00
6	Cement	kg	100.00	5.35	535.00
7	Synthetic enamel paint I st quality	ltr	1.00	260.00	260.00
8	Sundries ( brush / oil etc )	LS	4.00	30.00	120.00
Total cost of Materials				Rs:	<b>3362.75</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL ( Manual mixing )		0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mason Cl- II	Day	1.00	400.00	400.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	1.00	350.00	350.00
4	Painter Cl- I	Day	1.00	510.00	510.00
Total cost of Labour				Rs:	<b>1710.00</b>

labour component/unit qty 427.50

Add contractor's profit and overhead charges 13.615% 58.20

labour component/unit qty (including contractor's profit) **485.70****ABSTRACT:**

A. Cost of Materials	Rs: 3362.75
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1710.00
Total	Rs: 5072.75
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 690.65
Total cost for	4.00 Nos. Rs: 5763.4
Rate per No.	(A+B+C+D)/4.0 Rs: 1440.90

IRR-CCDW-7-5 Providing and fixing one line dressed 65x15x10 cm thick IRC standard hectometre stone in cement concrete M-10 grade with 40 mm down size aggregates including excavating pit of size 50x45x40 cm, embedding the stone by 30 cm in concrete, providing 2 coats synthetic enamel paint of approved quality and colour to exposed surfaces and lettering as directed, cost of all materials, labour, finishing, curing etc., complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS**

UNIT : 4 Nos.

**A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	One line dressed hectometre stone	No.	4.00	260.00	1040.00
2	40-20 mm coarse aggregate	cum	0.20	1175.00	235.00
3	20-10 mm coarse aggregate	cum	0.15	1225.00	183.75
4	10-4.75 mm coarse aggregate	cum	0.10	900.00	90.00
5	Sand (Un-Screened)	cum	0.20	95.00	19.00
6	Cement	kg	100.00	5.35	535.00
7	Synthetic enamel paint I st quality	ltr	0.40	260.00	104.00
8	Sundries ( brush / oil etc )	LS	1.00	30.00	30.00
Total cost of Materials				Rs:	<b>2236.75</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL ( Manual mixing )		0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate	Amount
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				in Rs.	in Rs.
1	Mason Cl- II	Day	1.00	400.00	400.00
2	work inspector	Day	1.00	450.00	450.00
3	mazdoor	Day	1.00	350.00	350.00
4	Painter Cl- I	Day	0.50	510.00	255.00
Total cost of Labour				Rs:	<b>1455.00</b>
labour component/unit qty				363.80	
Add contractor's profit and overhead charges				13.615% 49.50	
labour component/unit qty (including contractor's profit)				<b>413.30</b>	
<b>ABSTRACT:</b>					
A. Cost of Materials				Rs:	2236.75
B. Hire charges of Machinery				Rs:	0.00
C. Cost of Labour				Rs:	<b>1455.00</b>
			Total	Rs:	<b>3691.75</b>
D. Add for contractor's profit and overheads on (A+B+C)			13.615% Rs:		502.63
Total cost for		4.00 Nos.	Rs:		<b>4194.38</b>
Rate per No.		(A+B+C+D)/4.0	Rs.		<b>1048.60</b>

**CHAPTER-V**  
**HYDRAULIC GATES AND ALLIED EQUIPMENT - Standard Data**

(WLL BE WITH E-N-C & TO INCORPORATE CHANGES YEARLY/ AS NEEDED)

FOR THE YEAR : 2016-17

IRR-GAW

**GATE HOIST AND ALLIED WORKS - DATA RATES**

- 1 All materials / bought out components for embedded parts, gates, hoists and allied works shall conform to relevant Indian standards / technical specifications and approved drawings.
- 2 The basic rates are EXCLUSIVE of preparation of designs / drawings / material schedules etc., as per specifications and other technical data including revisions.  
If designs & drawings are to be done by private agency 2% of estimated cost be added
- 3 The basic rates are inclusive of cost of all materials, machinery, labour, fabrication, erection, commissioning and testing of gates, hoists and other related components as per technical specifications.
- 4 The basic rates are inclusive of finishing, wastage of materials , incidental works, temporary supports, all enabling works, profit, overheads, small tools / plants, hidden cost on labour etc.
- 5 The basic rates are inclusive of taxes, duties (excise ), levies and all other incidental charges including turn over tax/sales tax on works contract. Separate provision shall be made in the estimate towards such tax on works contract at the rate prevailing at the time of preparation of estimate.
- 6 The basic rates are inclusive of all leads and lifts including rehandling.
- 7 no provision is made for stitch welding and it is part of welding work
- 8 The basic rates are inclusive of preparatory works such as rectification of damages, repairing shop painting, cleaning, positioning and anchoring first stage embedments,
- 9 The basic rates are not inclusive of painting with or without sand blasting, and are to be added to the rate as per schedule rates formulated in the same chapter as per applicability and specifications
- 10 The basic rates are exclusive of cost of river diversion arrangements, dewatering, desilting ,secondary concreting of EM parts etc., which form part of civil works.
- 11 DESIGNS AND DRAWING CHARGES AT 2% BE ADDED EXTRA TO THE ESTIMATES, IF CONTRACTOR'S SCOPE OF WORK INVOLVES DESIGNS COMPONENT ALSO
- 12 Add AREA ALLOWANCES AS APPLICABLE ON LABOUR COMPONENT ONLY ( SHOWN UNDER EACH ITEM)
- 13 Add contractors profit and overheads at 14% to all items
- 14 Painting Charges added extra to the data items as per applicability wherever necessary
- 15 HOIST EQUIPMENT1.-where sand blasting is not possible, hand and power tool cleaning be adopted - Guidance may be taken from Mechanical workshop in this regard  
2. Machined surfaces should not be painted  
3. for maintenance unless sand blasting is essential hand and power tool cleaning be adopted
- 16 Painting of Hoist Gates is to be done as per IS 14177:1994

**DATA and RATES ---GATE / HOIST AND ALLIED WORKS -**

(STORED WITH E-N-C & TO INCORPORATE CHANGES YEARLY/AS NEEDED)  
**GAW - Work Items**

**Index- code**

IRR-GAW

**TYPES OF GATES:**

IRR-GAW-1    **A. SPILLWAY RADIAL GATES**

IRR-GAW-1-1    **E.M Parts and anchorages**

fabrication, supply, erection, testing and **commissioning of Embedded parts for radial gate**  
consists of sill beam, wall plates, anchor girders , yoke girders, tie flats, trunnion supports etc., including cost of all materials, machinery, labour, welding, finishing, with leads and lifts &all accessories  
**(without painting on sand-blasted or mechanical cleaning surfaces which are added extra)**

**as per schedule of rates under items in this chapter and add as applicable separately)**

Drawing no. MD/CDO/VRSP/90-92/85-86 (Vengalaraya Sagar - Gomukhi Project)

Vent Size:

12.00 X 6.6 Mtrs

DATA:

**RATE ANALYSIS**

**UNIT : 15.300 tonne**

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Str steel angle / beam / channel / bars	kg	3467.00	37.50	130012.50
2	Structural steel plate / flats	kg	11261.00	37.40	421161.40
3	Stainless steel plate / flats	kg	515.00	275.00	141625.00
4	MS bolts and nuts	kg	48.00	80.00	3840.00
5	Oxygen gas	cum	158.00	42.00	6636.00
6	Acetyline gas	cum	53.00	335.00	17755.00
7	Welding electrodes	Nos	11520.00	13.00	149760.00
8	Welding electrodes ( LH )	Nos	2880.00	15.00	43200.00
9	Welding electrodes ( stainless steel )	Nos	1160.00	23.00	26680.00
10	Use rate welding holder set	Hour	1945.00	7.80	15171.00
11	Use rate gas cutting torch set	Hour	158.00	24.17	3818.33
12	Sundries	LS	100.00	30.00	3000.00
Total cost of Materials				Rs:	<b>962659.23</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	1945.00	16.00	31120.00
	Fuel / Energy charges	Hour	1945.00	67.20	130704.00
	Tower crane/heavy duty tyre mounted crane	Hour	16.00	867.10	13873.60
2	Fuel / Energy charges	Hour	16.00	145.70	2331.20
3	Plate shearing machine	Hour	16.00	41.90	670.40
	Fuel / Energy charges	Hour	16.00	112.10	1793.60
4	Pug cutting machine	Hour	76.00	6.40	486.40
	Fuel / Energy charges	Hour	76.00	2.80	212.80
5	Mobile crane 16 Tonnes	Hour	22.00	2278.10	50118.20
	Fuel / Energy charges	Hour	22.00	75.00	1650.00
6	Stationery derrick crane	Hour	64.00	86.10	5510.40
	Fuel / Energy charges	Hour	64.00	0.00	0.00
7	Grinding machine	Hour	30.00	22.50	675.00
	Fuel / Energy charges	Hour	30.00	28.00	840.00
8	Drilling machines	Hour	30.00	22.50	675.00
	Fuel / Energy charges	Hour	30.00	28.00	840.00
9	Planing machine	Hour	100.00	117.80	11780.00
	Fuel / Energy charges	Hour	100.00	84.10	8410.00
10	Bending Machine	Hour	30.00	42.60	1278.00
	Fuel / Energy charges	Hour	30.00	84.10	2523.00
11	Sundries	LS	100.00	30.00	3000.00
Total hire charges of Machinery				Rs:	<b>268491.60</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Tower crane	Hour	16.00	189.30	3028.80
2	Crew for Mobile crane 16 T	Hour	22.00	526.70	11587.40
3	Crew for Shearing machine	Hour	16.00	142.00	2272.00
4	Crew for Planing machine	Hour	100.00	210.90	21090.00
5	Crew for Drilling machine	Hour	30.00	198.90	5967.00
6	Crew for Grinding machine	Hour	30.00	198.90	5967.00
7	Crew for Bending machine	Hour	30.00	131.80	3954.00
8	Foreman	Day	15.00	510.00	7650.00
9	Marker / Fabricator / Erector	Day	75.00	550.00	41250.00
10	Gas cutter	Day	20.00	445.00	8900.00
11	Welder ( General )	Day	212.00	445.00	94340.00
12	Welder ( X - ray )	Day	48.00	510.00	24480.00
13	Khalasi	Day	345.00	445.00	153525.00
14	Helper fabrication / erection	Day	255.00	400.00	102000.00
15	Electrician	Day	5.00	515.00	2575.00
Total cost of Labour				Rs:	<b>488586.20</b>

Add towards highly skilled labour charges @ 30% on total cost of labour  
 Total Cost of Labour

**146575.86**  
**635162.06**

labour component/unit qty	41513.90
Add contractor's profit and overhead charges	13.615% <u>5652.10</u>
labour component/unit qty (including contractor's profit)	<b>47166.00</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 962659.23
B. Hire charges of Machinery	Rs: 268491.60
C. Cost of Labour	Rs: 635162.06
D. Add for excise duty	Total Rs: 1866312.89
(on 75 percent cost excluding cost of materials)	0.00%
E. Add for transportation upto work site @	Total Rs: 1866312.89
F. Add for contractor's profit and overheads on	3% Rs: 55989.39
(A+B+C+D+E)	13.615% Rs: 1922302.28
Add 2 leads	
Add 1 km lead charges for fabricated parts	I 19.00 per tonne 581.4
Unloading charges of fabricated parts Rs	74.80 per tonne 2288.88
Total cost for	15.300 tonne Rs: 2186894.02
	Rate per tonne Rs: 142934.20

**RADIAL GATES****A-2 Gates**

IRR-GAW-1-2 fabrication, supply, erection, testing and **commissioning of radial gate** consisting of skin plate, stiffeners, horizontal girders, radial arms, trunnion assemblies, tie beam, pulley supports, bracings, rubber seals, clamps etc., with all accessories for **spillway/canals** including cost of all materials, machinery, labour, seal fixing etc., complete as per specifications and approved drawings

**(without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)**

Drawing no. MD/CDO/VRSP/170-172/85-86(Vengalaraya Sagar - Gomukhi Project)

Vent Size: 12 X 6.6 Mtr

DATA:

**RATE ANALYSIS**

UNIT : **29.000** tonne

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel : Angles / beams / channels / bars	kg	9700.00	37.50	363750.00
	Plates / flats	kg	16850.00	37.40	630190.00
2	Cast steel components : Trunnion hubs / Guide rollers	kg	2100.00	190.00	399000.00
3	Alluminium / Bronze alloy components : Bush for Trunnion / Guide roller	kg	350.00	970.00	339500.00
4	Bolt / Nut / Washer : GI bolts / nuts / washers	kg	250.00	140.00	35000.00
5	Zinc/Babbit Metal	kg	50.00	178.00	8900.00
6	Rubber seals : Bottom seal	Rm	12.00	780.00	9360.00
	Side seals ( Z - type )	Rm	14.00	1600.00	22400.00
7	Oxygen gas	cum	228.00	42.00	9576.00
8	Acetyline gas	cum	76.00	335.00	25460.00
9	Welding electrodes ( std )	Nos	1000.00	13.00	13000.00
10	Welding electrodes ( LH )	Nos	250.00	15.00	3750.00
11	Use rate welding holder set	Hour	156.00	7.80	1216.80
12	Use rate gas cutting torch set	Hour	228.00	24.17	5510.00
13	Sundries	LS	500.00	30.00	15000.00
Total cost of Materials				Rs:	<b>1881612.80</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer Fuel / Energy charges	Hour	156.00	16.00	2496.00
		Hour	156.00	67.20	10483.20

2	Plate shearing machine	Hour	29.00	41.90	1215.10
3	Fuel / Energy charges	Hour	29.00	112.10	3250.90
3	Pug cutting machine	Hour	114.00	6.40	729.60
4	Fuel / Energy charges	Hour	114.00	2.80	319.20
4	Bending machine	Hour	116.00	42.60	4941.60
5	Fuel / Energy charges	Hour	116.00	84.10	9755.60
5	Tower crane 5 t capacity	Hour	29.00	867.10	25145.90
6	Fuel / Energy charges	Hour	29.00	145.70	4225.30
6	Mobile derrick crane	Hour	58.00	519.70	30142.60
7	Fuel / Energy charges	Hour	58.00	299.90	17394.20
7	Stationery derrick crane	Hour	58.00	86.10	4993.80
8	Fuel / Energy charges	Hour	58.00	0.00	0.00
8	Grinding machine	Hour	58.00	22.50	1305.00
9	Fuel / Energy charges	Hour	58.00	28.00	1624.00
9	Drilling machines	Hour	58.00	22.50	1305.00
10	Fuel / Energy charges	Hour	58.00	28.00	1624.00
10	Mobile Crane 30 T	Hour	100.00	3096.80	309680.00
11	Fuel / Energy charges	Hour	100.00	118.80	11880.00
11	Sundries	LS	500.00	30.00	15000.00
Total hire charges of Machinery				Rs:	457511.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane 30T	Hour	100.00	526.70	52670.00
2	Crew for Tower crane	Hour	29.00	189.30	5489.70
3	Crew for Bending machine	Hour	116.00	131.80	15288.80
4	Crew for Drilling machine	Hour	58.00	198.90	11536.20
5	Crew for Grinding machine	Hour	58.00	198.90	11536.20
6	Foreman	Day	29.00	510.00	14790.00
7	Marker / Fabricator / Erector	Day	145.00	550.00	79750.00
8	Gas cutter	Day	29.00	445.00	12905.00
9	Welder ( General )	Day	17.00	445.00	7565.00
10	Welder ( X - ray )	Day	5.00	510.00	2550.00
11	Khalasi	Day	493.00	445.00	219385.00
12	Helper fabrication / erection	Day	667.00	400.00	266800.00
13	Electrician	Day	15.00	515.00	7725.00
Total cost of Labour				Rs:	707990.90

Add towards highly skilled labour charges @ 30% on total cost of labour 212397.27  
 Total Cost of Labour 920388.17

labour component/unit qty	31737.50
Add contractor's profit and overhead charges	13.615% <u>4321.10</u>
labour component/unit qty (including contractor's profit)	<u>36058.60</u>

**ABSTRACT:**

A. Cost of Materials	Rs: 1881612.80
B. Hire charges of Machinery	Rs: 457511.00
C. Cost of Labour	Rs: 920388.17
D. Add for excise duty	Total 0.00%
(on 75 percent cost excluding cost of materials)	Total
E. Add for transportation upto work site @	3%
F. Add for contractor's profit and overheads on (A+B+C+D+E)	Total 13.615%
Add 2 leads	Rs: 457096.03
Add 1 km lead charges for fabricated parts	I 19.00 per tonne
Unloading charges of fabricated parts	Rs: 74.80 per tonne
Total cost for	29.000 tonne
Rate per tonne	Rs: 3819833.76
	Rs. 131718.40

**IRR-GAW-1-3 RADIAL GATES-ROPE DRUM HOISTS WITH HOIST BRIDGES**

fabrication, supply, erection, testing and **commissioning of electrically operated rope drum hoist of adequate capacity** consisting of base frames, rope drums, connecting shaft, gear system, brake system, electric motor, wire ropes, gate position indicator, manual operation arrangement etc., with all accessories for spillway radial gate including cost of all materials, machinery, labour, greasing, providing hand railing and approach staircase with gate to hoist platform, complete as per specifications and approved drawings

(without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)

DATA:

RATE ANALYSIS			UNIT :	15.440 tonne wt 90.00 t capacity	
SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel Angles / beams / channels / bars Plates / flats	kg	2571.00 3632.00	37.50 37.40	96412.50 135836.80
2	Cast steel components : Rope drums 2 Nos / Gears 4 Nos Pinions Pulleys 720 PCD 6 Nos Plummer blocks / Hubs	kg	3680.00 218.00 1080.00 322.00	235.00 225.00 190.00 190.00	864800.00 49050.00 205200.00 61180.00
3	Alloy steel components Shafts Pins	kg	557.00 546.00	235.00 450.00	130895.00 245700.00
4	Bronze alloy components : Bronze bearings / bush Wire rope 36 mm dia 6/37	kg	144.00	970.00	139680.00
5	construction	kg	448.00	200.00	89600.00
6	MS Bolt / Nut / Washer	kg	85.00	80.00	6800.00
7	Worm reducers	No.	1.00	224400.00	224400.00
8	Electric motor 20 hp	No.	1.00	121000.00	121000.00
9	Floating shaft 300 mm dia	kg	1000.00	180.00	180000.00
10	Manual operating system	No.	1.00	28820.00	28820.00
11	Gate position indicator	No.	1.00	195800.00	195800.00
12	Ele-magnetic brake	No.	1.00	35200.00	35200.00
13	Electric cable / switch / control panel etc	LS	1.00	50380.00	50380.00
14	Oxygen gas	cum	213.00	42.00	8946.00
15	Acetyline gas	cum	71.00	335.00	23785.00
16	Welding electrodes	Nos	530.00	13.00	6890.00
17	Welding electrodes ( LH )	Nos	4776.00	15.00	71640.00
18	Grease	kg	50.00	275.00	13750.00
19	Use rate welding holder set	Hour	566.00	7.80	4414.80
20	Use rate gas cutting torch set	Hour	90.00	24.17	2175.00
21	Sundries ( hand rail /staircase / gate e	LS	200.00	30.00	6000.00
Total cost of Materials				Rs:	2998355.10

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer Fuel / Energy charges	Hour	566.00 353.00	16.00 67.20	9056.00 23721.60
2	Tower crane 5 t capacity Fuel / Energy charges	Hour	4.00 4.00	867.10 145.70	3468.40 582.80
3	Pug cutting machine Fuel / Energy charges	Hour	53.00 53.00	6.40 2.80	339.20 148.40
4	Mobile derrick crane Fuel / Energy charges	Hour	50.00 50.00	519.70 299.90	25985.00 14995.00
5	Grinding machine Fuel / Energy charges	Hour	8.00 8.00	22.50 28.00	180.00 224.00
6	Drilling machines Fuel / Energy charges	Hour	16.00 16.00	22.50 28.00	360.00 448.00
7	Sundries	LS	100.00	30.00	3000.00
Total hire charges of Machinery				Rs:	82508.40

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane	Hour	50.00	177.50	8875.00
2	Crew for Tower crane	Hour	4.00	189.30	757.20
3	Crew for Drilling machine	Hour	16.00	198.90	3182.40
4	Crew for Grinding machine	Hour	8.00	198.90	1591.20
5	Foreman	Day	35.00	510.00	17850.00
	Marker / Fabricator / Erector /				
6	Mechanic	Day	58.00	550.00	31900.00
7	Gas cutter	Day	18.00	445.00	8010.00

Gates and Allied Works - Item Unit Rates 2016-17					
8	Welder ( General )	Day	53.00	445.00	23585.00
9	Khalasi	Day	20.00	445.00	8900.00
10	Helper fabrication / erection	Day	175.00	400.00	70000.00
11	Electrician	Day	3.00	515.00	1545.00
Total cost of Labour				Rs:	176195.80

Add towards highly skilled labour charges @ 30% on total cost of labour  
Total Cost of Labour

labour component/unit qty	2545.10
Add contractor's profit and overhead charges	13.615% 346.50
labour component/unit qty (including contractor's profit)	<u><b>2891.60</b></u>

#### ABSTRACT:

A. Cost of Materials	Rs: 2998355.10
B. Hire charges of Machinery	Rs: 82508.40
C. Cost of Labour	Rs: 229054.54
D. Add for excise duty	Total 0.00%
(on 75 percent cost excluding cost of materials)	Total
E. Add for transportation upto work site @	3%
F. Add for contractor's profit and overheads on	Total
(A+B+C+D+E)	13.615%
Add 2 leads	Rs: 464164.70
Add 1 km lead charges for fabricated parts	I 19.00 per tonne
Unloading charges of fabricated parts	74.80 per tonne
Total cost for	15.440 tonne wt
Total cost for	90.00 t capacity
	Rate per tonne wt
	Rate per tonne capacity of hoist
	Rs: 3876276.83
	Rs: 251054.20
	<u><b>43069.70</b></u>

#### IRR-GAW-1-4 Walk way(cat walk)

fabrication, supply, erection and **commissioning of 1 metre wide walkway connecting spillway piers / abutments** at trunnion platform level including cost of all materials, machinery, labour, cutting, welding etc, complete as per specifications and approved drawings (**without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately**)

DATA:

#### RATE ANALYSIS

UNIT :

5.22 MT

#### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel				
	Angles / beams / channels / bars	kg	4258.00	37.50	159675.00
	Plates / flats	kg	98.00	37.40	3665.20
	Chequered plates	kg	856.00	63.00	53928.00
2	MS bolts / nuts / washers	kg	8.00	80.00	640.00
3	Oxygen gas	cum	51.00	42.00	2142.00
4	Acetyline gas	cum	17.00	335.00	5695.00
5	Welding electrodes	Nos	1195.00	13.00	15535.00
6	Use rate welding holder set	Hour	150.00	7.80	1170.00
7	Use rate gas cutting torch set	Hour	30.00	24.17	725.00
8	Sundries	LS	10.00	30.00	300.00
Total cost of Materials				Rs:	<b>243475.20</b>

#### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	150.00	16.00	2400.00
	Fuel / Energy charges	Hour	150.00	67.20	10080.00
2	Tower crane	Hour	6.00	867.10	5202.60
	Fuel / Energy charges	Hour	6.00	145.70	874.20
3	Pug cutting machine	Hour	12.00	6.40	76.80
	Fuel / Energy charges	Hour	12.00	2.80	33.60
4	Mobile CRANE 16T	Hour	8.00	2278.10	18224.80
	Fuel / Energy charges	Hour	8.00	75.00	600.00
5	Grinding machine	Hour	12.00	22.50	270.00
	Fuel / Energy charges	Hour	12.00	28.00	336.00

6	Drilling machines	Hour	12.00	22.50	270.00
	Fuel / Energy charges	Hour	12.00	28.00	336.00
7	Bending Machine	Hour	10.00	42.60	426.00
	Fuel / Energy charges	Hour	10.00	84.10	841.00
8	Sundries	LS	10.00	30.00	300.00
	Total hire charges of Machinery			Rs:	40271.00

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane 16T	Hour	10.00	526.70	5267.00
2	Crew for Tower crane	Hour	6.00	189.30	1135.80
3	Crew for Drilling machine	Hour	12.00	198.90	2386.80
4	Crew for Grinding machine	Hour	12.00	198.90	2386.80
5	Crew for Bending machine	Hour	10.00	131.80	1318.00
6	Foreman	Day	6.00	510.00	3060.00
7	Marker / Fabricator / Erector	Day	25.00	550.00	13750.00
8	Gas cutter	Day	5.00	445.00	2225.00
9	Welder ( General )	Day	20.00	445.00	8900.00
10	Helper fabrication / erection	Day	200.00	400.00	80000.00
11	Electrician	Day	2.00	515.00	1030.00
	Total cost of Labour			Rs:	121459.40

Add towards highly skilled labour charges @ 30% on total cost of labour **36437.82**  
 Total Cost of Labour **157897.22**

labour component/unit qty	30248.50
Add contractor's profit and overhead charges	13.615% 4118.30
labour component/unit qty (including contractor's profit)	<b>34366.80</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 243475.20
B. Hire charges of Machinery	Rs: 40271.00
C. Cost of Labour	Rs: 157897.22
D. Add for excise duty	Rs: 441643.42
(on 75 percent cost excluding cost of materials)	0.00%
E. Add for transportation upto work site @	Total 441643.42
F. Add for contractor's profit and overheads on (A+B+C+D+E)	3% 13249.30
Add 2 leads	Total 454892.72
Add 1 km lead charges for fabricated parts	Rs: 61933.64
Unloading charges of fabricated parts Rs	I 19.00 per tonne 198.36
Total cost for	74.80 per tonne 780.912
	5.22 MT Rs: 517805.64
	<b>Rate per MT</b> Rs: 99196.50

**IRR-GAW-2 VERTICAL LIFT GATES-EM PARTS**

IRR-GAW-2-1 Design, fabrication, supply, erection and **commissioning of embedded parts** consisting of sill beam, slide tracks, seal seats, guide rails, dogging sets for storage of stoplog elements etc., with all accessories for spillway stop log gates and other vertical lift elements including cost of all materials, machinery, labour, etc., complete as per specifications and approved drawings **(without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)**

Drawing No. MD/CDO/GNCP/HR/1759,1760/94 (GNSS Project)

Vent Size: 3.6 X 6.1 Mtr

DATA:

**RATE ANALYSIS**

UNIT :

**6.300** tonne

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Str steel angle / beam / channel / bars	kg	1885.00	37.50	70687.50
2	Structural steel plate / flats	kg	3890.00	37.40	145486.00
3	Stainless steel plate / flats	kg	271.00	275.00	74525.00
4	MS bolts and nuts	kg	50.00	80.00	4000.00
5	Oxygen gas	cum	225.00	42.00	9450.00
6	Acetyline gas	cum	75.00	335.00	25125.00
7	Welding electrodes	Nos	1410.00	13.00	18330.00
8	Welding electrodes ( LH )	Nos	350.00	15.00	5250.00
9	Welding electrodes ( stainless steel )	Nos	1320.00	23.00	30360.00

10	Use rate welding holder set	Hour	385.00	7.80	3003.00
11	Use rate gas cutting torch set	Hour	225.00	24.17	5437.50
12	Sundries	LS	40.00	30.00	1200.00
Total cost of Materials				Rs:	<b>392854.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	385.00	16.00	6160.00
	Fuel / Energy charges	Hour	385.00	67.20	25872.00
2	Plate shearing machine	Hour	8.00	41.90	335.20
	Fuel / Energy charges	Hour	8.00	112.10	896.80
3	Pug cutting machine	Hour	110.00	6.40	704.00
	Fuel / Energy charges	Hour	110.00	2.80	308.00
4	Planing machine	Hour	270.00	117.80	31806.00
	Fuel / Energy charges	Hour	270.00	84.10	22707.00
5	Mobile Crane 16 T	Hour	24.00	2278.10	54674.40
	Fuel / Energy charges	Hour	24.00	75.00	1800.00
6	Stationery derrick crane	Hour	14.00	86.10	1205.40
	Fuel / Energy charges	Hour	14.00	0.00	0.00
7	Grinding machine	Hour	14.00	22.50	315.00
	Fuel / Energy charges	Hour	14.00	28.00	392.00
8	Drilling machines	Hour	21.00	22.50	472.50
	Fuel / Energy charges	Hour	21.00	28.00	588.00
9	Bending Machine	Hour	14.00	42.60	596.40
	Fuel / Energy charges	Hour	14.00	84.10	1177.40
10	Sundries	LS	40.00	30.00	1200.00
Total hire charges of Machinery				Rs:	<b>151210.10</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane 16 T	Hour	24.00	526.70	12640.80
2	Crew for Planing machine	Hour	270.00	210.90	56943.00
3	Crew for Drilling machine	Hour	21.00	198.90	4176.90
4	Crew for Grinding machine	Hour	14.00	198.90	2784.60
5	Crew for Bending machine	Hour	14.00	131.80	1845.20
6	Foreman	Day	32.00	510.00	16320.00
7	Marker / Fabricator / Erector	Day	35.00	550.00	19250.00
8	Gas cutter	Day	9.00	445.00	4005.00
9	Welder ( General )	Day	46.00	445.00	20470.00
10	Welder ( X - ray )	Day	6.00	510.00	3060.00
11	Helper fabrication / erection	Day	240.00	400.00	96000.00
12	Electrician	Day	4.00	515.00	2060.00
Total cost of Labour				Rs:	<b>239555.50</b>

Add towards highly skilled labour charges @ 30% on total cost of labour

71866.65

Total Cost of Labour

311422.15

labour component/unit qty 49432.10

Add contractor's profit and overhead charges 13.615% 6730.20

labour component/unit qty (including contractor's profit) **56162.30****ABSTRACT:**

A. Cost of Materials	Rs:	392854.00
B. Hire charges of Machinery	Rs:	151210.10
C. Cost of Labour	Rs:	311422.15
D. Add for excise duty	Total	855486.25
(on 75 percent cost excluding cost of materials)	0.00%	0.00
E. Add for transportation upto work site @	Total	855486.25
	3%	25664.59
	Total	881150.84
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615%	119968.69
Add 2 leads		
Add 1 km lead charges for fabricated parts	I 19.00 per tonne	239.4
Unloading charges of fabricated parts	74.80 per tonne	942.48
Total cost for	6.30 tonne	1002301.40
	Rate per tonne	Rs: 159095.50

IRR-GAW-2-2 Design, fabrication, supply, erection, testing and **commissioning of vertical lift gates and stoplog gate elements**, consisting of skin plate, horizontal and vertical girders, stiffeners, lifting pins, bronze padded slide blocks/bearings, guide shoes, rubber seals, clamps etc., with all accessories including cost of all materials, machinery, labour, seal fixing etc., complete as per specifications and approved drawings **(without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)**

**Drawing NO. CE/CDO/CL3/MRP/783/2002 (Spillway Stop log gate Elements of Madduvalasa Project)**

Vent Size: 12.624 X 0.50 M 16 Elements

DATA:

**RATE ANALYSIS**

UNIT : **119.000** tonne

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel Angles / beams / channels / bars Plates / flats	kg	5280.00 112880.00	37.50 37.40	198000.00 4221712.00
2	Alloy steel components Lifting pins	kg	520.00	450.00	234000.00
3	Bolt / Nut / Washer GI bolts / nuts / washers	kg	600.00	140.00	84000.00
4	Rubber seals Bottom seal Side seals	Rm	210.00 18.00	780.00 1210.00	163800.00 21780.00
5	Oxygen gas	cum	2714.00	42.00	113988.00
6	Acetyline gas	cum	905.00	335.00	303175.00
7	Welding electrodes	Nos	86554.00	13.00	1125202.00
8	Welding electrodes ( LH )	Nos	16486.00	15.00	247290.00
9	Use rate welding holder set	Hour	12880.00	7.80	100464.00
10	Use rate gas cutting torch set	Hour	2714.00	24.17	65588.33
11	Sundries	LS	400.00	30.00	12000.00
Total cost of Materials					Rs: <b>6890999.33</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer Fuel / Energy charges	Hour	12880.00 12880.00	16.00 67.20	206080.00 865536.00
2	Pug cutting machine Fuel / Energy charges	Hour	6440.00 6440.00	6.40 2.80	41216.00 18032.00
3	Mobile crane 16 T Fuel / Energy charges	Hour	360.00 360.00	2278.10 75.00	820116.00 27000.00
4	Stationery derrick crane Fuel / Energy charges	Hour	238.00 238.00	86.10 0.00	20491.80 0.00
5	Grinding machine Fuel / Energy charges	Hour	238.00 238.00	22.50 28.00	5355.00 6664.00
6	Drilling machines Fuel / Energy charges	Hour	357.00 357.00	22.50 28.00	8032.50 9996.00
7	Bending Machine Fuel / Energy charges	Hour	240.00 240.00	42.60 84.10	10224.00 20184.00
8	Sundries	LS	180.00	30.00	5400.00
Total hire charges of Machinery					Rs: <b>2064327.30</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane 16T	Hour	360.00	526.70	189612.00
2	Crew for Drilling machine	Hour	357.00	198.90	71007.30
3	Crew for Grinding machine	Hour	238.00	198.90	47338.20
4	Crew for Bending machine	Hour	240.00	131.80	31632.00
5	Foreman	Day	120.00	510.00	61200.00
6	Marker / Fabricator / Erector	Day	195.00	550.00	107250.00
7	Gas cutter	Day	100.00	445.00	44500.00
8	Welder ( General )	Day	1442.00	445.00	641690.00
9	Welder ( X - ray )	Day	275.00	510.00	140250.00
10	Khalasi	Day	2023.00	445.00	900235.00
11	Helper fabrication / erection	Day	2727.00	400.00	1090800.00
12	Electrician	Day	10.00	515.00	5150.00
Total cost of Labour					Rs: <b>3330664.50</b>

Add towards highly skilled labour charges @ 30% on total cost of labour  
 Total Cost of Labour

**999199.35**  
**4329863.55**

labour component/unit qty	36385.40
Add contractor's profit and overhead charges	13.615% 4953.90
labour component/unit qty (including contractor's profit)	<b>41339.30</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 6890999.33
B. Hire charges of Machinery	Rs: 2064327.30
C. Cost of Labour	Rs: 4329863.85
D. Add for excise duty (on 75 percent cost excluding cost of materials)	Total Rs: 13285190.48 0.00%
E. Add for transportation upto work site @	Total Rs: 13285190.48 3% Rs: 398555.71
F. Add for contractor's profit and overheads on (A+B+C+D+E)	Total Rs: 13683746.20 13.615% Rs: 1863042.04
Add 2 leads	
Add 1 km lead charges for fabricated parts	I 19.00 per tonne 4522.00
Unloading charges of fabricated parts Rs	74.80 per tonne 17802.4
Total cost for	119.00 tonne Rs: 15569112.64
	<b>Rate per tonne</b> Rs: <b>130832.90</b>

**STOP LOGS-automatic lifting beam**

IRR-GAW-2-3 fabrication, supply, erection, testing and **commissioning of automatic lifting beam**  
**with all accessories for handling**, lowering and lifting of spillway stop log gate elements  
 including cost of all materials, machinery, labour, cutting, aligning, welding, finishing,  
 etc., complete as per specifications and drawings with all leads and lifts.  
 (without painting on sand-blasted or mechanical cleaning surfaces which are added extra  
 as per schedule of rates under items in this chapter and add as applicable separately)

DATA:

**RATE ANALYSIS**UNIT : **3.528 tonne****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel Angles / beams / channels / bars	kg	13.00	37.50	487.50
	Plates / flats	kg	3389.00	37.40	126748.60
2	Alloy steel components Lifting pins	kg	101.00	450.00	45450.00
3	Bronze alloy components : Bronze bush	kg	5.00	970.00	4850.00
4	Forged steel components : Lifting hooks	kg	103.00	280.00	28840.00
5	MS pipe 100 mm dia	kg	11.00	175.00	1925.00
6	Bolt / Nut / Washer MS bolts / nuts / washers	kg	3.00	80.00	240.00
7	Oxygen gas	cum	126.00	42.00	5292.00
8	Acetyline gas	cum	42.00	335.00	14070.00
9	Welding electrodes	Nos	175.00	13.00	2275.00
10	Welding electrodes ( LH )	Nos	1575.00	15.00	23625.00
11	Use rate welding holder set	Hour	187.00	7.80	1458.60
12	Use rate gas cutting torch set	Hour	24.00	24.17	580.00
13	Sundries	LS	25.00	30.00	750.00
Total cost of Materials				Rs:	<b>256591.70</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer Fuel / Energy charges	Hour	187.00	16.00	2992.00
2	Pug cutting machine Fuel / Energy charges	Hour	117.00	67.20	7862.40
3	Mobile derrick crane Fuel / Energy charges	Hour	60.00	6.40	384.00
4	Stationery derrick crane Fuel / Energy charges	Hour	60.00	2.80	168.00
5	Grinding machine	Hour	4.00	519.70	2078.80
		Hour	4.00	299.90	1199.60
		Hour	8.00	86.10	688.80
		Hour	8.00	0.00	0.00
		Hour	2.00	22.50	45.00

	Fuel / Energy charges	Hour	2.00	28.00	56.00
6	Drilling machines	Hour	2.00	22.50	45.00
	Fuel / Energy charges	Hour	2.00	28.00	56.00
7	Sundries	LS	10.00	30.00	300.00
	Total hire charges of Machinery			Rs:	<b>15875.60</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane	Hour	4.00	177.50	710.00
2	Crew for Drilling machine	Hour	2.00	198.90	397.80
3	Crew for Grinding machine	Hour	2.00	198.90	397.80
4	Foreman	Day	10.00	510.00	5100.00
5	Marker / Fabricator / Erector	Day	18.00	550.00	9900.00
6	Gas cutter	Day	10.00	445.00	4450.00
7	Welder ( General )	Day	18.00	445.00	8010.00
8	Helper fabrication / erection	Day	52.00	400.00	20800.00
9	Electrician	Day	1.00	515.00	515.00
	Total cost of Labour			Rs:	<b>50280.60</b>

Add towards highly skilled labour charges @ 30% on total cost of labour

15084.18

Total Cost of Labour

65364.78

labour component/unit qty 18527.40

Add contractor's profit and overhead charges 13.615% 2522.50

labour component/unit qty (including contractor's profit) **21049.90****ABSTRACT:**

A. Cost of Materials	Rs: 256591.70
B. Hire charges of Machinery	Rs: 15875.60
C. Cost of Labour	Rs: 65364.78
D. Add for excise duty	Total 0.00%
(on 75 percent cost excluding cost of materials)	Total
E. Add for transportation upto work site @	3%
	Total
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615%
Add 2 leads	Rs: 47375.71
Add 1 km lead charges for fabricated parts	I 19.00 per tonne 134.064
Unloading charges of fabricated parts Rs	74.80 per tonne 527.788
Total cost for	3.528 tonne Rs: 396004.61
	Rate per tonne Rs: 112246.20

**MOVING GANTRY CRANE-CLASS II**

IRR-GAW-2-4

fabrication, supply, erection, testing and **commissioning of adequate capacity Class- II type moving gantry crane** consisting of rail mounted gantry frame, top platform with hand railing, long / cross travel arrangements, rope drums, gear systems, electric motors, electro-magnetic brake system, cabin, control panel, wire rope, ladder, motorised cable reeling drum etc., with all accessories for operating spillway stop log gate elements and river sluice / canal sluice emergency gates including cost of all materials, machinery, labour, etc., complete **with all leads and lifts**.

(without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)

DATA:

RATE ANALYSIS			UNIT :	30.856 tonne 25 t capacity				
A. MATERIALS:			SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel							
	Angles / beams / channels / bars	kg	1743.00	37.50	65362.50			
	Plates / flats	kg	19700.00	37.40	736780.00			
	Chequered plates	kg	820.00	63.00	51660.00			
2	Cast steel components :							
	Rope drums 2 Nos/Gears	kg	1320.00	235.00	310200.00			
	pinions	kg	1165.00	225.00	262125.00			
	Wheels / Pulleys	kg	2255.00	190.00	428450.00			
	Plummer blocks / Couplings	kg	817.00	190.00	155230.00			
3	Forged steel components							

	Hook / Shackle	kg	127.00	280.00	35560.00
4	Alloy steel components				
	Shafts	kg	556.00	235.00	130660.00
	Pins	kg	524.00	450.00	235800.00
5	Bronze alloy components :				
	Bronze bearings / bush	kg	181.00	970.00	175570.00
6	Wire rope 28 mm dia 6/37 construction	kg	406.00	200.00	81200.00
7	MS Bolt / Nut / Washer	kg	63.00	80.00	5040.00
8	MS pipe 32 mm dia for railing	Rm	50.00	185.00	9250.00
9	Worm reducers	Nos.	4.00	224400.00	897600.00
10	Electric motor 17.5 hp	No.	1.00	85800.00	85800.00
	Electric motor 5 hp	Nos.	2.00	33000.00	66000.00
	Electric motor 3 hp	No.	1.00	23100.00	23100.00
11	Ele-magnetic / Thruster brakes	Nos.	4.00	35200.00	140800.00
	Electric cable / switch / control panel etc	LS	3.00	50380.00	151140.00
13	Oxygen gas	cum	579.00	42.00	24318.00
14	Acetyline gas	cum	193.00	335.00	64655.00
15	Welding electrodes	Nos	1123.00	13.00	14599.00
16	Welding electrodes ( LH )	Nos	10110.00	15.00	151650.00
17	Grease	kg	50.00	275.00	13750.00
18	Use rate welding holder set	Hour	1197.00	7.80	9336.60
19	Use rate gas cutting torch set	Hour	150.00	24.17	3625.00
20	Sundries	LS	200.00	30.00	6000.00
Total cost of Materials					Rs: <b>4335261.10</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	1197.00	16.00	19152.00
	Fuel / Energy charges	Hour	748.00	67.20	50265.60
2	Tower crane 5 t capacity	Hour	6.00	867.10	5202.60
	Fuel / Energy charges	Hour	6.00	145.70	874.20
3	Pug cutting machine	Hour	235.00	6.40	1504.00
	Fuel / Energy charges	Hour	235.00	2.80	658.00
4	Mobile derrick crane	Hour	100.00	519.70	51970.00
	Fuel / Energy charges	Hour	100.00	299.90	29990.00
5	Grinding machine	Hour	32.00	22.50	720.00
	Fuel / Energy charges	Hour	32.00	28.00	896.00
6	Drilling machines	Hour	16.00	22.50	360.00
	Fuel / Energy charges	Hour	16.00	28.00	448.00
7	Sundries	LS	500.00	30.00	15000.00
Total hire charges of Machinery					Rs: <b>177040.40</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane	Hour	100.00	177.50	17750.00
2	Crew for Tower crane	Hour	6.00	189.30	1135.80
3	Crew for Drilling machine	Hour	16.00	198.90	3182.40
4	Crew for Grinding machine	Hour	32.00	198.90	6364.80
5	Foreman	Day	74.00	510.00	37740.00
6	Marker / Fabricator / Erector	Day	124.00	550.00	68200.00
7	Gas cutter	Day	48.00	445.00	21360.00
8	Welder ( General )	Day	112.00	445.00	49840.00
9	Khalasi	Day	20.00	445.00	8900.00
10	Helper fabrication / erection	Day	350.00	400.00	140000.00
11	Electrician	Day	10.00	515.00	5150.00
Total cost of Labour					Rs: <b>359623.00</b>

Add towards highly skilled labour charges @ 30% on total cost of labour  
Total Cost of Labour

labour component/unit qty	18700.40
Add contractor's profit and overhead charges	13.615% 2546.10
labour component/unit qty (including contractor's profit)	<b>21246.50</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 4335261.10
B. Hire charges of Machinery	Rs: 177040.40
C. Cost of Labour	Rs: 467509.90
	Total
	Rs: 4979811.40

			Gates and Allied Works - Item Unit Rates 2016-17
D. Add for excise duty (on 75 percent cost excluding cost of materials)	0.00%		Rs: 0.00
E. Add for transportation upto work site @	Total 3%		Rs: 4979811.40
	Total		Rs: 149394.34
			Rs: 5129205.74
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615%		Rs: 698341.36
Add 2 leads			
Add 1 km lead charges for fabricated parts	I 19.00 per tonne		1172.528
Unloading charges of fabricated parts Rs	74.80 per tonne		4616.058
Total cost for	30.856 tonne 25.000 t capacity		Rs: 5833335.69
	Rate per tonne		Rs: 189050.30
	<b>Rate per tonne capa</b>		<b>Rs: 233333.40</b>

#### RAIL TRACK FOR GANTRY CRANE

IRR-GAW-2-5 Design, fabrication, supply, erection and **commissioning of rail track using 45 kg / m standard rails on spillway bridge for movement of gantry crane** for handling and operating spillway stoplog gate elements / river sluice / canal sluice emergency gate including cost of all materials, machinery, labour, complete as per specifications (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)

DATA:

#### RATE ANALYSIS

UNIT : **200.000** Rm

#### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Str steel angle / beam / channel / bars	kg	1570.00	37.50	58875.00
2	Structural steel plate / flats	kg	975.00	37.40	36465.00
3	Rails	kg	18450.00	51.50	950175.00
4	MS bolts and nuts	kg	246.00	80.00	19680.00
5	Oxygen gas	cum	201.00	42.00	8442.00
6	Acetyline gas	cum	67.00	335.00	22445.00
7	Welding electrodes	Nos	1805.00	13.00	23465.00
8	Use rate welding holder set	Hour	193.00	7.80	1505.40
9	Use rate gas cutting torch set	Hour	133.00	24.17	3214.17
10	Sundries	LS	10.00	30.00	300.00
Total cost of Materials				Rs:	<b>1124566.57</b>

#### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	193.00	16.00	3088.00
	Fuel / Energy charges	Hour	121.00	67.20	8131.20
2	Mobile derrick crane	Hour	4.00	519.70	2078.80
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
3	Grinding machine	Hour	8.00	22.50	180.00
	Fuel / Energy charges	Hour	8.00	28.00	224.00
4	Drilling machines	Hour	50.00	22.50	1125.00
	Fuel / Energy charges	Hour	50.00	28.00	1400.00
5	Sundries	LS	10.00	30.00	300.00
Total hire charges of Machinery				Rs:	<b>17726.60</b>

#### C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane	Hour	4.00	177.50	710.00
2	Crew for Drilling machine	Hour	50.00	198.90	9945.00
3	Crew for Grinding machine	Hour	8.00	198.90	1591.20
4	Foreman	Day	8.00	510.00	4080.00
5	Marker / Fabricator / Erector	Day	32.00	550.00	17600.00
6	Gas cutter	Day	17.00	445.00	7565.00
7	Welder ( General )	Day	18.00	445.00	8010.00
8	Helper fabrication / erection	Day	52.00	400.00	20800.00
9	Electrician	Day	1.00	515.00	515.00
Total cost of Labour				Rs:	<b>70816.20</b>

Add towards highly skilled labour charges @ 30% on total cost of labour

**21244.86**

Total Cost of Labour

**92061.06**

labour component/unit qty

460.30

Add contractor's profit and overhead charges	13.615%	62.70
labour component/unit qty (including contractor's profit)		<u>523.00</u>

**ABSTRACT:**

A. Cost of Materials	Rs: 1124566.57
B. Hire charges of Machinery	Rs: 17726.60
C. Cost of Labour	Rs: 92061.06
	Total Rs: 1234354.23
D. Add for excise duty	0.00% Rs: 0.00
(on 75 percent cost excluding cost of materials)	Total Rs: 1234354.23
E. Add for transportation upto work site @	3% Rs: 37030.63
	Total Rs: 1271384.85
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615% Rs: 173099.05
Add 2 leads	
Add 1 km lead charges for fabricated parts	I 19.00 per tonne 787.436
Unloading charges of fabricated parts	Rs 74.80 per tonne 3100.012
Total cost for	200.000 Rm Rs: 1448371.35
	Rate per Rm Rs: 7241.90

**VERTICAL LIFT GATES/STOP LOGS - ROLLER MOUNTED**

IRR-GAW-2-6 Design, fabrication, supply, erection, testing and **commissioning of fixed wheel type vertical lift service gate** consisting of skin plate, vertical and horizontal girders, wheels, stiffeners, lifting brackets, guide rollers, ballast blocks, teflon claded rubber seals etc., with all accessories for river sluice / canal sluice vent including cost of all materials, machinery, labour,welding ,aligning finishing seal fixing etc.with alleads and lifts, complete as per specifications andvapproved drawings  
**(without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)**

Drawing No. CE/CDO/DEE/DEE4/GNC/HR/2150/96,2137/98 (GNSS Project)

Gate Size: 3.66 X 6.1 Mtr

DATA:	RATE ANALYSIS		UNIT :	10.000 tonne	
<b>A. MATERIALS:</b>					
SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel				
	Plates / flats	kg	7103.00	37.40	265652.20
	Beams/Channels	kg	2727.00	37.50	102262.50
2	Alloy steel components				
	Wheel axles / Pins	kg	108.00	450.00	48600.00
3	Cast steel components				
	Wheels / Guide rollers	kg	504.00	190.00	95760.00
4	Alluminium / Bronze alloy components				
	Bearings	kg	12.00	970.00	11640.00
5	Bolt / Nut / Washer				
	GI bolts / nuts / washers	kg	36.00	100.00	3600.00
	MS bolts / nuts / washers	kg	6.00	80.00	480.00
6	Rubber seals				
	Bottom seal ( flat uncladed )	Rm	3.72	780.00	2901.60
	Side seals ( bulb teflon claded )	Rm	12.30	1670.00	20541.00
	Top seal ( bulb teflon claded )	Rm	3.72	1670.00	6212.40
	Corner seals ( bulb teflon claded )	Nos	2.00	1630.00	3260.00
7	Oxygen gas	cum	170.00	42.00	7140.00
8	Acetyline gas	cum	56.00	335.00	18760.00
9	Welding electrodes	Nos	3200.00	13.00	41600.00
10	Welding electrodes ( LH )	Nos	800.00	15.00	12000.00
11	Use rate welding holder set	Hour	500.00	7.80	3900.00
12	Use rate gas cutting torch set	Hour	40.00	24.17	966.67
13	Sundries	LS	60.00	30.00	1800.00
Total cost of Materials				Rs:	<b>647076.37</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	500.00	16.00	8000.00
2	Fuel / Energy charges	Hour	500.00	67.20	33600.00
	Pug cutting machine	Hour	85.00	6.40	544.00
	Fuel / Energy charges	Hour	85.00	2.80	238.00

3	Tower crane	Hour	10.00	867.10	8671.00
4	Fuel / Energy charges	Hour	10.00	145.70	1457.00
4	Mobile crane 16 T	Hour	30.00	2278.10	68343.00
5	Fuel / Energy charges	Hour	30.00	75.00	2250.00
5	Stationery derrick crane	Hour	20.00	86.10	1722.00
6	Fuel / Energy charges	Hour	20.00	0.00	0.00
6	Grinding machine	Hour	10.00	22.50	225.00
7	Fuel / Energy charges	Hour	10.00	28.00	280.00
7	Drilling machines	Hour	30.00	22.50	675.00
8	Fuel / Energy charges	Hour	30.00	28.00	840.00
8	Bending machine	Hour	10.00	42.60	426.00
9	Fuel / Energy charges	Hour	10.00	84.10	841.00
9	Sundries	LS	50.00	30.00	1500.00
Total hire charges of Machinery				Rs:	129612.00

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane 16 T	Hour	30.00	526.70	15801.00
2	Crew for Tower crane	Hour	10.00	189.30	1893.00
3	Crew for Drilling machine	Hour	30.00	198.90	5967.00
4	Crew for Grinding machine	Hour	10.00	198.90	1989.00
5	Crew for Bending machine	Hour	10.00	131.80	1318.00
6	Foreman	Day	16.00	510.00	8160.00
7	Marker / Fabricator / Erector	Day	50.00	550.00	27500.00
8	Gas cutter	Day	8.00	445.00	3560.00
9	Welder ( General )	Day	52.00	445.00	23140.00
10	Welder ( X - ray grade )	Day	14.00	510.00	7140.00
11	Khalasi	Day	170.00	445.00	75650.00
12	Helper fabrication / erection	Day	230.00	400.00	92000.00
13	Electrician	Day	4.00	515.00	2060.00
Total cost of Labour				Rs:	266178.00

Add towards highly skilled labour charges @ 30% on total cost of labour **79853.40**  
**Total Cost of Labour** **346031.40**

labour component/unit qty	34603.10
Add contractor's profit and overhead charges	13.615% 4711.20
labour component/unit qty (including contractor's profit)	<b>39314.30</b>

**ABSTRACT:**

A. Cost of Materials	Rs: 647076.37
B. Hire charges of Machinery	Rs: 129612.00
C. Cost of Labour	Rs: 346031.40
D. Add for excise duty	Total 0.00% Rs: 1122719.77
(on 75 percent cost excluding cost of materials)	Total Rs: 0.00
E. Add for transportation upto work site @	3% Rs: 1122719.77
	Total Rs: 33681.59
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615% Total Rs: 1156401.36
Add 2 leads	
Add 1 km lead charges for fabricated parts	I 19.00 per tonne 380
Unloading charges of fabricated parts	Rs 74.80 per tonne 1496
Total cost for	10.000 tonne Rs: 1315721.40
	<b>Rate per tonne</b> Rs: 131572.10

**VERTICAL LIFT GATES-ROPE DRUM HOIST UPTO 30 TON CAP. POWER OPERATED**

IRR-GAW-2-7 Design, fabrication, supply, erection, testing and **commissioning of adequate capacity rope drum hoist** consisting of hoist platform, rope drum, gear system, electric motor, electro-magnetic brake system, hand operation assembly, control panel, wire rope, pulleys, ladder etc., with all accessories for operating river sluice / canal sluice service gate including cost of all materials, machinery, labour, , complete as per specifications and drawings with all leads and lifts (without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)

DATA:

RATE ANALYSIS		UNIT :	6.243 tonne wt		
A. MATERIALS:		25 t capacity			
SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	Structural steel Angles / beams / channels / bars Plates / flats Chequered plate	kg kg kg	1487.00 402.00 290.00	37.50 37.40 63.00	55762.50 15034.80 18270.00
2	Cast steel components : Rope drums 2 Nos / Gears Pinions Pulleys 3 Nos / Couplings 2 Nos Plummer blocks / Hubs	kg kg kg kg	1926.00 79.00 306.00 72.00	235.00 225.00 190.00 190.00	452610.00 17775.00 58140.00 13680.00
3	Alloy steel components Shafts Pins	kg kg	346.00 73.00	235.00 450.00	81310.00 32850.00
4	Bronze alloy components : Bronze bearings / bush Wire rope 28 mm dia 6/37	kg	57.00	970.00	55290.00
5	construction	kg	325.00	200.00	65000.00
6	MS Bolt / Nut / Washer	kg	32.00	80.00	2560.00
7	Worm reducers	No.	1.00	224400.00	224400.00
8	Electric motor 5 hp	No.	1.00	33000.00	33000.00
9	Manual operating system	No.	1.00	28820.00	28820.00
10	Gate position indicator	No.	1.00	195800.00	195800.00
11	Ele-magnetic brake	No.	1.00	35200.00	35200.00
12	Electric cable / switch / control panel etc	LS	1.00	50380.00	50380.00
13	Oxygen gas	cum	45.00	42.00	1890.00
14	Acetyline gas	cum	15.00	335.00	5025.00
15	Welding electrodes	Nos	80.00	13.00	1040.00
16	Welding electrodes ( LH )	Nos	720.00	15.00	10800.00
17	Grease	kg	50.00	275.00	13750.00
18	Use rate welding holder set	Hour	85.00	7.80	663.00
19	Use rate gas cutting torch set	Hour	16.00	24.17	386.67
20	Sundries	LS	25.00	30.00	750.00
Total cost of Materials					Rs: 1470186.97

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer Fuel / Energy charges	Hour Hour	85.00 53.00	16.00 67.20	1360.00 3561.60
2	Tower crane 5 t capacity Fuel / Energy charges	Hour Hour	2.00 2.00	867.10 145.70	1734.20 291.40
3	Pug cutting machine Fuel / Energy charges	Hour Hour	15.00 15.00	6.40 2.80	96.00 42.00
4	Mobile derrick crane Fuel / Energy charges	Hour Hour	10.00 10.00	519.70 299.90	5197.00 2999.00
5	Grinding machine Fuel / Energy charges	Hour Hour	2.00 2.00	22.50 28.00	45.00 56.00
6	Drilling machines Fuel / Energy charges	Hour Hour	2.00 2.00	22.50 28.00	45.00 56.00
7	Sundries	LS	25.00	30.00	750.00
Total hire charges of Machinery					Rs: 16233.20

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane	Hour	10.00	177.50	1775.00
2	Crew for Tower crane	Hour	2.00	189.30	378.60
3	Crew for Drilling machine	Hour	2.00	198.90	397.80
4	Crew for Grinding machine	Hour	2.00	198.90	397.80
5	Foreman	Day	15.00	510.00	7650.00
6	Marker / Fabricator / Erector	Day	19.00	550.00	10450.00
7	Gas cutter	Day	4.00	445.00	1780.00
8	Welder ( General )	Day	8.00	445.00	3560.00
9	Khalasi	Day	4.00	445.00	1780.00
10	Helper fabrication / erection	Day	44.00	400.00	17600.00
11	Electrician	Day	2.00	515.00	1030.00
Total cost of Labour					Rs: 46799.20

Add towards highly skilled labour charges @ 30% on total cost of labour

14039.76

Total Cost of Labour

60838.96

labour component/unit qty

2433.60

Add contractor's profit and overhead charges	13.615%	331.30
labour component/unit qty (including contractor's profit)		<u>2764.90</u>

**ABSTRACT:**

A. Cost of Materials	Rs: 1470186.97
B. Hire charges of Machinery	Rs: 16233.20
C. Cost of Labour	Rs: 60838.96
	Rs: 1547259.13
D. Add for excise duty	0.00%
(on 75 percent cost excluding cost of materials)	Total
E. Add for transportation upto work site @	3%
	Total
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615%
Add 2 leads	Rs: 216979.11
Add 1 km lead charges for fabricated parts	I 19.00 per tonne 237.234
Unloading charges of fabricated parts	Rs: 74.80 per tonne 933.952
Total cost for	6.243 tonne wt Rs: 1811827.20
	25.000 t capacity
	Rate per tonne wt Rs: 290217.40
	<b>Rate per tonne capacity of hoist</b> Rs: <b>72473.10</b>

**HOIST BRIDGE/ WITH TRESSELS**

IRR-GAW-2-8 Design, fabrication, supply, erection and **commissioning of structural steel hoist bridge** consisting of columns, beams, bracings, stiffeners, ties, chequered plate covering, hand railing, ladder etc., with all accessories for supporting rope drum hoist for operating barrage gates including cost of all materials, machinery, labour, welding, finishing, etc., complete complete as per specifications and drawings **with all leads and lifts**  
**(without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)**  
Drawing No. CE/CDO/VRSP/215,216/86-87 (Vengalaraya Sagar - Gomukhi Project)

DATA:	RATE ANALYSIS			Vent Size: 12 X 6.6 Mtr	UNIT : 10.500 tonne
<b>A. MATERIALS:</b>					
SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel angles/ beams / channels	kg	1494.00	37.50	56025.00
	Structural steel plates / flats	kg	6564.00	37.40	245493.60
	Chequered plate	kg	2442.00	63.00	153846.00
2	MS pipe 25 mm dia	Rm	60.00	150.00	9000.00
3	Bolt / Nut / Washers	kg	18.00	80.00	1440.00
4	Oxygen gas	cum	105.00	42.00	4410.00
5	Acetyline gas	cum	35.00	335.00	11725.00
6	Welding electrodes	Nos	3150.00	13.00	40950.00
7	Use rate welding holder set	Hour	394.00	7.80	3073.20
8	Use rate gas cutting torch set	Hour	105.00	24.17	2537.50
9	Sundries	LS	50.00	30.00	1500.00
Total cost of Materials				Rs:	<b>530000.30</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	394.00	16.00	6304.00
	Fuel / Energy charges	Hour	394.00	67.20	26476.80
2	Pug cutting machine	Hour	52.00	6.40	332.80
	Fuel / Energy charges	Hour	52.00	2.80	145.60
3	Mobile crane 30 T	Hour	30.00	3096.80	92904.00
	Fuel / Energy charges	Hour	30.00	118.80	3564.00
4	Stationery derrick crane	Hour	20.00	86.10	1722.00
	Fuel / Energy charges	Hour	20.00	0.00	0.00
5	Drilling machine	Hour	20.00	22.50	450.00
	Fuel / Energy charges	Hour	20.00	28.00	560.00
6	Grinding machine	Hour	20.00	22.50	450.00
	Fuel / Energy charges	Hour	20.00	28.00	560.00
7	Tower Crane	Hour	20.00	867.10	17342.00
	Fuel / Energy charges	Hour	20.00	145.70	2914.00
8	Sundries	LS	50.00	30.00	1500.00
Total hire charges of Machinery				Rs:	<b>155225.20</b>

## C. LABOUR:

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane 30 T	Hour	30.00	526.70	15801.00
2	Crew for Drilling machine	Hour	20.00	198.90	3978.00
3	Crew for Grinding machine	Hour	20.00	198.90	3978.00
4	Crew for Tower Crane	Hour	20.00	189.30	3786.00
5	Foreman	Day	10.00	510.00	5100.00
6	Marker / Fabricator / Erector	Day	50.00	550.00	27500.00
7	Gas cutter	Day	14.00	445.00	6230.00
8	Welder ( General )	Day	53.00	445.00	23585.00
9	Helper fabrication / erection	Day	400.00	400.00	160000.00
10	Electrician	Day	6.00	515.00	3090.00
Total cost of Labour				Rs:	253048.00

Add towards highly skilled labour charges @ 30% on total cost of labour  
**Total Cost of Labour**

labour component/unit qty	31329.80
Add contractor's profit and overhead charges	13.615% 4265.60
labour component/unit qty (including contractor's profit)	<b>35595.40</b>

## ABSTRACT:

A. Cost of Materials		Rs:	530000.30
B. Hire charges of Machinery		Rs:	155225.20
C. Cost of Labour		Rs:	328962.40
D. Add for excise duty (on 75 percent cost excluding cost of materials)	Total 0.00%	Rs:	1014187.90 0.00
E. Add for transportation upto work site @	Total 3%	Rs:	1014187.90 30425.64
F. Add for contractor's profit and overheads on (A+B+C+D+E)	Total 13.615%	Rs:	1044613.54 142224.13
Add 2 leads			
Add 1 km lead charges for fabricated parts	I	19.00 per tonne	399
Unloading charges of fabricated parts	Rs	74.80 per tonne	1570.8
Total cost for	10.500 tonne	Rs:	1188807.47
	Rate per tonne	Rs:	113219.80

## **ROPE DRUM HOIST WITHOUT HOIST BRIDGE FOR BARRAGE GATES**

**IRR-GAW-2-9** Design, fabrication, supply, erection, testing and **commissioning of adequate capacity rope drum hoist consisting of rope drum**, pulleys, gear system, electric motor, electro-magnetic brake system, manual operation assembly, position indicator, control panel, wire rope etc., with all accessories for operating vertical lift roller gates for barrage including cost of all materials, machinery, labour, cutting, bending, aligning, anchoring, welding, finishing etc., **complete with all leads and lifts.**  
(without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)

## DATA:

RATE ANALYSIS

**UNIT :**

5.069 tonne wt

**50.00 t capacity**

A. MATERIALS:			50.00 t capacity		
Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel				
	Angles / beams / channels / bars	kg	420.00	37.50	15750.00
2	Plates / flats	kg	225.00	37.40	8415.00
	Cast steel components :				
2	Rope drums 2 Nos / Gears	kg	1290.00	235.00	303150.00
	Pinions	kg	98.00	225.00	22050.00
3	Pulleys 3 Nos / Couplings 2 Nos	kg	650.00	190.00	123500.00
	Plummer blocks / Hubs	kg	250.00	190.00	47500.00
3	Alloy steel components				
	Shafts / Keys	kg	350.00	235.00	82250.00
4	Pins	kg	96.00	450.00	43200.00
	Bronze alloy components :				
4	Bronze bearings / bush	kg	100.00	970.00	97000.00
	Wire rope 28 mm dia 6/37				
5	construction	kg	435.00	200.00	87000.00
6	MS Bolt / Nut / Washer	kg	26.00	80.00	2080.00
7	Worm reducers	No.	1.00	224400.00	224400.00

8	Electric motor 12.5 hp	No.	1.00	72600.00	72600.00
9	Manual operating system	No.	1.00	28820.00	28820.00
10	Gate position indicator	No.	1.00	195800.00	195800.00
11	Ele-magnetic brake	No.	1.00	35200.00	35200.00
12	Electric cable / switch / control panel etc	LS	1.00	50380.00	50380.00
13	Oxygen gas	cum	30.00	42.00	1260.00
14	Acetyline gas	cum	10.00	335.00	3350.00
15	Welding electrodes	Nos	44.00	13.00	572.00
16	Welding electrodes ( LH )	Nos	392.00	15.00	5880.00
17	Grease	kg	50.00	275.00	13750.00
18	Use rate welding holder set	Hour	47.00	7.80	366.60
19	Use rate gas cutting torch set	Hour	12.00	24.17	290.00
20	Sundries	LS	25.00	30.00	750.00
Total cost of Materials				Rs:	1465313.60

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	47.00	16.00	752.00
	Fuel / Energy charges	Hour	47.00	67.20	3158.40
2	Tower crane 5 t capacity	Hour	2.00	867.10	1734.20
	Fuel / Energy charges	Hour	2.00	145.70	291.40
3	Pug cutting machine	Hour	9.00	6.40	57.60
	Fuel / Energy charges	Hour	9.00	2.80	25.20
4	Mobile derrick crane	Hour	10.00	519.70	5197.00
	Fuel / Energy charges	Hour	10.00	299.90	2999.00
5	Grinding machine	Hour	2.00	22.50	45.00
	Fuel / Energy charges	Hour	2.00	28.00	56.00
6	Drilling machines	Hour	2.00	22.50	45.00
	Fuel / Energy charges	Hour	2.00	28.00	56.00
7	Sundries	LS	25.00	30.00	750.00
Total hire charges of Machinery				Rs:	15166.80

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Mobile crane	Hour	10.00	177.50	1775.00
2	Crew for Tower crane	Hour	2.00	189.30	378.60
3	Crew for Drilling machine	Hour	2.00	198.90	397.80
4	Crew for Grinding machine	Hour	2.00	198.90	397.80
5	Foreman	Day	13.00	510.00	6630.00
6	Marker / Fabricator / Erector	Day	17.00	550.00	9350.00
7	Gas cutter	Day	3.00	445.00	1335.00
8	Welder ( General )	Day	5.00	445.00	2225.00
9	Khalasi	Day	4.00	445.00	1780.00
10	Helper fabrication / erection	Day	36.00	400.00	14400.00
11	Electrician	Day	2.00	515.00	1030.00
Total cost of Labour				Rs:	39699.20

Add towards highly skilled labour charges @ 30% on total cost of labour  
Total Cost of Labour

labour component/unit qty	1032.20
Add contractor's profit and overhead charges	13.615% <u>140.50</u>
labour component/unit qty (including contractor's profit)	<u>1172.70</u>

**ABSTRACT:**

A. Cost of Materials	Rs: 1465313.60
B. Hire charges of Machinery	Rs: 15166.80
C. Cost of Labour	Rs: 51608.96
D. Add for excise duty (on 75 percent cost excluding cost of materials)	Total 0.00%
E. Add for transportation upto work site @	Total 3%
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615% 13.615%
Add 2 leads	Total 3%
Add 1 km lead charges for fabricated parts	I 19.00 per tonne 192.622
Unloading charges of fabricated parts	Rs 74.80 per tonne 758.322
Total cost for	5.069 tonne wt Rs: 1793854.77

50.000 t capacity	Rs:	
Rate per tonne wt	Rs:	353887.30
<b>Rate per tonne capacity of hoist</b>	Rs:	<b>35877.10</b>

**SCREW GEAR HOISTS including plat form( UPTO 10 TON CAP)**

IRR-GAW-2-10

Design, fabrication, supply, erection, testing and **commissioning of adequate capacity screw gear type hoist** consisting of supporting structure, platform, ladder etc., with all accessories for operating canal escape / regulator gate including cost of all materials, machinery, labour, cutting, bending, aligning, anchoring, welding,finishing etc.,complete with all leads and lifts.  
(without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)

**DATA:** Screw type hoist for operating gate consists of supporting structure, hoist body, hoist stem, thrust bearings, operating wheel / handle with related accessories.  
Consider screw type hoist for canal escape / regulator gate for vent opening of size 2 m x 2 m.  
Actual capacity of hoist as per data : 3.000 tonnes  
Weight of hoist with all accessories is assumed at 0.3 tonne per tonne capacity of hoist.  
The actual weight of screw hoist as per data sheet : 0.871 tonnes  
Consider actual weight for data rate analysis.

- 1 Requirement of materials:
- a. Structural steel conforming to IS : 2062 :
 

Angles / Beams / Channels / Bars with 2.5 % wastage	:	402.00 kg
Plates / Flats with 2.5 % wastage	:	145.00 kg
Chequered plates with 2.5 % wastage	:	176.00 kg
  - b. Cast iron components conforming to IS : 210 :
 

Hoist body / Lock nut / Main nut	:	55.00 kg
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  - c. Alloy steel components conforming to IS : 1570 :
 

Hoist stem	:	75.00 kg
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  - d. Alluminium/ Bronze alloy components conforming to IS : 305 :
 

Bearings / Bush	:	4.00 kg
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  - e. Bolt / Nut / Washers conforming to IS : 1363 :
 

MS Bolts / Nuts / Washers with 2.5 % wastage	:	8.00 kg
MS pipe 32 mm dia	:	8.8 Rm
  - f. Welding electrodes :
 

Welding electrodes for stitch welding at 10 % of total with 2.5 % wastage	:	7 Nos
Welding electrodes for run welding at 90 % of total with 2.5 % wastage	:	66 Nos
- 2 Cutting :
- |   |   |              |
|---|---|--------------|
| Total length of cutting assuming cutting for 2 sides                  | : | 18 Rm        |
| Add for variations ( cutting for more than 2 sides / odd shapes etc ) | : | 2 Rm         |
| <b>Total</b>  | : | <b>20 Rm</b> |
- For cutting structural steel sections to required sizes gas cutting is assumed.
- |  |   |          |
|--|---|----------|
| Time for gas cutting manually assuming average cutting programe    | : | 10 hours |
| Acetelyne gas @ 0.6 cum / hour ( 10 x 0.60 )                       | : | 6 cum    |
| Oxygen gas @ 1.8 cum / hour ( 10 x 1.80 )                          | : | 18 cum   |
| Use of gas cutting torch with 50 min / hr working ( 10 x 60 / hr ) | : | 12 hours |
- 3 Welding :
- |  |   |                |
|--|---|----------------|
| Length of welding  | : | 10 Rm          |
| For stich welding @ 2 hrs usage / shift & @ 15 electrodes / hr<br>( 7 / 15 ) x 8 / 2 | : | 2 hours        |
| For run welding @ 6 hrs usage / shift & @ 15 electrodes / hr<br>( 66 / 15 ) x 8 / 6  | : | 6 hours        |
| <b>Total</b>   | : | <b>8 hours</b> |
- Deploy welding transformer for 8 hours.
- Fuel / Energy charges @ 25 % hrs for stich welding & @ 75 % hrs for run welding.  
( 2 x 0.25 + 6 x 0.75 ) : 5 hours

- 4 Requirement of other machinery :
- For drilling holes for bolts 2 hours use of drilling machine considered.  
For grinding and finishing weld joints 2 hours use of grinding machine considered

- 5 Requirement of work force :

Work component	Foreman	Marker /	Gas cutter/	Helper
	Fabricator /	Welder		
	Erector /			
Cutting sections / Drilling holes 14 hours	1	2	2	4
Fabricating / welding 8 hours	1	1	1	2
Erection of hoist frame / body	1	1	---	2
Trial operation and final adjustments	1	1	---	1
<b>Total :</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>9</b>

- 6 Excise duty on supply :

Excise duty is applicable on supply of fabricated parts. The cost of materials is inclusive of all taxes/ duties. Therefore, for purpose of rate analysis 75 percent of total cost excluding the cost of materials ( assuming 25 % erection cost ) is considered for assessing excise duty.

7 Use rate of materials :

Cost of weld	7800.00 / Each	Rs:	7800.00
Life of welding set	:	1000 hours	
Use rate of ( cost / life )		Rs:	7.80
Cost of gas	14500.00 / Each	Rs:	14500.00
Life of gas cutting set	:	600 hours	
Use rate of ( cost / life )		Rs:	24.17

DATA:

### RATE ANALYSIS

UNIT :

0.871 tonne

3.00 t capacity

#### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel Angles / beams / channels / bars Plates / flats Chequered plate	kg	402.00 145.00 176.00	37.50 37.40 63.00	15075.00 5423.00 11088.00
2	Cast iron components : Hoist body / Lock nut / Main nut	kg	55.00	235.00	12925.00
3	Alloy steel components Hoist stem	kg	75.00	235.00	17625.00
4	Bronze alloy components : Thrust bearings	kg	4.00	970.00	3880.00
5	MS Bolt / Nut / Washer	kg	8.00	80.00	640.00
6	Oxygen gas	cum	18.00	42.00	756.00
7	Acetyline gas	cum	6.00	335.00	2010.00
8	Welding electrodes	Nos	7.00	13.00	91.00
9	Welding electrodes ( LH )	Nos	66.00	15.00	990.00
10	Grease	kg	2.00	275.00	550.00
11	Use rate welding holder set	Hour	8.00	7.80	62.40
12	Use rate gas cutting torch set	Hour	11.00	24.17	265.83
13	Sundries	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	71441.23

#### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer Fuel / Energy charges	Hour	8.00 5.00	16.00 67.20	128.00 336.00
2	Grinding machine Fuel / Energy charges	Hour	2.00 2.00	22.50 28.00	45.00 56.00
3	Drilling machines Fuel / Energy charges	Hour	2.00 2.00	22.50 28.00	45.00 56.00
4	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	726.00

#### C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling machine	Hour	2.00	198.90	397.80
2	Crew for Grinding machine	Hour	2.00	198.90	397.80
3	Foreman	Day	4.00	510.00	2040.00
4	Marker / Fabricator / Erector	Day	5.00	550.00	2750.00
5	Gas cutter	Day	2.00	445.00	890.00
6	Welder ( General )	Day	1.00	445.00	445.00
7	Helper fabrication / erection	Day	9.00	400.00	3600.00
8	Electrician	Day	0.50	515.00	257.50
Total cost of Labour				Rs:	10778.10

Add towards highly skilled labour charges @ 30% on total cost of labour

3233.43

Total Cost of Labour

14011.53

labour component/unit qty 4670.50

Add contractor's profit and overhead charges 13.615% 635.90

labour component/unit qty (including contractor's profit) **5306.40**

#### ABSTRACT:

A. Cost of Materials Rs: 71441.23

B. Hire charges of Machinery Rs: 726.00

C. Cost of Labour Rs: 14011.53

			Gates and Allied Works - Item Unit Rates 2016-17
D. Add for excise duty (on 75 percent cost excluding cost of materials)	Total 0.00%		Rs: 86178.76 Rs: 0.00
E. Add for transportation upto work site @	Total 3%		Rs: 86178.76 Rs: 2585.36
F. Add for contractor's profit and overheads on (A+B+C+D+E)	Total 13.615%		Rs: 88764.13
Add 2 leads			
Add 1 km lead charges for fabricated parts	I 19.00 per tonne	33.098	
Unloading charges of fabricated parts Rs	74.80 per tonne	130.302	
Total cost for	0.871 tonne		Rs: 101012.76
	3.000 t capacity		Rs: 115973.30
	Rate per tonne		Rs: 33670.90
	<b>Rate per tonne capacity</b>		

### MANUAL OPERATED ROPE DRUM HOISTS

IRR-GAW-2-11

Design, fabrication, supply, erection, testing and **commissioning of adequate capacity manually operated rope drum hoist** consisting of hoist platform, rope drum, gear system, brake system, wire rope, ladder etc., with all accessories for operating canal regulator radial gate including cost of all materials, machinery, labour, welding, finishing, cleaning, ., complete **with all leads and lifts**  
(without painting on sand-blasted or mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)

DATA:

#### RATE ANALYSIS

UNIT :

**2.804  
10.00**

tonne  
t capacity

#### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel				
	Angles / beams / channels / bars	kg	1229.00	37.50	46087.50
	Plates / flats	kg	453.00	37.40	16942.20
	Chequered plate	kg	195.00	63.00	12285.00
2	Cast steel components :				
	Rope drums 2 Nos / Gears	kg	384.00	235.00	90240.00
	Pinions	kg	14.00	225.00	3150.00
	Pulleys 6 Nos	kg	108.00	190.00	20520.00
3	Plummer blocks / Couplings	kg	47.00	190.00	8930.00
	Alloy steel components				
	Shafts	kg	75.00	235.00	17625.00
4	Pins	kg	24.00	450.00	10800.00
	Bronze alloy components :				
	Bronze bearings / bush	kg	11.00	970.00	10670.00
5	Wire rope 12 mm dia 6/36 construction	kg	42.00	200.00	8400.00
	MS Bolt / Nut / Washer	kg	64.00	80.00	5120.00
6	Worm reducers	No.	1.00	224400.00	224400.00
7	Manual operating system	No.	1.00	28820.00	28820.00
8	Brake	No.	1.00	35200.00	35200.00
9	Wire rope sockets	No	2.00	4620.00	9240.00
10	Oxygen gas	cum	75.00	42.00	3150.00
11	Acetyline gas	cum	25.00	335.00	8375.00
12	Welding electrodes	Nos	69.00	13.00	897.00
13	Welding electrodes ( LH )	Nos	622.00	15.00	9330.00
14	Grease	kg	10.00	275.00	2750.00
15	Use rate welding holder set	Hour	73.00	7.80	569.40
16	Use rate gas cutting torch set	Hour	42.00	24.17	1015.00
17	Sundries	LS	25.00	30.00	750.00
18	Total cost of Materials			Rs:	<b>575266.10</b>

#### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	73.00	16.00	1168.00
	Fuel / Energy charges	Hour	46.00	67.20	3091.20
2	Pug cutting machine	Hour	8.00	6.40	51.20
	Fuel / Energy charges	Hour	8.00	2.80	22.40
3	Mobile derrick crane	Hour	4.00	519.70	2078.80
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
4	Stationery derrick crane	Hour	8.00	86.10	688.80

	Fuel / Energy charges	Hour	8.00	0.00	0.00
5	Grinding machine	Hour	8.00	22.50	180.00
	Fuel / Energy charges	Hour	8.00	28.00	224.00
6	Drilling machines	Hour	16.00	22.50	360.00
	Fuel / Energy charges	Hour	16.00	28.00	448.00
7	Sundries	LS	25.00	30.00	750.00
	Total hire charges of Machinery			Rs:	<b>10262.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate	Amount
				in Rs.	in Rs.
1	Crew for Mobile crane	Hour	4.00	177.50	710.00
2	Crew for Drilling machine	Hour	16.00	198.90	3182.40
3	Crew for Grinding machine	Hour	8.00	198.90	1591.20
4	Foreman	Day	14.00	510.00	7140.00
5	Marker / Fabricator / Erector	Day	20.00	550.00	11000.00
6	Gas cutter	Day	6.00	445.00	2670.00
7	Welder ( General )	Day	7.00	445.00	3115.00
8	Helper fabrication / erection	Day	44.00	400.00	17600.00
9	Electrician	Day	2.00	515.00	1030.00
	Total cost of Labour			Rs:	<b>48038.60</b>

Add towards highly skilled labour charges @ 30% on total cost of labour **14411.58**  
 Total Cost of Labour **62450.18**

labour component/unit qty **6245.00**  
 Add contractor's profit and overhead charges **13.615%** **850.30**  
 labour component/unit qty (including contractor's profit) **7095.30**

**ABSTRACT:**

A. Cost of Materials	Rs:	<b>575266.10</b>
B. Hire charges of Machinery	Rs:	<b>10262.00</b>
C. Cost of Labour	Rs:	<b>62450.18</b>
	Total	Rs: <b>647978.28</b>
D. Add for excise duty	0.00%	Rs: <b>0.00</b>
(on 75 percent cost excluding cost of materials)	Total	Rs: <b>647978.28</b>
E. Add for transportation upto work site @	3%	Rs: <b>19439.35</b>
	Total	Rs: <b>667417.63</b>
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615%	Rs: <b>90868.91</b>
Add 2 leads		
Add 1 km lead charges for fabricated parts	I	19.00 per tonne <b>106.552</b>
Unloading charges of fabricated parts	Rs	74.80 per tonne <b>419.478</b>
Total cost for		2.804 tonne <b>758812.57</b>
	10.000 t capacity	Rs: <b>758812.57</b>
Rate per	tonne	Rs: <b>270617.90</b>
	Rate per tonne capacity of hoist	Rs: <b>75881.30</b>

IRR-GAW-2-

12

New Item  
2015-16-2

OT SLUICE SHUTTERS Screw Gear Hoist Including Platform for below 5 Tons Capacity (Small Gates)  
As per Guidelines of Chief Engineer, Central Designs Organization, Hyderabad Specification drawing for Krishna Delta System

Fabrication, supply, erection, testing and commissioning of Embedded parts consisting of supporting structure, platform etc. with all accessories for operating canal escape/ regulator gate with all accessories including cost of all materials, machinery, labour, cutting, bending, aligning, anchoring, welding, finishing etc. complete as per Specification and approved drawings

(without painting on mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)

DATA:

**RATE ANALYSIS**

UNIT :

**0.869 tonne****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel angles/ beams / channel	kg	445.78	37.50	16716.75
2	Structural steel plates / flats	kg	28.00	37.40	1047.20
3	Chequered plate	kg	144.80	63.00	9122.40
	Cast iron Components				

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4	Hoist Body/lock nut/Main Nut etc. Bronze Alloy Steel Components	Kg	83.00	235.00	19505.00
5	Thrust Bearings	kg	3.00	970.00	2910.00
6	MS Bolt/Nut/ Washer	kg	16.00	80.00	1280.00
7	Oxygen gas	cum	21.00	42.00	882.00
8	Acetyline gas	cum	7.00	335.00	2345.00
9	Welding electrodes	Nos	200.00	13.00	2600.00
10	Welding electrodes (LH)	Nos	40.00	15.00	600.00
11	Use rate welding holder set	Hour	72.00	7.80	561.60
12	Use rate gas cutting torch set	Hour	36.00	24.17	870.00
13	Sundries	LS	20.00	30.00	600.00
Total cost of Materials				Rs:	59039.95

#### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer Fuel / Energy charges	Hour	30.00	16.00	480.00
2	Pug cutting machine Fuel / Energy charges	Hour	12.00	6.40	76.80
3	Drilling machine Fuel / Energy charges	Hour	8.00	22.50	180.00
4	Grinding machine Fuel / Energy charges	Hour	8.00	28.00	224.00
5	Lathe machine (Screw Rod M/C)	Hour	36.00	22.50	810.00
6	Sundries	LS	10.00	28.00	1008.00
Total hire charges of Machinery				Rs:	9928.40

#### C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling machine	Hour	8.00	198.90	1591.20
2	Crew for Grinding machine	Hour	36.00	198.90	7160.40
3	Foreman	Day	2.00	510.00	1020.00
4	Marker / Fabricator / Erector	Day	10.00	550.00	5500.00
5	Gas cutter	Day	4.00	445.00	1780.00
6	Welder ( General )	Day	4.00	445.00	1780.00
7	Mazdoors	Day	6.00	350.00	2100.00
8	Helper fabrication / erection	Day	6.00	400.00	2400.00
Total cost of Labour				Rs:	23331.60

labour component/unit qty 23331.60

Add contractor's profit and overhead charges 13.615% 3176.60

labour component/unit qty (including contractor's profit) **26508.20**

#### ABSTRACT:

A. Cost of Materials	Rs: 59039.95
B. Hire charges of Machinery	Rs: 9928.40
C. Cost of Labour	Rs: 23331.60
D. Add for excise duty	Total 0.00%
(on 75 percent cost excluding cost of materials)	Total 0.00%
E. Add for transportation upto work site @	Rs: 92299.95
F. Add for contractor's profit and overheads on (A+B+C+D+E)	Total 3%
Add 2 leads	Rs: 2769.00
Add 1 km lead charges for fabricated parts	Total 13.615%
Unloading charges of fabricated parts Rs	Rs: 12943.64
Total cost for	Rs: 108175.61
Rate per tonne	Rs: 124482.90

(without painting on mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)

Height of EM parts: 5.4 M

Gate Size: 0.99 X 0.875 M

DATA:

**RATE ANALYSIS**

UNIT :

**1.334 tonne****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel angles/ beams / channel	kg	440.57	37.50	16521.38
2	Structural steel plates / flats	kg	869.00	37.40	32500.60
3	Stainless Steel Flats	kg	25.12	275.00	6908.00
4	Oxygen gas	cum	12.00	42.00	504.00
5	Acetyline gas	cum	4.00	335.00	1340.00
6	Welding electrodes	Nos	210.00	13.00	2730.00
7	Welding electrodes (Stainless Steel)	Nos	30.00	23.00	690.00
8	Use rate welding holder set	Hour	62.00	7.80	483.60
9	Use rate gas cutting torch set	Hour	32.00	24.17	773.33
10	Sundries	LS	3.00	30.00	90.00
Total cost of Materials				Rs:	<b>62540.91</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	30.00	16.00	480.00
	Fuel / Energy charges	Hour	30.00	67.20	2016.00
2	Pug cutting machine	Hour	20.00	6.40	128.00
	Fuel / Energy charges	Hour	20.00	2.80	56.00
3	Drilling machine	Hour	4.00	22.50	90.00
	Fuel / Energy charges	Hour	4.00	28.00	112.00
4	Grinding machine	Hour	20.00	22.50	450.00
	Fuel / Energy charges	Hour	20.00	28.00	560.00
5	Sundries	LS	3.00	30.00	90.00
Total hire charges of Machinery				Rs:	<b>3982.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling machine	Hour	4.00	198.90	795.60
2	Crew for Grinding machine	Hour	20.00	198.90	3978.00
3	Foreman	Day	8.00	510.00	4080.00
4	Marker / Fabricator / Erector	Day	6.00	550.00	3300.00
5	Gas cutter	Day	2.00	445.00	890.00
6	Welder ( General )	Day	4.00	445.00	1780.00
7	Mazdoors	Day	4.00	350.00	1400.00
8	Helper fabrication / erection	Day	8.00	400.00	3200.00
Total cost of Labour				Rs:	<b>19423.60</b>

labour component/unit qty 19423.60

Add contractor's profit and overhead charges 13.615% 2644.50

labour component/unit qty (including contractor's profit) **22068.10****ABSTRACT:**

A. Cost of Materials	Rs: 62540.91
B. Hire charges of Machinery	Rs: 3982.00
C. Cost of Labour	Rs: 19423.60
D. Add for excise duty	Total 0.00% Rs: 0.00
(on 75 percent cost excluding cost of materials)	Total Rs: 85946.51
E. Add for transportation upto work site @	3% Rs: 2578.40
	Total Rs: 88524.90
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615% Rs: 12052.67
Add 2 leads	
Add 1 km lead charges for fabricated parts	I 19.00 per tonne 50.692
Unloading charges of fabricated parts Rs	74.80 per tonne 199.566
Total cost for	1.334 tonne Rs: 100827.83
	Rate per tonne Rs: <b>75583.10</b>

OT SLUICE SHUTTERS for Below 5 Tons capacity (small gates)

**As per Guidelines of Chief Engineer, Central Designs Organization, Hyderabad Specification drawing for Krishna Delta System**

Fabrication, supply, erection, testing and commissioning of Sluice Shutters consisting of skin plate, horizontal and vertical angles, stiffeners, rubber seals, clamps with all accessories for sluice shutters including cost of all materials, machinery, labour, seal fixing etc., complete as per specifications and approved drawings

**(without painting on mechanical cleaning surfaces which are added extra as per schedule of rates under items in this chapter and add as applicable separately)**

Gate Size: 0.99 X 0.875 M

DATA:

**RATE ANALYSIS**

UNIT :

**0.161 tonne****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Structural steel angles/ beams / channels	kg	63.72	37.50	2389.50
2	Structural steel plates / flats	kg	96.50	37.40	3609.10
3	GI Bolts/Nut/Washer	kg	20.00	140.00	2800.00
	Rubber Seals				
4	Bottom Seal	Rm	0.82	780.00	639.60
5	Side Seal/ Top Seal	Rm	1.75	1210.00	2117.50
6	Oxygen gas	cum	15.00	42.00	630.00
7	Acetyline gas	cum	5.00	335.00	1675.00
8	Welding electrodes	Nos	110.00	13.00	1430.00
9	Use rate welding holder set	Hour	30.00	7.80	234.00
10	Use rate gas cutting torch set	Hour	12.00	24.17	290.00
11	Sundries	LS	3.00	30.00	90.00
Total cost of Materials				Rs:	<b>15904.70</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Welding transformer	Hour	14.00	16.00	224.00
	Fuel / Energy charges	Hour	14.00	67.20	940.80
2	Pug cutting machine	Hour	4.00	6.40	25.60
	Fuel / Energy charges	Hour	4.00	2.80	11.20
3	Drilling machine	Hour	2.00	22.50	45.00
	Fuel / Energy charges	Hour	2.00	28.00	56.00
4	Grinding machine	Hour	4.00	22.50	90.00
	Fuel / Energy charges	Hour	4.00	28.00	112.00
5	Sundries	LS	3.00	30.00	90.00
Total hire charges of Machinery				Rs:	<b>1594.60</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Drilling machine	Hour	2.00	198.90	397.80
2	Crew for Grinding machine	Hour	4.00	198.90	795.60
3	Foreman	Day	2.00	510.00	1020.00
4	Marker / Fabricator / Erector	Day	3.00	550.00	1650.00
5	Gas cutter	Day	1.00	445.00	445.00
6	Welder ( General )	Day	4.00	445.00	1780.00
7	Mazdoors	Day	4.00	350.00	1400.00
8	Helper fabrication / erection	Day	6.00	400.00	2400.00
Total cost of Labour				Rs:	<b>9888.40</b>

labour component/unit qty 9888.40

Add contractor's profit and overhead charges 13.615% 1346.30

labour component/unit qty (including contractor's profit) **11234.70****ABSTRACT:**

A. Cost of Materials	Rs: 15904.70
B. Hire charges of Machinery	Rs: 1594.60
C. Cost of Labour	Rs: 9888.40
D. Add for excise duty (on 75 percent cost excluding cost of materials)	Total 0.00% Total Rs: 27387.70
E. Add for transportation upto work site @	3% Rs: 0.00 Rs: 27387.70 Rs: 821.63

	Total	Rs: 28209.33
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615%	Rs: 3840.70
Add 2 leads		
Add 1 km lead charges for fabricated parts	I 19.00 per tonne	6.118
Unloading charges of fabricated parts Rs	74.80 per tonne	24.086
Total cost for	0.161 tonne	Rs: 32080.24
	Rate per tonne	Rs: 199256.10

## IRR-GAW-3 SAND BLASTING AND PAINTING AS PER IS:14177-1994

IRR-GAW-3-1 Cleaning gates / hoists / embedded parts/lifting beams etc, to expose fresh metal surface for painting by sand blasting method as per specifications including cost of all materials, I abour, machinery, scaffolding, etc., complete with initial lead for sand upto 1 km and all lifts.

DATA:

RATE ANALYSIS UNIT : 100 sqm

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Sand (Screened)	cum	30.00	165.00	4950.00
2	Use rate of air hose	Hour	8.00	18.75	150.00
3	Use rate of sand blast gun nozzle	Hour	8.00	3.50	28.00
4	Sundries( Rust inhibitive, seive etc )	LS	5.00	30.00	150.00
	Total				5278.00
	Add 10% towards scaffolding/laddor @			0.10	527.80
	Total cost of Materials				<b>5805.80</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Air compressor 7 cmm diesel	Hour	8.00	241.30	1930.40
	Fuel / Energy charges	Hour	8.00	714.00	5712.00
2	Sand blasting equipment	Hour	8.00	110.10	880.80
	Fuel / Energy charges	Hour	8.00	0.00	0.00
	Total hire charges of Machinery				<b>8523.20</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Air compressor	Hour	8.00	210.90	1687.20
2	Crew for Sand blasting equipment	Hour	8.00	219.70	1757.60
3	mazdoor	Day	15.00	350.00	5250.00
	Total cost of Labour				<b>8694.80</b>

labour component/unit qty 86.90

Add contractor's profit and overhead charges 13.615% 11.80

labour component/unit qty (including contractor's profit) **98.70****ABSTRACT:**

A. Cost of Materials	Rs: 5805.80
B. Hire charges of Machinery	Rs: 8523.20
C. Cost of Labour	Rs: 8694.80
D. Add for excise duty	Total 0.00% Rs: 0.00
(on 75 percent cost excluding cost of materials)	Total Rs: 23023.80
E. Add for transportation upto work site @	3% Rs: 690.71
	Total Rs: 23714.51
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615% Rs: 3228.73
Total cost for	100.00 sqm Rate per sqm Rs: 26943.25
	Rs: <b>269.40</b>

IRR-GAW-3-2 painting of embedded metal parts and all types of gates, stoplogs,etc, on sand blasted surfaces with one coat of inorganic zinc silicate (airless spray preferred)70+- 5

and two super coats with a total thickness of 300 microns

(each 150+- 5) of solventless coaltar epoxy paint each coat 150 microns ( total 300 microns)

cost of all materials, labour, scaffolding etc., complete with all leads and

all lifts

(Upstream surface of gates portion may be painted with solventless coaltar epoxy brown paint

**instead of solventless coaltar black. The rate for coaltar epoxy brown shall be adopted in data for Upstream side painting)**

DATA: Consider 100 sqm area for painting:  
Requirement of materials :

Theoretical spreading rate per one Coat of Paint 25 Sqm/Hr  
Assume Losses at 30% of the spreading area (as per field observations)

Actual Spreading Area	17.50	Sqm/Hr
Total time required for 100 Sqm Area	5.71	Hr
Say	6	Hr

DATA: **RATE ANALYSIS** UNIT : **100 sqm**

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	inorganic zinc silicate	ltr	12.00	620.00	7440
2	Thinner @ 10%	ltr	1.20	100.00	120
3	Solventless Coal tar epoxy paint	ltr	40.00	260.00	10400
4	Thinner @ 10%	ltr	4.00	100.00	400
5	Sundries ( brushes,ladders,platforms etc )		3.00	30.00	90
Total cost of Materials				Rs:	<b>18450.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hire Charges of Airless Spray Gun	hr	6.00	121.40	728.40
2	Hire Charges of Air Compressor-7 Cmm (diesel)	hr	6.00	241.30	1447.80
3	Fuel Charges of Air Compressor	hr	6.00	714.00	4284.00
Total cost of Machinery				Rs:	<b>6460.20</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew Charges of Air Compressor	Day	6.00	210.90	1265.40
2	Painter Class-I	Day	20.00	510.00	10200.00
3	Helper	Day	20.00	350.00	7000.00
Total cost of Labour				Rs:	<b>18465.40</b>

labour component/unit qty 184.70  
Add contractor's profit and overhead charges 13.615% 25.10  
labour component/unit qty (including contractor's profit) 209.80

**ABSTRACT:**

A. Cost of Materials		Rs:	18450.00
B. Hire charges of Machinery		Rs:	6460.20
C. Cost of Labour		Rs:	<u>18465.40</u>
D. Add for excise duty	Total	Rs:	43375.60
(on 75 percent cost excluding cost of materials)	0	Rs:	0.00
E. Add for transportation upto work site @	Total	Rs:	<u>43375.60</u>
	0.03	Rs:	1301.27
F. Add for contractor's profit and overheads on (A+B+C+D+E)	Total	Rs:	44676.87
13.615%		Rs:	6082.76
Total cost fc 100.00 sqm		Rs:	<u>6082.76</u>
Rate per sqm		Rs:	50759.62
		Rs:	<b>507.60</b>

IRR-GAW-3-3

**painting of Lifting beams,cat walks and other similar structures-painting hoist machinery,**  
on sand blasted surfaces with two coats of zinc phosphate primer (airless spray preferred)  
40microns/coat and two coats of alkyd based micaceous iron oxide paint , 65 microns/coat  
cost of all materials, labour, scaffolding etc., complete **with all leads and all lifts**

DATA: Consider 100 sqm area for painting:  
Requirement of materials :

Theoretical spreading rate per one Coat of Paint 25 Sqm/Hr  
Assume Losses at 30% of the spreading area (as per field observations)

Actual Spreading Area	17.50	Sqm/Hr
Total time required for 100 Sqm Area	5.71	Hr
Say	6	Hr

DATA: **RATE ANALYSIS** UNIT : **100 sqm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	zinc phosphate primer	ltr	28.00	223.00	6244
2	Thinner@10%	ltr	2.80	100.00	280
3	alkyd based micaceous iron oxide paint	ltr	20.00	185.00	3700
4	Thinner@10%	ltr	2.00	100.00	200
5	Sundries ( brushes,ladders,platforms etc )		3.00	30.00	90
Total cost of Materials				Rs:	<b>10514.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hire Charges of Airless Spray Gun	hr	6.00	121.40	728.40
	Hire Charges of Air Compressor-7 Cmm (diesel)	hr	6.00	241.30	1447.80
3	Fuel Charges of Air Compressor	hr	6.00	714.00	4284.00
Total cost of machinery				RS:	<b>6460.20</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew Charges of Air Compressor	Day	6.00	210.90	1265.40
2	Painter Class-I	Day	15.00	510.00	7650.00
3	Helper	Day	15.00	350.00	5250.00
Total cost of Labour				Rs:	<b>14165.40</b>

labour component/unit qty 141.70

Add contractor's profit and overhead charges 13.615% 19.30

labour component/unit qty (including contractor's profit) **161.00****ABSTRACT:**

A. Cost of Materials		Rs:	10514.00
B. Hire charges of Machinery		Rs:	6460.20
C. Cost of Labour		Rs:	14165.40
D. Add for excise duty	Total	Rs:	31139.60
(on 75 percent cost excluding cost of materials)	0	Rs:	0.00
E. Add for transportation upto work site @	Total	Rs:	31139.60
	0.03	Rs:	934.19
F. Add for contractor's profit and overheads on (A+B+C+D+E)	Total	Rs:	32073.79
Total cost for	13.615% 100.00 sqm	Rs:	4366.85 4366.85
		Rs:	36440.63
	Rate per sqm	Rs:	<b>364.40</b>

**IRR-GAW-3-4 HOISTS:STRUCTURAL COMPONENTS--painting structurals on sand blasted surfaces with**

two coats of zinc phosphate primer (airless spray preferred) 40microns/coat

and one coat 65+-5 of alkyd based micaceous iron oxide paint

followed by two coats of synthetic enamel paint 25 microns/coat

cost of all materials, labour, scaffolding etc., complete with all leads and

**all lifts**

DATA: Consider 100 sqm area for painting:

Requirement of materials :

Theoretical spreading rate per one Coat of Paint 25 Sqm/Hr  
Assume Losses at 30% of the spreading area (as per field observations)

Actual Spreading Area	17.50	Sqm/Hr
Total time required for 100 Sqm Area	5.71	Hr
Say	6	Hr

DATA: **RATE ANALYSIS** UNIT : **100 sqm****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	zinc phosphate primer	ltr	28.00	223.00	6244
2	Thinner@10%	ltr	2.80	100.00	280
3	alkyd based micaceous iron oxide paint	ltr	15.00	185.00	2775
4	Thinner@10%	ltr	1.50	100.00	150
5	synthetic enamel paint	ltr	17.00	260.00	4420
6	Thinner@10%	ltr	1.70	100.00	170
7	Sundries ( brushes,ladders,platforms etc )		3.00	30.00	90
Total cost of Materials				Rs:	<b>14129.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hire Charges of Airless Spray Gun	hr	6.00	121.40	728.40
2	Hire Charges of Air Compressor-7 Cmm (diesel)	hr	6.00	241.30	1447.80
3	Fuel Charges of Air Compressor	hr	6.00	714.00	4284.00
Total cost of Machinery				Rs:	<b>6460.20</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew Charges of Air Compressor	Day	6.00	210.90	1265.40
2	Painter Class-I	Day	20.00	510.00	10200.00
3	Helper	Day	20.00	350.00	7000.00
Total cost of Labour				Rs:	<b>18465.40</b>

labour component/unit qty 184.70  
 Add contractor's profit and overhead charges 13.615% 25.10  
 labour component/unit qty (including contractor's profit) **209.80**

**ABSTRACT:**

A. Cost of Materials	Rs:	14129.00
B. Hire charges of Machinery	Rs:	6460.20
C. Cost of Labour	Rs:	18465.40
	Total	39054.60
D. Add for excise duty (on 75 percent cost excluding cost of materials)	0	0.00
E. Add for transportation upto work site @	Total	39054.60
	0.03	1171.64
	Total	40226.24
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615%	5476.80
Total cost for	100.00 sqm	5476.80
	Rate per sqm	45703.04
		<b>457.00</b>

**IRR-GAW-3-5 HOISTS:machineryCOMPONENTS--painting hoist machinery, on sand blasted surfaces with one coats of zinc phosphate primer (airless spray preferred) 50microns/coat and three coats of aluminium paint or synthetic enamel , 25 microns/coat cost of all materials, labour, scaffolding etc., complete with all leads and all lifts**

DATA: Consider 100 sqm area for painting:  
 Requirement of materials :

Theoretical spreading rate per one Coat of Paint 25 Sqm/Hr  
 Assume Losses at 30% of the spreading area (as per field observations)

Actual Spreading Area 17.50 Sqm/Hr  
 Total time required for 100 Sqm Area 5.71 Hr  
 Say 6 Hr

DATA: **RATE ANALYSIS** UNIT : **100 sqm**

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	zinc phosphate primer	ltr	14.00	223.00	3122
2	Thinner@10%	ltr	1.40	100.00	140
3	aluminium paint or synthetic enamel per coat	ltr	26.00	260.00	6760

4	Thinner@10%	Itr	2.60	100.00	260
5	Sundries ( brushes,ladders,platforms etc )		3.00	30.00	90
			Total cost of Materials		
			Rs: 10372.00		

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hire Charges of Airless Spray Gun	Hr	6.00	121.40	728.40
2	Hire Charges of Air Compressor-7 Cmm (diesel)	Hr	6.00	241.30	1447.80
3	Fuel Charges of Air Compressor	Hr	6.00	714.00	4284.00
			Total cost of Machinery		
			Rs: 6460.20		

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew Charges of Air Compressor	Day	6.00	210.90	1265.40
2	Painter Class-I	Day	20.00	510.00	10200.00
3	Helper	Day	20.00	350.00	7000.00
			Total cost of Labour		
			Rs: 18465.40		

labour component/unit qty 184.70  
 Add contractor's profit and overhead charges 13.615% 25.10  
 labour component/unit qty (including contractor's profit) **209.80**

**ABSTRACT:**

A. Cost of Materials		Rs: 10372.00
B. Hire charges of Machinery		Rs: 6460.20
C. Cost of Labour		Rs: 18465.40
D. Add for excise duty	Total	Rs: 35297.60
(on 75 percent cost excluding cost of materials)	0	Rs: 0.00
E. Add for transportation upto work site @	Total	Rs: 35297.60
	0.03	Rs: 1058.93
F. Add for contractor's profit and overheads on (A+B+C+D+E)	Total	Rs: 36356.53
Total cost for	13.615% 100.00 sqm	Rs: 4949.94
	Rate per sqm	Rs: 41306.47
		Rs: 413.10

IRR-GAW-4

**PAINTING WITHOUT SAND BLASTING****IRR-GAW-4-1 E.M Parts OF ALL TYPES OF GATES**

Surface cleaning of metal surfaces by chemical cleaners and then by hand and power tool cleaners and removing dust. After cleaning, applying primary coat with **one** coat of **Protective Mastic** to a thickness of  $70\pm 5$  microns, followed by finishing coats **2 coats** with Solventless Coal tar epoxy each coat with a DFT of  $150\pm 5$  microns and total DFT of all coats including Primary coat should not be less than 350 microns with material, labour and all accessories with all leads and lifts  
**(in respect of Heavily rusted (30 to 40% rusted) surfaces)**

DATA: Consider 100 sqm area for painting:  
 Requirement of materials :

Theoretical spreading rate per one Coat of Paint 25 Sqm/Hr  
 Assume Losses at 30% of the spreading area (as per field observations)

Actual Spreading Area 17.50 Sqm/Hr  
 Total time required for 100 Sqm Area 5.71 Hr  
 Say 6 Hr

DATA: **RATE ANALYSIS** UNIT : **100.000 Sq.m**

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rust cleaner / inhibitor	Itr	13	130	1690.00
2	Protective Mastic	Itr	25	480	12000.00
3	Thinner@10%	Itr	2.5	100.00	250.00
4	Solventless Coal tar epoxy paint	Itr	40.00	260.00	10400.00
5	Thinner@10%	Itr	4	100.00	400.00
6	Wire brush	Nos	2	41.00	82.00
7	Sundries	LS	3.00	30.00	90.00
			Total cost of Materials		
			Rs: 24912.00		

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hire Charges of Airless Spray Gun	Hr	6.00	121.40	728.40
2	Hire Charges of Air Compressor-7 Cmm (diesel)	Hr	6.00	241.30	1447.80
3	Fuel Charges of Air Compressor	Hr	6.00	714.00	4284.00
Total cost of Machinery					<b>6460.20</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew Charges of Air Compressor	Day	6.00	210.90	1265.40
2	Painter Class-I	Day	20.00	510.00	10200.00
3	Helper	Day	20.00	350.00	7000.00
Total cost of Labour					Rs: <b>18465.40</b>

labour component/unit qty 184.70

Add contractor's profit and overhead charges 13.615% 25.10

labour component/unit qty (including contractor's profit) **209.80****ABSTRACT:**

A. Cost of Materials	Rs: 24912.00
B. Hire charges of Machinery	Rs: 6460.20
C. Cost of Labour	Rs: 18465.40
D. Add for excise duty	Total Rs: 49837.60
(on 75 percent cost excluding cost of materials)	0.00% Rs: 0.00
E. Add for transportation upto work site @	Total Rs: 49837.60
	3% Rs: 1495.13
	Total Rs: 51332.73
F. Add for contractor's profit and overheads on (A+B+C+D+E)	13.615% Rs: 6988.95
Total cost for	100.00 sqm Rs: 58321.68
<b>Rate per sq.meter</b> Rs: <b>583.20</b>	

**IRR-GAW-4-3 HOIST BRIDGES ,HOISTING EQUIPMENT AND CRANES,Etc,**

**Surface cleaning of metal surfaces by chemical cleaners** and then by hand and power tool cleaners and removing dust. After cleaning, applying primary coat with **two** coats of Zinc chromite red oxide primer, followed by finishing coats **3 coats** with synthetic enamel paint with material, labour, and all accessories with all leads and lifts where surface cleaning by sand blasting is not feasible and based on specific recommendations of designers, it is to adopt surface preparation done manually by hand and power tool after cleaning by chemical treatment to remove grease, rust, scaling etc., and to form phosphate coating to prevent further rusting, before applying primer painting.

**DATA:** Consider 100 sqm area for painting:  
Requirement of materials :

Theoretical spreading rate per one Coat of Paint 25 Sqm/Hr  
Assume Losses at 30% of the spreading area (as per field observations)

Actual Spreading Area 17.50 Sqm/Hr  
Total time required for 100 Sqm Area 5.71 Hr  
Say 6 Hr

**DATA:** **RATE ANALYSIS** **UNIT : 100.000 Sq.m**

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rust cleaner / inhibitor	ltr	13	130	1690.00
2	Zinc Chromite Red Oxide Primer	ltr	28	180	5040.00
3	Thinner@10%	ltr	2.8	100.00	280.00
4	Synthetic enamel Paint	ltr	17.00	260.00	4420.00
5	Thinner@10%	ltr	1.7	100.00	170.00
6	Wire brush	Nos	2	41.00	82.00
7	Sundries	LS	3.00	30.00	90.00
Total cost of Materials					<b>11772.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hire Charges of Airless Spray Gun	Hr	6.00	121.40	728.40
2	Hire Charges of Air Compressor-7 Cmm (diesel)	Hr	6.00	241.30	1447.80
3	Fuel Charges of Air Compressor	Hr	6.00	714.00	4284.00
Total cost of Machinery					<b>Rs: 6460.20</b>

**C. LABOUR**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew Charges of Air Compressor	Day	6.00	210.90	1265.40
2	Painter Class-I	Day	20.00	510.00	10200.00
3	Helper	Day	20.00	350.00	7000.00
Total cost of Labour					<b>Rs: 18465.40</b>

labour component/unit qty 184.70  
 Add contractor's profit and overhead charges 13.615% 25.10  
 labour component/unit qty (including contractor's profit) **209.80**

**ABSTRACT:**

A. Cost of Materials	Rs. 11772.00
B. Hire charges of Machinery	Rs. 6460.20
C. Cost of Labour	Rs. 18465.40
D. Add for excise duty (on 75 percent cost excluding cost of materials)	Total 0.00% Rs: 36697.60
E. Add for transportation upto work site @	Total 3% Rs: 36697.60
F. Add for contractor's profit and overheads on (A+B+C+D+E)	Total 13.615% Rs: 5146.27
Total cost for	100.00 sqm Rs: 42944.80
	<b>Rate per sq.meter 429.40</b>

**WALK WAYS( CAT WALKS), LIFTING BEAMS,etc,**

IRR-GAW-4-4

**Surface cleaning of metal surfaces by chemical cleaners** and then by hand and power tool cleaners and removing dust. After cleaning, applying primary coat with **one** coat of Zinc rich epoxy primer to a thickness of 40 microns ,followed by finishing coats **2 coats** with Solventless Coal tar epoxy with material, labour and all accessories **with all leads and lifts**

DATA: Consider 100 sqm area for painting:

Requirement of materials :

Theoretical spreading rate per one Coat of Paint 25 Sqm/Hr  
 Assume Losses at 30% of the spreading area (as per field obserations)

Actual Spreading Area 17.50 Sqm/Hr  
 Total time required for 100 Sqm Area 5.71 Hr  
 Say 6 Hr

DATA:

**RATE ANALYSIS**UNIT : **100.000 Sq.m****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rust cleaner / inhibitor	Itr	13	130	1690.00
2	Zinc rich epoxy primer	Itr	14	700	9800.00
3	Thinner@10%	Itr	1.4	100.00	140.00
4	Solventless Coal tar epoxy paint	Itr	40	260	10400.00
5	Thinner@10%	Itr	4	100.00	400.00
6	Wire brush	Nos	2	41	82.00
7	Sundries	LS	3	30	90.00
Total cost of Materials					<b>Rs: 22602.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Hire Charges of Airless Spray Gun	Hr	6.00	121.40	728.40
2	Hire Charges of Air Compressor-7 Cmm (diesel)	Hr	6.00	241.30	1447.80
3	Fuel Charges of Air Compressor	Hr	6.00	714.00	4284.00
Total cost of Machinery					<b>Rs: 6460.20</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew Charges of Air Compressor	Day	6.00	210.90	1265.40
2	Painter Class-I	Day	13.00	510.00	6630.00
3	Helper	Day	13.00	350.00	4550.00
Total cost of Labour				Rs:	<b>12445.40</b>

labour component/unit qty 124.50

Add contractor's profit and overhead charges 13.615% 17.00

labour component/unit qty (including contractor's profit) **141.50****ABSTRACT:**

A. Cost of Materials	Rs: 22602.00
B. Hire charges of Machinery	Rs: 6460.20
C. Cost of Labour	Rs: 12445.40
D. Add for excise duty (on 75 percent cost excluding cost of materials)	Total 0.00% Rs: 41507.60
E. Add for transportation upto work site @	Total 3% Rs: 1245.23
F. Add for contractor's profit and overheads on (A+B+C+D+E)	Total 13.615% 100.00 sqm Rate per sq.meter Rs: 5820.80
Total cost for	Rs: 48573.63
	Rs: <b>485.70</b>

## CHAPTER-VI

## PRELIMINARY AND MAINTENANCE WORKS - Standard Data

(STORED WITH E-N-C &amp; TO INCORPORATE CHANGES YEARLY/ AS NEEDED)

For the Year:2016-17

Index- code
IRR-PMW

## PRELIMINARY &amp; MAINTENANCE WORKS - DATA RATES

**Directions to add Seigniorage Charges and Additional Lead Charges****Seigniorage Charges:**

1. The unit rate for work item in the Standard Data is **exclusive of Seigniorage Charges** wherever applicable.
2. The appropriate Seigniorage Charges for relevant materials are to be added to the Unit rate of work item while preparing the estimate. (i.e., to the data itself)
3. The Provision towards Contractor's Profit and Overhead charges **should not be operated on** the Seigniorage Charges while adding Seigniorage Charges to the data in the estimate

**Additional Lead and Lift Charges:**

1. Unless otherwise specified the basic rates are inclusive of all lifts.
2. For concrete, masonry and reinforcement items **wherever** initial lead of 1km is considered in the basic rate, the additional lead as follows:

Additional lead charges for Steel, sand, coarse aggregate, stones and stone chips shall be worked out for total lead involved and 1 km lead charges included in basic rate shall be deducted from total lead charges. No loading and unloading charges shall be allowed for any item.

In case of Cement and Steel, Loading and unloading charges are already added in the work item while arriving the unit rate and hence should not be added again

Example:

Total lead for sand from approved sand quarry :	15 Km
Initial lead included in the basic rate in the SR :	1 Km
Additional lead charges :	Lead char Rs. 84.00
	Lead charges for next 1 Rs. 126
	Total lead charges for 1 Rs. 210.00
	Less 1 km initial lead ch Rs. 31.50 (-)
	Net additional lead char Rs. 178.50

3. The Leads for Steel shall be from the nearest market place to the Project area

4. For earth/rockfill embankments **wherever** initial lead of 1km is considered in the basic rate, the additional lead charges are to be added as follows:

Additional lead charges for Earth, Murrum etc., shall be worked out for total lead involved and 1 km lead charges included in basic rate shall be deducted from total lead charges. No loading and unloading charges shall be allowed for any item.  
(same as above)

Example:

Total lead for earth from approved borrow area :	15 Km
Initial lead included in the basic rate in the SR :	1 Km
Additional lead charges :	Lead char Rs. 84.00
	Lead charges for next 1 Rs. 126
	Total lead charges for 1 Rs. 210.00
	Less 1 km initial lead ch Rs. 31.50 (-)
	Net additional lead char Rs. 178.50

5. The initial lead up to 50 m as mentioned in some standard data items is meant for manual lead within the working area. For conveyance of materials, the lead required from quarry/Borrow area/ Dump Area to worksite shall be added to the data without deducting the 50 m initial lead charges

**PMW - Work Items****IRR-PMW-1 JUNGLE CLEARANCE :**

**IRR-PMW-1-1 Clearing thin jungle growth ( more than 50 percent open space ) including bushes upto 30 cm / parthenium and other weeds** including burning or disposing off the same as directed etc., complete.

DATA:

**RATE ANALYSIS**

UNIT :

**1000 sqm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total cost of Materials			Rs:	<b>0.00</b>	

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery			Rs:	<b>0.00</b>	

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.50	450.00	225.00
2	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour			Rs:	<b>1275.00</b>	

labour component/unit qty 1.30

Add contractor's profit and overhead charges 13.615% 0.20

labour component/unit qty (including contractor's profit) **1.50**

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1275.00
Total	<u>Rs: 1275.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 173.59125
Total cost for 1000.00 sqm	Rs: 1448.59
Rate per sqm (A+B+C+D)/1000.00	Rs. 1.40

IRR-PMW-1-2 **Clearing thick jungle growth ( less than 50 percent open space ) including bushes upto 30 cm / parthenium and other weeds** including burning or disposing off the same as directed etc., complete.

DATA:

**RATE ANALYSIS**

UNIT : **1000 sqm**

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total cost of Materials			Rs:	<b>0.00</b>	

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery			Rs:	<b>0.00</b>	

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.50	450.00	225.00
2	mazdoor	Day	5.00	350.00	1750.00
Total cost of Labour			Rs:	<b>1975.00</b>	

labour component/unit qty 2.00

Add contractor's profit and overhead charges 13.615% 0.30

labour component/unit qty (including contractor's profit) **2.30**

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1975.00
Total	<u>Rs: 1975.00</u>

D. Add for contractor's profit and overheads on

(A+B+C)		13.615%	Rs:	268.89625
Total cost for	1000.00	sqm	Rs:	2243.90
<b>Rate per sqm</b>		(A+B+C+D)/1000.0	Rs.	<b>2.20</b>

IRR-PMW-1-3

**Removing stumps, tree roots, roots of bamboo clusters etc., upto 1.50 m girth**

including excavation, stacking the materials neatly and levelling the surface etc., complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS**

UNIT :

**18 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.25	450.00	112.50
2	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	<b>812.50</b>

labour component/unit qty 45.10

Add contractor's profit and overhead charges 13.615% 6.10

labour component/unit qty (including contractor's profit) **51.20****ABSTRACT:**

A. Cost of Materials Rs: 0.00

B. Hire charges of Machinery Rs: 0.00

C. Cost of Labour Rs: 812.50

Total Rs: 812.50

D. Add for contractor's profit and overheads on

(A+B+C) 13.615% Rs: 110.621875

Total cost for 18.00 Nos. Rs: 923.12

**Rate per each** (A+B+C+D)/18.0 Rs. **51.30**

IRR-PMW-1-4

**Removing stumps, tree roots, roots of bamboo cluster etc., with girth above 1.50 m**

and upto 3.0 m including excavation, stacking the materials neatly and levelling the area etc., complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS**

UNIT :

**8 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Preliminary and Maintenance Works - Item Unit Rates 2016-17	
				Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.25	450.00	112.50
2	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	<b>812.50</b>

labour component/unit qty 101.56

Add contractor's profit and overhead charges 13.615% 13.83

labour component/unit qty (including contractor's profit) **115.40**

#### ABSTRACT:

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	812.50
Total	Rs:	<u>812.50</u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs:	110.621875
Total cost for 8.00 Nos. Rs:		<b>923.10</b>
Rate per each (A+B+C+D)/8.0 Rs.		<b>115.40</b>

IRR-PMW-1-5

#### Removing stumps, tree roots, roots of bamboo cluster etc., with girth

above 3.0 m and upto 5.0 m including excavation, stacking the materials neatly and levelling the area etc., complete with initial lead upto 50 m and all lifts.

DATA:

#### RATE ANALYSIS

UNIT :

5 Nos.

#### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total cost of Materials				Rs:	<b>0.00</b>

#### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

#### C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.50	450.00	225.00
2	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>1625.00</b>

labour component/unit qty 325.00

Add contractor's profit and overhead charges 13.615% 44.20

labour component/unit qty (including contractor's profit) **369.20**

#### ABSTRACT:

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1625.00
Total	Rs:	<u>1625.00</u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs:	221.24375
Total cost for 5.00 Nos. Rs:		<b>1846.24</b>
Rate per each (A+B+C+D)/5.0 Rs.		<b>369.20</b>

IRR-PMW-1-6

**Additional rate for every 0.5 m increase in girth** of tree stump / stumps of bamboo cluster beyond 5 m.

DATA:

#### RATE ANALYSIS

UNIT :

7 Nos.

#### A. MATERIALS:

Sl No	particulars	Unit	Quantity	Preliminary and Maintenance Works - Item Unit Rates 2016-17	
				Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.22	450.00	99.00
2	mazdoor	Day	0.88	350.00	306.25
	Total cost of Labour			Rs:	<b>405.25</b>

labour component/unit qty 57.90

Add contractor's profit and overhead charges 13.615% 7.90

 labour component/unit qty (including contractor's profit) **65.80**
**ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	405.25
	Total	Rs: 405.25
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 55.1747875
Total cost for Rate per each	7.00 Nos.	Rs: <b>460.42</b>
	(A+B+C+D)/7.0	Rs. <b>65.80</b>

IRR-PMW-1-7    **Cutting and stacking bamboos** excluding removing stumps and roots etc., complete with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS**

UNIT :

150 Nos.

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.50	450.00	225.00
2	mazdoor	Day	5.00	350.00	1750.00
	Total cost of Labour			Rs:	<b>1975.00</b>

labour component/unit qty 13.17

Add contractor's profit and overhead charges 13.615% 1.79

 labour component/unit qty (including contractor's profit) **15.00**
**ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1975.00

Total	Rs:	1975.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 268.89625
Total cost for	150.00 Nos.	Rs: 2243.90
Rate per each	(A+B+C+D)/150.0	Rs. 15.00

IRR-PMW-1-8 **Cutting and removing jauniflora bushes upto 1.5 m girth** excluding removal of stumps and including burning or disposing off the materials as directed **with initial lead upto 50 m and all lifts.**

DATA: **RATE ANALYSIS** UNIT : **100 Nos.**

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.50	450.00	225.00
2	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour				Rs:	<b>1275.00</b>

labour component/unit qty 12.80

Add contractor's profit and overhead charges 13.615% 1.70

labour component/unit qty (including contractor's profit) **14.50**

**ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1275.00
Total	Rs:	1275.00

D. Add for contractor's profit and overheads on

(A+B+C) 13.615% Rs: 173.59125

Total cost for 100.00 Nos Rs: 1448.59

Rate per each (A+B+C+D)/100.0 Rs. 14.50

IRR-PMW-1-9 **Cutting and removing jauniflora bushes above 1.5 m upto 3.0 m girth** excluding removal of stumps and including burning or disposing off the materials as directed **with initial lead upto 50 m and all lifts.**

DATA: **RATE ANALYSIS** UNIT : **50 Nos**

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Preliminary and Maintenance Works - Item Unit Rates 2016-17	
				Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.50	450.00	225.00
2	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour				Rs:	<b>1275.00</b>

labour component/unit qty 25.50  
 Add contractor's profit and overhead charges 13.615% 3.50  
 labour component/unit qty (including contractor's profit) **29.00**

#### ABSTRACT:

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1275.00
Total	Rs:	<u>1275.00</u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs:	173.59125
Total cost for 50.00 Nos	Rs:	<b>1448.59</b>
Rate per each (A+B+C+D)/50.0	Rs.	<b>29.00</b>

- IRR-PMW-1-10 **Cutting trees above 0.3 m and upto 0.6 m girth** excluding removal of stumps and including stacking the materials neatly as directed **with initial lead upto 50 m and all lifts.**

DATA:

#### RATE ANALYSIS

UNIT :

14 Nos.

#### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of ropes etc	LS	0.25	150.00	37.50
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>37.50</b>

#### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

#### C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.25	450.00	112.50
2	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour				Rs:	<b>1162.50</b>

labour component/unit qty 83.00  
 Add contractor's profit and overhead charges 13.615% 11.30  
 labour component/unit qty (including contractor's profit) **94.30**

#### ABSTRACT:

A. Cost of Materials	Rs:	37.50
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1162.50
Total	Rs:	<u>1200.00</u>
D. Add for contractor's profit and overheads on (A+B+C) 13.615%	Rs:	163.38
Total cost for 14.00 Nos	Rs:	<b>1363.38</b>
Rate per each (A+B+C+D)/14.0	Rs.	<b>97.40</b>

- IRR-PMW-1-11 **Cutting trees above 0.6 m and upto 1.2 m girth** excluding removal of stumps and including stacking the materials neatly as directed **with initial lead upto 50 m and all lifts.**

DATA:

#### RATE ANALYSIS

UNIT :

4 Nos.

#### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.

Preliminary and Maintenance Works - Item Unit Rates 2010-17					
1	Use rate of ropes etc	LS	0.25 0.00	150.00 0.00	37.50 0.00
Total cost of Materials			Rs:		<b>37.50</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery			Rs:		<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.25	450.00	112.50
2	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour			Rs:		<b>1162.50</b>

labour component/unit qty 290.60

Add contractor's profit and overhead charges 13.615% 39.60

 labour component/unit qty (including contractor's profit) **330.20**
**ABSTRACT:**

A. Cost of Materials	Rs:	37.50
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1162.50
Total	Rs:	1200.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 163.38
Total cost for Rate per each	4.00 Nos.	Rs: 1363.38
	(A+B+C+D)/4.0	Rs. 340.80

IRR-PMW-1-12 **Cutting trees above 1.2 m and upto 1.8 m girth** excluding removal of stumps and including stacking the materials neatly as directed **with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

2 Nos.

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of ropes etc	LS	0.25 0.00	150.00 0.00	37.50 0.00
Total cost of Materials			Rs:		<b>37.50</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery			Rs:		<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.25	450.00	112.50
2	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour			Rs:		<b>1162.50</b>

labour component/unit qty 581.30

Add contractor's profit and overhead charges 13.615% 79.10

 labour component/unit qty (including contractor's profit) **660.40**
**ABSTRACT:**

A. Cost of Materials	Rs:	37.50
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1162.50
Total	Rs:	1200.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 163.38
Total cost for	2.00 Nos.	Rs: 1363.38

Rate per each

(A+B+C+D)/2.0

Preliminary and Maintenance Works - Item Unit Rates 2016-17  
**681.70**

**IRR-PMW-1-13 Cutting trees above 1.8 m and upto 2.4 m girth excluding removal of stumps and including stacking the materials neatly as directed with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**1 No.****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of ropes etc	LS	0.25 0.00	150.00 0.00	37.50 0.00
Total cost of Materials				Rs:	<b>37.50</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.25	450.00	112.50
2	mazdoor	Day	3.00	350.00	1050.00
Total cost of Labour				Rs:	<b>1162.50</b>

labour component/unit qty 1162.50

Add contractor's profit and overhead charges 13.615% 158.30

labour component/unit qty (including contractor's profit) **1320.80****ABSTRACT:**

A. Cost of Materials	Rs:	37.50
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	1162.50
Total	Rs:	1200.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	163.38
Total cost for	1.00 No.	1363.38
<b>Rate per each</b>	(A+B+C+D)/1.0	<b>1363.40</b>

**IRR-PMW-1-14 Cutting trees above 2.4 m and upto 3.0 m girth excluding removal of stumps and including stacking the materials neatly as directed with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**1 Nos.****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of ropes etc	LS	0.50 0.00	150.00 0.00	75.00 0.00
Total cost of Materials				Rs:	<b>75.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.25	450.00	112.50

2	mazdoor	Day	Preliminary and Maintenance Works - Item Unit Rates 2016-17
		Total cost of Labour	Rs: <b>1862.50</b>

labour component/unit qty 1862.50

Add contractor's profit and overhead charges 13.615% 253.60

labour component/unit qty (including contractor's profit) **2116.10**

**ABSTRACT:**

A. Cost of Materials	Rs: 75.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1862.50
Total	Rs: 1937.50
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 263.790625
Total cost for Rate per each	1.00 Nos. Rs: <b>2201.29</b> (A+B+C+D)/1.0 Rs. <b>2201.30</b>

IRR-PMW-1-15 Additional rate for cutting tree for every 0.5 m increase in girth of tree beyond 3 m.

DATA:

**RATE ANALYSIS**

UNIT :

1 No

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of ropes etc	LS	0.15 0.00	150.00 0.00	22.50 0.00
Total cost of Materials				Rs:	<b>22.50</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.10	450.00	45.00
2	mazdoor	Day	1.75	350.00	612.50
Total cost of Labour				Rs:	<b>657.50</b>

labour component/unit qty 657.50

Add contractor's profit and overhead charges 13.615% 89.50

labour component/unit qty (including contractor's profit) **747.00**

**ABSTRACT:**

A. Cost of Materials	Rs: 22.50
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 657.50
Total	Rs: 680.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 92.582
Total cost for Rate per each	1.00 No. Rs: <b>772.58</b> (A+B+C+D)/1.0 Rs. <b>772.60</b>

IRR-PMW-1-16 Cutting and burning or disposing off Apu / Jondu from marshy areas as directed with initial lead upto 50 m and all lifts.

DATA:

**RATE ANALYSIS**

UNIT :

1000 sqm

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
			Total hire charges of Machinery	Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	12.00	350.00	4200.00
			Total cost of Labour	Rs:	<b>4650.00</b>

labour component/unit qty 4.70

Add contractor's profit and overhead charges 13.615% 0.60

labour component/unit qty (including contractor's profit) **5.30****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	4650.00
	Total	Rs: <u>4650.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	633.0975
Total cost for Rate per sqm	1000.00 sqm Rs:	<b>5283.10</b>
	(A+B+C+D)/1000.0 Rs.	<b>5.30</b>

**IRR-PMW-2 PRELIMINARY WORKS :**

IRR-PMW-2-1 **Earthwork excavation for trial pits / borrow pits** and other investigation works in all kinds of soil including boulders **upto 30 cm dia** and disposing off excavated soil as directed with lead **upto 10 m and lift upto 3 m.**

DATA:

**RATE ANALYSIS**

UNIT :

**10 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
			Total cost of Materials	Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
			Total hire charges of Machinery	Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.50	450.00	225.00
2	mazdoor	Day	6.00	350.00	2100.00
			Total cost of Labour	Rs:	<b>2325.00</b>

labour component/unit qty 232.50

Add contractor's profit and overhead charges 13.615% 31.65

labour component/unit qty (including contractor's profit) **264.20****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	2325.00
	Total	Rs: <u>2325.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	316.54875
Total cost for	10.00 cum Rs:	<b>2641.55</b>

Rate per cum

(A+B+C+D)/100.0

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**264.20**

IRR-PMW-2-2

**Earthwork excavation for trial pits / borrow pits** and other investigation works in **soft rock** including disposing off the excavated rock as directed with **lead upto 10 m and lift upto 3 m.**

DATA:

**RATE ANALYSIS**

UNIT :

**10 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
			Total cost of Materials	Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
			Total hire charges of Machinery	Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	0.50	450.00	225.00
2	Crowbarman	Day	1.00	400.00	400.00
3	mazdoor	Day	7.50	350.00	2625.00
			Total cost of Labour	Rs:	<b>3250.00</b>

labour component/unit qty 325.00

Add contractor's profit and overhead charges 13.615% 44.20

labour component/unit qty (including contractor's profit) **369.20****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	3250.00
	Total	Rs: 3250.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 442.4875
Total cost for 10.00 cum	Rs:	<b>3692.49</b>
<b>Rate per cum</b>	(A+B+C+D)/10.0	Rs. <b>369.20</b>

IRR-PMW-2-3

**Conducting geophysical investigation studies by electrical resistivity method** in stages of 5m for sub-surface details such as depth of formations, shear zones, classification of strata, depth of water table etc., including cost of all materials, equipments, labour, analysing and reporting the details of field studies conducted etc., complete excluding cost of transportation arrangements.

DATA:

**RATE ANALYSIS**

UNIT :

**20 Stages****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Sundries ( misc. consumables )		5.00 0.00	30.00 0.00	150.00 0.00
			Total cost of Materials	Rs:	<b>150.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Electric resistivity meter	Hour	8.00	99.00	792.00
	Battery / charging cost etc @ 20%				158.40
			Total hire charges of Machinery	Rs:	<b>950.40</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Geophysist / Geologist	Day	2.00	860.00	1720.00

2	Graduate Engineer	Day	Preliminary and Maintenance Works - Item Unit Rates 2016-17	860.00	860.00
3	Lab Assistant	Day		520.00	520.00
4	mazdoor	Day		350.00	1400.00
Total cost of Labour			Rs:	<b>4500.00</b>	
labour component/unit qty			225.00		
Add contractor's profit and overhead charges			13.615% 30.60		
labour component/unit qty (including contractor's profit)			<b>255.60</b>		
<b>ABSTRACT:</b>					
A. Cost of Materials			Rs:	150.00	
B. Hire charges of Machinery			Rs:	950.40	
C. Cost of Labour			Rs:	4500.00	
		Total	Rs:	<b>5600.40</b>	
D. Add for contractor's profit and overheads on					
(A+B+C)			13.615%	Rs:	762.49446
Total cost for		20.00 Stages	Rs:	<b>6362.89</b>	
Rate per stage		(A+B+C+D)/20.0	Rs.	<b>318.10</b>	

IRR-PMW-2-4 **Drilling 80 mm dia hole through over-burden using casing shoe bit** vertical or inclined upto 10 degrees to vertical as directed including cost of all materials, machinery, labour, water charges, reaming, collection of wash samples at suitable intervals, logging and lebelling, supplying honne wood core box, fixing casing pipes ( excluding cost of casing pipes ) etc., **complete for depth upto 30 m from surface.**

Note: 1. For drilling through over-burden beyond 30 m from surface increase the basic rate per Rm by 10 percent.

Data: **RATE ANALYSIS** UNIT : **3.00 Rm**

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of casing shoe bit	Rm	3.00	116.67	350.00
2	Use rate of reamer shell	Rm	3.00	28.61	85.83
3	Use rate of extension rod set 16.5 m	Rm	3.00	1.75	5.25
4	Use rate of honne core box	Rm	3.00	247.50	742.50
Total cost of Materials				Rs:	<b>1183.58</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Core drilling machine	Hour	1.00	319.00	319.00
	Fuel / Energy charges	Hour	1.00	238.00	238.00
2	5 hp pump ( diesel ) 2 Nos.	Hour	2.00	10.20	20.40
	Fuel / Energy charges	Hour	2.00	79.30	158.60
3	Sundries ( samplers etc )	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>796.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Core drilling machine	Hour	1.00	283.90	283.90
2	Crew for Pump	Hour	2.00	111.10	222.20
3	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour			Rs:	<b>1206.10</b>	

labour component/unit qty 402.00

Add contractor's profit and overhead charges 13.615% 54.70

labour component/unit qty (including contractor's profit) **456.70**

**ABSTRACT:**

A. Cost of Materials Rs: 1183.58

B. Hire charges of Machinery Rs: 796.00

C. Cost of Labour Rs: 1206.10

Total Rs: 3185.68

D. Add for contractor's profit and overheads on

(A+B+C) 13.615% Rs: 433.7303774

Total cost for 3.00 Rm Rs: **3619.41**

Rate per Rm (A+B+C+D)/3.0 Rs. **1206.50**

IRR-PMW-2-5 **Drilling 76 mm dia ( NX ) core hole in hard rock using diamond core bit** vertical / inclined

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upto 10 degree to vertical as directed including cost of all materials, machinery, labour, water charges, collection of core samples, logging and labelling, supplying honne wood core box and redrilling in case of collapse of sides etc., **complete for depth upto 30 m from surface.**

Data:

### RATE ANALYSIS

UNIT :

**3.00 Rm**

#### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of diamond core bit	Rm	3.00	848.00	2544.00
2	Use rate of reamer shell	Rm	3.00	85.83	257.50
3	Use rate of double tube core barrel	Rm	3.00	226.13	678.40
4	Use rate of extension rod set 16.5 m	Rm	3.00	23.32	69.96
5	Use rate of honne core box	Rm	3.00	556.88	1670.63
Total cost of Materials				Rs:	<b>5220.49</b>

#### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Core drilling machine	Hour	8.00	319.00	2552.00
	Fuel / Energy charges	Hour	8.00	238.00	1904.00
2	5 hp pump ( diesel ) 2 Nos.	Hour	16.00	10.20	163.20
	Fuel / Energy charges	Hour	16.00	79.30	1268.80
3	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>6038.00</b>

#### C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Core drilling machine	Hour	8.00	283.90	2271.20
2	Crew for Pump	Hour	16.00	111.10	1777.60
3	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	<b>4748.80</b>

labour component/unit qty 1582.90

Add contractor's profit and overhead charges 13.615% 215.50

labour component/unit qty (including contractor's profit) **1798.40**

#### ABSTRACT:

A. Cost of Materials	Rs:	5220.49
B. Hire charges of Machinery	Rs:	6038.00
C. Cost of Labour	Rs:	4748.80
Total	Rs:	<u>16007.29</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs:	2179.391853
Total cost for Rate per Rm	3.00 Rm Rs: (A+B+C+D)/3.0 Rs:	<b>18186.68</b> <b>6062.20</b>

NOTE: 1. For drilling in hard rock beyond 30 m upto 60 m from surface increase the basic rate per Rm by 25 percent.  
2. For drilling in hard rock beyond 60 m upto 90 m from surface increase the basic rate per Rm by 40 percent.

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**Drilling 76 mm dia ( NX ) core hole in all types of rocks (other than Hard Rock) including Masonry/CC (where drilling is not possible by casing shoe) using diamond core bit vertical / inclined upto 10 degree to vertical as directed including cost of all materials, machinery, labour, water charges, and redrilling in case of collapse of sides etc., complete for depth upto 30 m from surface for Primary and Secondary Holes**

Drilling 76 mm dia ( NX ) core hole in all types of rocl

DATA: For drilling upto 30 m from surface the rate of drilling is assumed at 3 m per day for analysis.  
For rate analysis combination of diamond bit and reamer shell is assumed.

500 m long 25 mm dia GI pipe line and 50 m long 25 mm dia water hose are assumed.

For 30 m drilling average 16.5 m extension rods with coupling sleeves required.

Use rate of materials :

Cost of NX diamond core bit @ Rs: 12720.00 / Each Rs: 12720.00

Life of diamond core bit in all types of rock (other than hard rock) : 10.57 m

Use rate of diamond core bit per m drilling ( cost / life ) Rs: 1203.41

Cost of reamer shell @	Rs: 5150.00 / Each	Preliminary and Maintenance Works - Item Unit Rates 2016-17	Rs: 5150.00
Life of reamer shell in all types of rock (other than hard rock)	:	100 m	
Use rate of reamer shell per m drilling	( cost / life )	Rs: 51.50	
Cost of 16.5 m extension rod @	Rs: 2120.00 / Rm	Rs: 34980.00	
Life of extension rods	:	2500 m	
Use rate of 16.5 m length extension rods	( cost / life )	Rs: 13.99	

Data:

**RATE ANALYSIS**

UNIT :

**3.00 Rm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of diamond core bit	Rm	3.00	1203.41	3610.22
2	Use rate of reamer shell	Rm	3.00	51.50	154.50
4	Use rate of extension rod set 16.5 m	Rm	3.00	13.99	41.98
Total cost of Materials				Rs:	<b>3806.69</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Core drilling machine	Hour	4.78	319.00	1523.54
	Fuel / Energy charges	Hour	4.78	238.00	1136.69
2	5 hp pump ( diesel ) 2 Nos.	Hour	9.55	10.20	97.43
	Fuel / Energy charges	Hour	9.55	79.30	757.47
3	Sundries	LS	2.99	30.00	89.70
Total hire charges of Machinery				Rs:	<b>3604.84</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Core drilling machine	Hour	4.78	283.90	1355.91
2	Crew for Pump	Hour	9.55	111.10	1061.01
3	mazdoor	Day	1.19	350.00	416.50
Total cost of Labour				Rs:	<b>2833.41</b>

labour component/unit qty 944.50  
 Add contractor's profit and overhead charges 13.615% 128.60  
 labour component/unit qty (including contractor's profit) **1073.10**

**ABSTRACT:**

A. Cost of Materials	Rs: 3806.69
B. Hire charges of Machinery	Rs: 3604.84
C. Cost of Labour	Rs: 2833.41
Total	Rs: 10244.94
D. Add for contractor's profit and overheads on	13.615% Rs: 1394.848717
Total cost for	3.00 Rm Rs: <b>11639.79</b>
Rate per Rm	(A+B+C+D)/3.0 Rs: <b>3879.90</b>

NOTE: 1. For drilling in all types of rocks (other than hard rock) including masonry/CC beyond 30 m upto 60 m from surface increase the basic rate per Rm by 25 percent.  
 2. For drilling in all types of rocks (other than hard rock) including masonry/CC m from surface increase the basic beyond 60 m upto 90 rate per Rm by 40 percent.

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**Drilling 76 mm dia ( NX ) core hole in all types of rocks (other than Hard Rock) including Masonry/CC (where drilling is not possible by casing shoe) using diamond core bit vertical / inclined upto 10 degree to vertical as directed including cost of all materials, machinery, labour, water charges, collection of core samples, logging and labelling, supplying honne wood core box and redrilling in case of collapse of sides etc., complete for depth upto 30 m from surface for Test Holes**

DATA:

For drilling upto 30 m from surface the rate of drilling is assumed at 3 m per day for analysis.

For rate analysis combination of diamond bit and reamer shell is assumed.

500 m long 25 mm dia GI pipe line and 50 m long 25 mm dia water hose are assumed.

For 30 m drilling average 16.5 m extension rods with coupling sleeves required.

Use rate of materials :

Cost of NX diamond core bit @	Rs: 12720.00 / Each	Rs: 12720.00
Life of diamond core bit in all types of rock (other than hard rock)	:	10.57 m
Use rate of diamond core bit per m drilling	( cost / life )	Rs: 1203.41
Cost of reamer shell @	Rs: 5150.00 / Each	Rs: 5150.00

		Preliminary and Maintenance Works - Item Unit Rates 2016-17	
Life of reamer shell in all types of rock (other than hard rock)	( cost / life )	100 m	Rs: 51.50
Use rate of reamer shell per m drilling	( cost / life )		Rs: 13568.00
Cost of double core barrel @	Rs: 13568.00 / Each		
Life of double tube core barrel		100 m	
Use rate of double tube core barrel per m drilling	( cost / life )		Rs: 135.68
Cost of 16.5 m extension rod @	Rs: 2120.00 / Rm		Rs: 34980.00
Life of extension rods		2500 m	
Use rate of 16.5 m length extension rods	( cost / life )		Rs: 13.99
Honne wood core box 1.5 x 0.32 x 0.12 m			
Honne wood 0.033 cum @	Rs: 54000.00 / cum		Rs: 1782.00
Add for fixtures and painting @	10%		Rs: 178.20
Add for labour charges @	15%		Rs: 267.30
Cost of one box for storing	4 m samples		Rs: 2227.50
Use rate of core box per m drilling			Rs: 556.88

Data:

**RATE ANALYSIS**

UNIT :

**3.00 Rm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of diamond core bit	Rm	3.00	1203.41	3610.22
2	Use rate of reamer shell	Rm	3.00	51.50	154.50
3	Use rate of double tube core barrel	Rm	3.00	135.68	407.04
4	Use rate of extension rod set 16.5 m	Rm	3.00	13.99	41.98
5	Use rate of honne core box	Rm	3.00	556.88	1670.63
Total cost of Materials				Rs:	<b>5884.36</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Core drilling machine	Hour	4.78	319.00	1523.54
	Fuel / Energy charges	Hour	4.78	238.00	1136.69
2	5 hp pump ( diesel ) 2 Nos.	Hour	9.55	10.20	97.43
	Fuel / Energy charges	Hour	9.55	79.30	757.47
3	Sundries	LS	2.99	30.00	89.70
Total hire charges of Machinery				Rs:	<b>3604.84</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Core drilling machine	Hour	4.78	283.90	1355.91
2	Crew for Pump	Hour	9.55	111.10	1061.23
3	mazdoor	Day	1.19	350.00	417.90
Total cost of Labour				Rs:	<b>2835.03</b>

labour component/unit qty 945.00  
 Add contractor's profit and overhead charges 13.615% 128.70  
 labour component/unit qty (including contractor's profit) **1073.70**

**ABSTRACT:**

A. Cost of Materials	Rs: 5884.36
B. Hire charges of Machinery	Rs: 3604.84
C. Cost of Labour	Rs: 2835.03
Total	Rs: 12324.23
D. Add for contractor's profit and overheads on	13.615% Rs: 1677.943669
Total cost for	3.00 Rm Rs: <b>14002.17</b>
Rate per Rm	(A+B+C+D)/3.0 Rs: <b>4667.40</b>

NOTE: 1. For drilling in all types of rocks (other than hard rock) including masonry/CC beyond 30 m upto 60 m from surface increase the basic rate per Rm by 25 percent.  
 2. For drilling in all types of rocks (other than hard rock) including masonry/CC m from surface increase the basic beyond 60 m upto 90 rate per Rm by 40 percent.

IRR-PMW-2-6 **Drilling 47 mm (BX )dia core hole in hard rock using diamond core bit vertical / inclined upto 10 degree to vertical as directed including cost of all materials, machinery, labour, water charges, collection of core samples, logging, labelling, supplying honne wood core box and redrilling in case of collapse of sides etc., complete for depth upto 30 m from surface.**

Data:

**RATE ANALYSIS**

UNIT :

**3.00 Rm**

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of diamond core bit	Rm	3.00	706.67	2120.00
2	Use rate of reamer shell	Rm	3.00	85.83	257.50
3	Use rate of double tube core barrel	Rm	3.00	226.13	678.40
4	Use rate of extension rod set 16.5 m	Rm	3.00	23.32	69.96
5	Use rate of honne core box	Rm	3.00	556.88	1670.63
Total cost of Materials				Rs:	<b>4796.49</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Core drilling machine	Hour	8.00	319.00	2552.00
	Fuel / Energy charges	Hour	8.00	238.00	1904.00
2	5 hp pump ( diesel ) 2 Nos.	Hour	16.00	10.20	163.20
	Fuel / Energy charges	Hour	16.00	79.30	1268.80
3	Sundries	LS	5.00	30.00	150.00
Total hire charges of Machinery				Rs:	<b>6038.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Core drilling machine	Hour	8.00	283.90	2271.20
2	Crew for Pump	Hour	16.00	111.10	1777.60
3	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour					Rs: <b>4748.80</b>

labour component/unit qty 1582.90

Add contractor's profit and overhead charges 13.615% 215.50

labour component/unit qty (including contractor's profit) **1798.40****ABSTRACT:**

A. Cost of Materials	Rs:	4796.49
B. Hire charges of Machinery	Rs:	6038.00
C. Cost of Labour	Rs:	4748.80
Total		Rs: <u>15583.29</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 2121.664253
Total cost for Rate per Rm	3.00 Rm	Rs: <b>17704.95</b>
(A+B+C+D)/3.0		Rs. <b>5901.60</b>

NOTE: 1. For drilling in hard rock beyond 30 m upto 60 m from surface increase the basic rate for drilling upto 30 m from surface by 25 percent per Rm.

2. For drilling in hard rock beyond 60 m upto 90 m from surface increase the basic rate for drilling upto 30 m from surface by 40 percent per Rm.

IRR-PMW-2-6-A  
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**Drilling 47 mm (BX) dia core hole in all types of rocks (other than Hard Rock) including Masonry/CC (where drilling is not possible by casing shoe) using diamond core bit vertical / inclined upto 10 degree to vertical as directed including cost of all materials, machinery, labour, water charges, and redrilling in case of collapse of sides etc., complete for depth upto 30 m**

**DATA:** For drilling upto 30 m from surface the rate of drilling is assumed at 3 m per day for analysis.  
For rate analysis combination of diamond bit and reamer shell is assumed.

500 m long 25 mm dia GI pipe line and 50 m long 25 mm dia water hose are assumed.

For 30 m drilling average 16.5 m extension rods with coupling sleeves required.

Use rate of materials :

Cost of BX diamond core bit @ Rs: 10600.00 / Each Rs: 10600.00

Life of diamond core bit in all types of rock (other than hard rock) : 10.57 m

Use rate of diamond core bit per m drilling ( cost / life ) Rs: 1002.84

Cost of reamer shell @ Rs: 5150.00 / Each Rs: 5150.00

Life of reamer shell in all types of rock (other than hard rock) : 100 m

Use rate of reamer shell per m drilling ( cost / life ) Rs: 51.50

Cost of 16.5 m extension rod @ Rs: 2120.00 / Rm Rs: 34980.00

Life of extension rods : 2500 m

Use rate of 16.5 m length extension rods ( cost / life ) Rs: 13.99

Data:

**RATE ANALYSIS**Preliminary and Maintenance Works - Item Unit Rates 2016-17  
**UNIT :** **3.00 Rm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Use rate of diamond core bit	Rm	3.00	1002.84	3008.51
2	Use rate of reamer shell	Rm	3.00	51.50	154.50
4	Use rate of extension rod set 16.5 m	Rm	3.00	13.99	41.98
Total cost of Materials					Rs: <b>3204.99</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Core drilling machine	Hour	4.78	319.00	1523.54
	Fuel / Energy charges	Hour	4.78	238.00	1136.69
2	5 hp pump ( diesel ) 2 Nos.	Hour	9.55	10.20	97.43
	Fuel / Energy charges	Hour	9.55	79.30	757.47
3	Sundries	LS	2.99	30.00	89.70
Total hire charges of Machinery					Rs: <b>3604.84</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Core drilling machine	Hour	4.78	283.90	1355.91
2	Crew for Pump	Hour	9.55	111.10	1061.01
3	mazdoor	Day	1.19	350.00	416.50
Total cost of Labour					Rs: <b>2833.41</b>

labour component/unit qty 944.50  
 Add contractor's profit and overhead charges 13.615% 128.60  
 labour component/unit qty (including contractor's profit) **1073.10**

**ABSTRACT:**

A. Cost of Materials	Rs: 3204.99
B. Hire charges of Machinery	Rs: 3604.84
C. Cost of Labour	Rs: 2833.41
Total	Rs: 9643.24
D. Add for contractor's profit and overheads on 13.615% Rs: 1312.926862	
Total cost for 3.00 Rm Rs: <b>10956.16</b>	
<b>Rate per Rm</b> (A+B+C+D)/3.0 Rs. <b>3652.10</b>	

NOTE: 1. For drilling in all types of rocks (other than hard rock) including masonry/CC beyond 30 m upto 60 m from surface increase the basic rate per Rm by 25 percent.  
 2. For drilling in all types of rocks (other than hard rock) including masonry/CC m from surface increase the basic beyond 60 m upto 90 rate per Rm by 40 percent.

IRR-PMW-2-7

Providing and fixing 20 x 20 x 75 cm size roughly dressed boundary / demarcation / chainage / arrow stones including cost of all materials, labour, engraving marks, fixing in position, murum filling etc., complete with lead upto 50 m and all lifts.

Data:

**RATE ANALYSIS**

UNIT :

**18 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rough stone 20x20x75 cm	Each cum	18.00 1.00	23.00 165.00	414.00 165.00
Total cost of Materials					Rs: <b>579.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total hire charges of Machinery					Rs: <b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Stone chiseller Cl- I	Day	1.00	445.00	445.00

3	mazdoor	Day	Preliminary and Maintenance Works - Item Unit Rates 2016-17
		Total cost of Labour	Rs: <b>1945.00</b>

labour component/unit qty 108.10  
 Add contractor's profit and overhead charges 13.615% 14.70  
 labour component/unit qty (including contractor's profit) **122.80**

**ABSTRACT:**

A. Cost of Materials	Rs: 579.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1945.00
	<b>Total</b> Rs: <u>2524.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 343.6426
Total cost for	18.00 Nos. Rs: <b>2867.64</b>
<b>Rate per each</b>	(A+B+C+D)/18.0 Rs. <b>159.30</b>

IRR-PMW-2-8 Providing and fixing 20 x 20 x 75 cm size temporary bench mark stone in CC 1 : 4 : 8 using 40 mm down size graded coarse aggregate including cost of all materials, labour, dressing top surface, engraving BM data etc., complete with lead upto 50 m and all lifts.

Data:

**RATE ANALYSIS**

UNIT : **10 Nos.**

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rough stone 20x20x75 cm	Each	10.00	23.00	230.00
2	Cement for CC & top finishing	kg	91.00	5.35	486.85
3	Coarse aggregate 40-20 mm	cum	0.25	1175.00	293.75
	Coarse aggregate 20-10 mm	cum	0.15	1225.00	183.75
4	Coarse aggregate 10-4.75 mm	cum	0.10	900.00	90.00
	Sand (Un-Screened )	cum	0.25	95.00	23.75
			Total cost of Materials		Rs: <b>1308.10</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
			Total hire charges of Machinery		Rs: <b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Stone chiseller Cl- I	Day	3.00	445.00	1335.00
3	mazdoor	Day	4.00	350.00	1400.00
			Total cost of Labour		Rs: <b>3185.00</b>

labour component/unit qty 318.50  
 Add contractor's profit and overhead charges 13.615% 43.40  
 labour component/unit qty (including contractor's profit) **361.90**

**ABSTRACT:**

A. Cost of Materials	Rs: 1308.10
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 3185.00
	<b>Total</b> Rs: <u>4493.10</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 611.735565

Total cost for 10.00 Nos. Rs: **5104.84**  
**Rate per each** (A+B+C+D)/10.0 Rs. **510.50**

NOTE: For providing 30 cm thick compacted murum bed in B.C soil area including additional excavation for thickness of murum bedding add p Each

Rs: 4.00

IRR-PMW-2-9 Providing and fixing 20 x 20 x 75 cm size permanent bench mark stone in CC 1 : 3 : 6 block of size 90 x 90 x 120 cm using 40 mm down size graded coarse aggregate and providing 35 cm thick 30 cm high UCR masonry in CM 1 : 5 proportion protective wall around the BM stone, including cost of all materials, labour, dressing top surface of stone, engraving BM data on top surface, excavation, finishing, curing etc., complete with lead upto 50 m and all lifts.

Data:

**RATE ANALYSIS**

UNIT :

1 No.

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rough stone 20x20x75 cm	Each	1.00	23.00	23.00
2	Cement	kg	262.00	5.35	1401.70
3	Coarse aggregate 40-20 mm	cum	0.50	1175.00	587.50
	Coarse aggregate 20-10 mm	cum	0.30	1225.00	367.50
	Coarse aggregate 10-4.75 mm	cum	0.20	900.00	180.00
4	Rubble stone at quarry	cum	0.25	318.00	79.50
5	Stone chips at quarry	cum	0.04	350.00	14.00
6	Sand (Un-Screened )	cum	0.60	95.00	57.00
Total cost of Materials				Rs:	<b>2710.20</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Stone chiseller Cl- I	Day	0.50	445.00	222.50
3	Mason Cl- II	Day	1.00	400.00	400.00
4	mazdoor	Day	5.00	350.00	1750.00
Total cost of Labour				Rs:	<b>2822.50</b>

labour component/unit qty 2822.50

Add contractor's profit and overhead charges 13.615% 384.30

labour component/unit qty (including contractor's profit) **3206.80****ABSTRACT:**

A. Cost of Materials	Rs:	2710.20
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	2822.50
Total	Rs:	5532.70

D. Add for contractor's profit and overheads on

(A+B+C) 13.615% Rs: 753.277105

Total cost for 1.00 No. Rs: **6285.98**Rate per each (A+B+C+D)/1.00 Rs. **6286.00****IRR-PMW-3 MAINTENANCE WORKS :**

**IRR-PMW-3-1 Removing dry stone rock-toe / rivetment and filter layers below rock-toe/ rivetment**  
including stacking all materials separately as directed **with initial lead upto 50 m and all lifts.**

Data:

**RATE ANALYSIS**

UNIT :

105 cum

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00

2	Mason Cl- II	Day	Preliminary and Maintenance Works - Item Unit Rates 2016-17	6.00	400.00	2400.00
3	mazdoor	Day		48.00	350.00	16800.00
Total cost of Labour				Rs:	<b>19650.00</b>	

labour component/unit qty 187.10  
 Add contractor's profit and overhead charges 13.615% 25.50  
 labour component/unit qty (including contractor's profit) **212.60**

#### ABSTRACT:

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	<u>19650.00</u>
Total	Rs:	<u>19650.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 2675.3475
Total cost for	105.00 cum	Rs: <b>22325.35</b>
<b>Rate per cum</b>	(A+B+C+D)/105.0	Rs. <b>212.60</b>

IRR-PMW-3-2

#### Re-constructing 60 cm thick hand packed rough stone revetment with through

stones at 1.5 m c / c over a backing of 45 cm thick graded filter media consisting of sand, 10 mm and 40 mm size graded aggregates satisfying filter criteria laid in layers of 15 cm thick each using sand from approved quarry and stones and filter aggregates obtained from revetment removed for re-construction including cost of all machinery, labour, laying filter and stones to specified slopes, wedging with chips, finishing etc. complete **with initial lead upto 50 m and all lifts.**

Data:

#### RATE ANALYSIS UNIT : 100 sqm

##### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Sand (Un-Screened ) ( from quarry)	cum	15.30	95.00	1453.50
2	Coarse aggregate 10 mm (available)	cum	15.30	0.00	0.00
3	Coarse aggr. 40-20 mm ( available)	cum	15.30	0.00	0.00
4	Stone chips ( available )	cum	9.00	0.00	0.00
5	Rough stones ( available )	cum	57.60	0.00	0.00
6	Through stones ( available )	Nos	44.00	0.00	0.00
Total cost of Materials				Rs:	<b>1453.50</b>

##### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

##### C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Cl- II	Day	5.00	400.00	2000.00
3	mazdoor	Day	33.00	350.00	11550.00
Total cost of Labour				Rs:	<b>14000.00</b>

labour component/unit qty 140.00  
 Add contractor's profit and overhead charges 13.615% 19.10  
 labour component/unit qty (including contractor's profit) **159.10**

#### ABSTRACT:

A. Cost of Materials	Rs:	1453.50
B. Hire charges of Machinery	Rs:	0.00
C. Cost of Labour	Rs:	<u>14000.00</u>
Total	Rs:	<u>15453.50</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 2103.994025
Total cost for	100.00 sqm	Rs: <b>17557.49</b>
<b>Rate per sqm</b>	(A+B+C+D)/100.0	Rs. <b>175.60</b>

IRR-PMW-3-3

#### Re-constructing dry rubble rock-toe and filter media for rock-toe consisting of sand 20 mm and 80 mm size graded aggregates satisfying filter criteria laid in layers of 15 cm

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thick each using sand from approved quarry and stones and filter aggregates obtained from rock-toe removed for re-construction including cost of all machinery, labour, laying filter and stones to specified slopes, wedging with chips, finishing etc. complete with initial lead upto **50 m and all lifts.**

Data:

**RATE ANALYSIS** UNIT : **100 cum**

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rubble ( available )	cum	58.20	0.00	0.00
2	Stone chips ( available )	cum	8.70	0.00	0.00
3	80-20 mm filter ( available )	cum	19.40	0.00	0.00
4	20 mm down filter ( available )	cum	12.10	0.00	0.00
5	Sand (Un-Screened) ( fresh from quarry )	cum	9.80	95.00	931.00
Total cost of Materials				Rs:	<b>931.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Cl- II	Day	7.00	400.00	2800.00
3	mazdoor	Day	48.00	350.00	16800.00
Total cost of Labour				Rs:	<b>20050.00</b>

labour component/unit qty 200.50

Add contractor's profit and overhead charges 13.615% 27.30

labour component/unit qty (including contractor's profit) **227.80**

**ABSTRACT:**

A. Cost of Materials	Rs:	<b>931.00</b>
B. Hire charges of Machinery	Rs:	<b>0.00</b>
C. Cost of Labour	Rs:	<b>20050.00</b>
	Total	<b>20981.00</b>
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: <b>2856.56315</b>
Total cost for	100.00 cum	Rs: <b>23837.56</b>
Rate per cum	(A+B+C+D)/100.0	Rs. <b>238.40</b>

IRR-PMW-3-4

**Removing and resetting disturbed Yarguntla / Shahabad / Talikot / PCC / Other types of slab lining set in CM 1 : 3 including flush cement mortar pointing in CM 1 : 3 with lead upto 50 m and all lifts.**

Data:

**RATE ANALYSIS** UNIT : **100 sqm**

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement 43 Gr	kg	101.00	5.35	540.35
2	Sand (Screened )	cum	0.21	165.00	34.65
Total cost of Materials				Rs:	<b>575.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00

2	Mason Class I	Day	Preliminary and Maintenance Works - Item Unit Rates 2016-17	445.00	1780.00
3	mazdoor	Day		350.00	2100.00
4	Cartman with Double Bullock cart for water	Day		465.00	465.00
Total cost of Labour			Rs:	<b>4795.00</b>	
labour component/unit qty			48.00		
Add contractor's profit and overhead charges			13.615% 6.50		
labour component/unit qty (including contractor's profit)			<b>54.50</b>		
<b>ABSTRACT:</b>					
A. Cost of Materials			Rs:	575.00	
B. Hire charges of Machinery			Rs:	0.00	
C. Cost of Labour			Rs:	<b>4795.00</b>	
		Total	Rs:	<b>5370.00</b>	
D. Add for contractor's profit and overheads on					
(A+B+C)			13.615%	Rs:	731.1255
Total cost for		100.00 sqm		Rs:	<b>6101.13</b>
Rate per sqm		(A+B+C+D)/100.0		Rs.	<b>61.00</b>

IRR-PMW-3-5 **Removing and resetting disturbed dry rubble / khandki stone pitching 25 to 45 cm thick including packing, wedging, finishing etc., complete with all leads and lifts.**

Data:

**RATE ANALYSIS** UNIT : **100 sqm**

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	Mason Class II	Day	6.00	400.00	2400.00
3	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour				Rs:	<b>4950.00</b>

labour component/unit qty **49.50**

Add contractor's profit and overhead charges **13.615% 6.70**

labour component/unit qty (including contractor's profit) **56.20**

**ABSTRACT:**

A. Cost of Materials Rs: 0.00

B. Hire charges of Machinery Rs: 0.00

C. Cost of Labour Rs: 4950.00

Total Rs: 4950.00

D. Add for contractor's profit and overheads on

(A+B+C) 13.615% Rs: 673.9425

Total cost for 100.00 sqm Rs: **5623.94**

Rate per sqm (A+B+C+D)/100.0 Rs. **56.20**

IRR-PMW-3-6 **Removing and refixing disturbed chainage / demarcation / hectometre / guard stones including excavation, back filling etc., complete with all leads and lifts.**

DATA:

**RATE ANALYSIS**

UNIT : **18 Nos.**

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00

Total cost of Materials	Preliminary and Maintenance Works - Item Unit Rates 2010-17 Rs: <b>0.00</b>
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**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
					<b>Rs: 0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	2.00	350.00	700.00
					<b>Rs: 1150.00</b>

labour component/unit qty 63.89

Add contractor's profit and overhead charges 13.615% 8.70

labour component/unit qty (including contractor's profit) **72.60****ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1150.00
	Rs: 1150.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 156.5725
Total cost for	18.00 Nos. Rs: <b>1306.57</b>
<b>Rate per each</b>	(A+B+C+D)/18.0 Rs. <b>72.60</b>

IRR-PMW-3-7

**Removing and refixing disturbed km stone / sign board / hecto-metre stone etc.,** including excavation, back filling with available stuff after refixing, forming base platform of size 90 x 90 x 7.5 cm including watering, ramming etc complete **with all leads and lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**8 Nos.****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
					<b>Rs: 0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
					<b>Rs: 0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	2.00	350.00	700.00
					<b>Rs: 1150.00</b>

labour component/unit qty 143.75

Add contractor's profit and overhead charges 13.615% 19.57

labour component/unit qty (including contractor's profit) **163.30****ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1150.00
	Rs: 1150.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 156.5725
Total cost for	8.00 Nos. Rs: <b>1306.57</b>
<b>Rate per each</b>	(A+B+C+D)/18.0 Rs. <b>163.30</b>

**Providing impervious hearting for breached / damaged portion of embankment**  
with soil from **approved borrow areas** in layers of **10 to 15 cm** before compaction including cost of all materials, machinery, labour, all operations such as collection of soil, sorting out, spreading soil to specified thickness, breaking clods, sectioning, watering, compacting each layer to density control of **not less than 98 percent** or as stipulated by **rolling or by using mechanical tampers etc.**, complete with **initial lead upto 1 km and all lifts.**

Data:

**RATE ANALYSIS**

UNIT :

**480 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
Total cost of Materials				Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer	Hour	5.00	1715.50	8577.50
	Fuel / Energy charges	Hour	5.00	610.50	3052.50
2	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5.00 cum capacity 4 Nos.	Hour	32.00	446.70	14294.40
	Fuel / Energy charges	Hour	32.00	299.90	9596.80
4	Pump 5 hp ( diesel )	Hour	2.00	10.20	20.40
	Fuel / Energy charges	Hour	2.00	79.30	158.60
5	Water tanker 8000 ltr	Hour	4.00	402.50	1610.00
	Fuel / Energy charges	Hour	4.00	299.90	1199.60
6	Vibratory pad foot roller 8 tonne	Hour	6.00	1342.20	8053.20
	Fuel / Energy charges	Hour	6.00	1031.40	6188.40
7	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	<b>64644.20</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	4.00	236.60	946.40
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	32.00	177.50	5680.00
4	Crew for Pump	Hour	3.00	111.10	333.30
5	Crew for Water tanker	Hour	5.00	177.50	887.50
6	Crew for Roller	Hour	6.00	263.60	1581.60
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs:	<b>13621.60</b>

labour component/unit qty 28.40

Add contractor's profit and overhead charges 13.615% 3.90

labour component/unit qty (including contractor's profit) **32.30****ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	64644.20
C. Cost of Labour	Rs:	13621.60
	Total	78265.80
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 10655.88867
Total cost for 480.00 cum	Rs:	<b>88921.69</b>
Rate per cum	(A+B+C+D)/480.0	Rs. <b>185.30</b>

**Providing pervious/semi-pervious casing for breached / damaged portion of embankment** with soil from **approved borrow areas** in layers of **10 to 15 cm** before compaction including cost of all materials, machinery, labour, all operations such as collection of soil, sorting out, spreading soil to specified thickness, breaking clods, sectioning, watering, compacting each layer to density control of not less than 98 percent or as stipulated by rolling or by using mechanical tampers etc., complete with **initial lead upto 1 km and all lifts.**

Data:

**RATE ANALYSIS**

UNIT :

**325 cum****A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Preliminary and Maintenance Works - Item Unit Rates 2016-17	Amount in Rs.
				Rate in Rs.	
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.50	1715.50	6004.25
	Fuel / Energy charges	Hour	3.50	610.50	2136.75
2	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
	Fuel / Energy charges	Hour	8.00	476.00	3808.00
3	Tippers 5.00 cum capacity 3 Nos.	Hour	24.00	446.70	10720.80
	Fuel / Energy charges	Hour	24.00	299.90	7197.60
4	Pump 5 hp ( diesel )	Hour	1.50	10.20	15.30
	Fuel / Energy charges	Hour	1.50	79.30	118.95
5	Water tanker 8000 ltr	Hour	3.00	402.50	1207.50
	Fuel / Energy charges	Hour	3.00	299.90	899.70
6	Vibratory pad foot roller 8 tonne	Hour	4.00	1342.20	5368.80
	Fuel / Energy charges	Hour	4.00	1031.40	4125.60
7	Sundries	LS	2.00	30.00	60.00
	Total hire charges of Machinery			Rs:	<b>49688.05</b>

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.50	236.60	828.10
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	24.00	177.50	4260.00
4	Crew for Pump	Hour	1.50	111.10	166.65
5	Crew for Water tanker	Hour	3.00	177.50	532.50
6	Crew for Roller	Hour	4.00	263.60	1054.40
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	4.00	350.00	1400.00
	Total cost of Labour			Rs:	<b>11034.45</b>

labour component/unit qty 34.00

Add contractor's profit and overhead charges 13.615% 4.60

 labour component/unit qty (including contractor's profit) **38.60**
**ABSTRACT:**

A. Cost of Materials	Rs:	0.00
B. Hire charges of Machinery	Rs:	49688.05
C. Cost of Labour	Rs:	11034.45
	Total	Rs: 60722.50
D. Add for contractor's profit and overheads on (A+B+C)	13.615%	Rs: 8267.368375
Total cost for 325.00 cum	Rs:	<b>68989.87</b>
Rate per cum	(A+B+C+D)/325.0	Rs: <b>212.30</b>

IRR-PMW-3-10 **Providing impervious hearting for breached / damaged portion of embankment** with soil from **approved dump areas** in layers of 10 to 15 cm before compaction including cost of all materials, machinery, labour, all operations such as collection of soil, sorting out, spreading soil to specified thickness, breaking clods, sectioning, watering, compacting each layer to density control of **not less than 98 percent** or as stipulated by **rolling or by using mechanical tampers etc., complete with initial lead upto 1 km and all lifts.**

Data:

**RATE ANALYSIS**

UNIT :

612 cum

**A. MATERIALS:**

Sl No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
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Preliminary and Maintenance Works - Item Unit Rates 2016-17					
		Hour	4.00	1715.50	6862.00
1	Angle dozer	Hour	4.00	610.50	2442.00
2	Fuel / Energy charges	Hour	8.00	1003.10	8024.80
3	Shovel 0.50 cum capacity	Hour	8.00	476.00	3808.00
4	Fuel / Energy charges	Hour	40.00	446.70	17868.00
5	Tippers 5.00 cum capacity 5 Nos.	Hour	40.00	299.90	11996.00
6	Pump 5 hp ( diesel )	Hour	4.00	10.20	40.80
7	Fuel / Energy charges	Hour	4.00	79.30	317.20
8	Water tanker 8000 ltr	Hour	7.00	402.50	2817.50
9	Fuel / Energy charges	Hour	7.00	299.90	2099.30
10	Vibratory pad foot roller 8 tonne	Hour	7.50	1342.20	10066.50
11	Fuel / Energy charges	Hour	7.50	1031.40	7735.50
12	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs: <b>74137.60</b>

### C. LABOUR:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	4.00	236.60	946.40
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	40.00	177.50	7100.00
4	Crew for Pump	Hour	4.00	111.10	444.40
5	Crew for Water tanker	Hour	7.00	177.50	1242.50
6	Crew for Roller	Hour	7.50	263.60	1977.00
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour					Rs: <b>16603.10</b>

labour component/unit qty 27.10

Add contractor's profit and overhead charges 13.615% 3.70

labour component/unit qty (including contractor's profit) **30.80**

### ABSTRACT:

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 74137.60
C. Cost of Labour	Rs: 16603.10
Total	Rs: 90740.70
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 12354.34631
Total cost for Rate per cum	612.00 cum Rs: <b>103095.05</b>
(A+B+C+D)/612.0	Rs. <b>168.50</b>

IRR-PMW-3-11 **Providing pervious /semi-pervious casing for breached /damaged portion of embankment**  
with soil from **approved dump areas** in layers of 10 to 15 cm before compaction including cost of all materials, machinery, labour, all operations such as collection of soil, sorting out, spreading soil to specified thickness, breaking clods, sectioning, watering, compacting each layer to density control of **not less than 98 percent** or as stipulated by **rolling or by using mechanical tampers etc., complete with initial lead upto 1 km and all lifts.**

Data:

### RATE ANALYSIS

UNIT :

**440 cum**

### A. MATERIALS:

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
Total cost of Materials					Rs: <b>0.00</b>

### B. MACHINERY:

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	3.00	1715.50	5146.50
2	Fuel / Energy charges	Hour	3.00	610.50	1831.50
3	Shovel 0.50 cum capacity	Hour	8.00	1003.10	8024.80
4	Fuel / Energy charges	Hour	8.00	476.00	3808.00
5	Tippers 5.00 cum capacity 4 Nos.	Hour	32.00	446.70	14294.40
6	Fuel / Energy charges	Hour	32.00	299.90	9596.80
7	Pump 5 hp ( diesel )	Hour	3.00	10.20	30.60
8	Fuel / Energy charges	Hour	3.00	79.30	237.90
9	Water tanker 8000 ltr	Hour	6.00	402.50	2415.00

				Preliminary and Maintenance Works - Item Unit Rates 2016-17
6	Fuel / Energy charges Vibratory pad foot roller 8 tonne	Hour	6.00	299.90 1799.40
7	Fuel / Energy charges Sundries	Hour	5.50	1342.20 7382.10
		Hour	5.50	1031.40 5672.70
		LS	2.00	30.00 60.00
	Total hire charges of Machinery			Rs: 60299.70

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	3.00	236.60	709.80
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	32.00	177.50	5680.00
4	Crew for Pump	Hour	3.00	111.10	333.30
5	Crew for Water tanker	Hour	6.00	177.50	1065.00
6	Crew for Roller	Hour	5.50	263.60	1449.80
7	work inspector	Day	2.00	450.00	900.00
8	mazdoor	Day	6.00	350.00	2100.00
	Total cost of Labour			Rs:	14130.70

labour component/unit qty 32.10

Add contractor's profit and overhead charges 13.615% 4.40

labour component/unit qty (including contractor's profit) 36.50

**ABSTRACT:**

A. Cost of Materials Rs: 0.00

B. Hire charges of Machinery Rs: 60299.70

C. Cost of Labour Rs: 14130.70

Total Rs: 74430.40

D. Add for contractor's profit and overheads on (A+B+C) 13.615% Rs: 10133.69896

Total cost for 440.00 cum Rs: 84564.10

Rate per cum (A+B+C+D)/440.0 Rs: 192.20

**IRR-PMW-3-12 Repairing rain cuts / resectioning canal slopes to required lines and grades as directed using available soil including dressing, clod breaking, packing, tamping etc., complete with all leads and lifts.**

DATA:

**RATE ANALYSIS**

UNIT : 1000 sqm

**A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
	Total cost of Materials			Rs:	0.00

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
	Total hire charges of Machinery			Rs:	0.00

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	work inspector	Day	1.00	450.00	450.00
2	mazdoor	Day	8.00	350.00	2800.00
	Total cost of Labour			Rs:	3250.00

labour component/unit qty 3.25

Add contractor's profit and overhead charges 13.615% 0.44

labour component/unit qty (including contractor's profit) 3.70

**ABSTRACT:**

A. Cost of Materials Rs: 0.00

B. Hire charges of Machinery Rs: 0.00

C. Cost of Labour Rs: 3250.00

Total Rs: 3250.00

D. Add for contractor's profit and overheads on (A+B+C) 13.615% Rs: 442.4875

	Total cost for <b>Rate per sqm</b>	1000.00 sqm (A+B+C+D)/1000.0	Preliminary and Maintenance Works - Item Unit Rates 2016-17 Rs: <b>3692.49</b>
			Rs. <b>3.70</b>

**IRR-PMW-3-13 Cleaning drainage gallery, adits, instrumentation galleries etc., by scrubbing / brushing**  
 including chiselling and removing leached lime deposit and disposing off all the waste material out side adits in specified location etc., **complete with all leads and lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**100 Rm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Wire brush	Each	5.00	41.00	205.00
2	Coir brush	Each	10.00	45.00	450.00
3	Sundries ( brooms, gloves etc )	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>715.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Chiseller Cl II	Day	2.00	400.00	800.00
2	mazdoor	Day	6.00	350.00	2100.00
Total cost of Labour				Rs:	<b>2900.00</b>

labour component/unit qty 29.00

Add contractor's profit and overhead charges 13.615% 3.90

labour component/unit qty (including contractor's profit) **32.90****ABSTRACT:**

A. Cost of Materials	Rs: 715.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2900.00
Total	Rs: 3615.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 492.18225
Total cost for	100.00 Rm Rs: <b>4107.18</b>
Rate per Rm	(A+B+C+D)/100.0 Rs. <b>41.10</b>

**IRR-PMW-3-14 Cleaning dam parapet inner face and top using oxalic acid and water by scrubbing / brushing**  
 and washing to remove all surface coatings etc., complete .

DATA:

**RATE ANALYSIS**

UNIT :

**100 Rm****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Oxalic acid	ltr	5.00	80.00	400.00
2	Wire brush	Each	5.00	41.00	205.00
3	Coir brush	Each	10.00	45.00	450.00
4	Sundries ( brooms, gloves etc )	LS	2.00	30.00	60.00
Total cost of Materials				Rs:	<b>1115.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery				Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	mazdoor	Day	Preliminary and Maintenance Works - Item Unit Rates 2016-17
		Total cost of Labour	Rs: <b>2100.00</b>

labour component/unit qty 21.00  
 Add contractor's profit and overhead charges 13.615% 2.90  
 labour component/unit qty (including contractor's profit) **23.90**

**ABSTRACT:**

A. Cost of Materials	Rs: 1115.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2100.00
Total	Rs: <u>3215.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 437.7225
Total cost for Rm	100.00 Rm Rs: <b>3652.72</b>
Rate per Rm	(A+B+C+D)/100.0 Rm Rs. <b>36.50</b>

IRR-PMW-3-20 **Excavation and removal of silt and silt mixed with sand from canal bed in dry condition**  
 including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete **with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**10 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
Total cost of Materials				Rs: <b>0.00</b>	

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
Total hire charges of Machinery				Rs: <b>0.00</b>	

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	mazdoor	Day	4.00	350.00	1400.00
Total cost of Labour				Rs: <b>1400.00</b>	

labour component/unit qty 140.00  
 Add contractor's profit and overhead charges 13.615% 19.10  
 labour component/unit qty (including contractor's profit) **159.10**

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 1400.00
Total	Rs: <u>1400.00</u>
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 190.61
Total cost for cum	10.00 cum Rs: <b>1590.61</b>
Rate per cum	(A+B+C+D)/10.0 Rs. <b>159.10</b>

IRR-PMW-3-21 **Excavation and removal of silt or silt mixed with sand in sluggy condition from canal bed**  
 including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete **with initial lead upto 50 m and all lifts.**

DATA:

**RATE ANALYSIS**

UNIT :

**12 cum****A. MATERIALS:**

SI No	particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00	0.00	0.00
Total cost of Materials				Rs: <b>0.00</b>	

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	Total hire charges of Machinery			Rs:	<b>0.00</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	mazdoor	Day	6.00	350.00	2100.00
	Total cost of Labour			Rs:	<b>2100.00</b>

labour component/unit qty 175.00

Add contractor's profit and overhead charges 13.615% 23.80

labour component/unit qty (including contractor's profit) **198.80****ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 0.00
C. Cost of Labour	Rs: 2100.00
	Total Rs: 2100.00
D. Add for contractor's profit and overheads on (A+B+C)	13.615% Rs: 285.915
Total cost for Rate per cum	12.00 cum Rs: <b>2385.92</b>
	(A+B+C+D)/12.0 Rs. <b>198.80</b>

IRR-PMW-3-22

New Item5 - 2010-11

(For Minor Works)

**Providing homogeneous embankment using soil from approved borrow****area in layers of 25 to 30 cm before compaction including cost of all materials, machinery, labour, all operations such as excavation, sorting out, transportation, spreading soil in layer of specified thickness, breaking clods, sectioning,etc.,complete with initial lead upto 1 km and all lifts.****RATE ANALYSIS****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0.00 0.00	0.00 0.00	0.00 0.00
	Total cost of Materials			Rs:	<b>0.00</b>

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Angle dozer 90 hp	Hour	2.70	1715.50	4631.85
	Fuel / Energy charges				610.50 1648.35
2	Shovel 0.85 cum capacity	Hour	8.00	1706.60	13652.80
	Fuel / Energy charges				872.70 6981.60
3	Tippers 5.00 cum capacity 5 Nos.	Hour	40.00	446.70	17868.00
	Fuel / Energy charges				299.90 11996.00
	Total hire charges of Machinery			Rs:	<b>56778.60</b>

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Crew for Dozer	Hour	2.70	236.60	638.82
2	Crew for Shovel	Hour	8.00	236.60	1892.80
3	Crew for Tipper	Hour	40.00	177.50	7100.00
4	work inspector	Day	1.00	450.00	450.00
5	mazdoor	Day	2.00	350.00	700.00
	Total cost of Labour			Rs:	<b>10781.62</b>

labour component/unit qty 13.40

Add contractor's profit and overhead charges 13.615% 1.80

labour component/unit qty (including contractor's profit) **15.20****ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 56778.60
C. Cost of Labour	Rs: 10781.62
Total	Rs: 67560.22
D.Add for contractor's profit and overheads on (A+B+C)	13.615% Rs. 9198.32
Total cost for	807.00 cum Rs: <b>76758.54</b>

Rate per cum

(A+B+C+D)/807

Preliminary and Maintenance Works - Item Unit Rates 2016-17  
Rs: 95.10

IRR-PMW-3-23  
New Item6 - 2010-11  
(For Minor Works)

**Providing homogeneous embankment using soil from approved borrow area in layers of 25 to 30 cm before compaction including cost of all materials, machinery, labour, all operations such as watering, compacting to density control of not less than 95 percent or as stipulated using 8T roller etc., complete with initial lead upto 1 km and all lifts.**

**RATE ANALYSIS****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	UNIT : 807.00 cum	
				Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	0.00

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	
				Amount in Rs	
1	Angle dozer 90 hp	Hour	2.70	1715.50	4631.85
	Fuel / Energy charges	Hour	2.70	610.50	1648.35
2	Pump 5 hp ( ele )	Hour	4.00	3.00	12.00
	Fuel / Energy charges	Hour	4.00	28.00	112.00
3	Water tanker 8000 ltr	Hour	8.00	402.50	3220.00
	Fuel / Energy charges	Hour	8.00	299.90	2399.20
4	Vibratory pad foot roller 8 tonne	Hour	6.40	1342.20	8590.08
	Fuel / Energy charges	Hour	6.40	1031.40	6600.96
5	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery				Rs:	27274.44

**C. LABOUR:**

SI No	Description	Unit	Quantity	Rate in Rs.	
				Amount in Rs	
1	Crew for Dozer	Hour	2.70	236.60	638.82
4	Crew for Pump	Hour	4.00	83.30	333.20
5	Crew for Water tanker	Hour	8.00	177.50	1420.00
6	Crew for Roller	Hour	6.40	263.60	1687.04
7	work inspector	Day	1.00	450.00	450.00
8	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour				Rs:	5229.06

labour component/unit qty	6.50
Add contractor's profit and overhead charges	13.615% 0.90
labour component/unit qty (including contractor's profit)	<u>7.40</u>

**ABSTRACT:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 27274.44
C. Cost of Labour	Rs: 5229.06
Total	Rs: 32503.50
D.Add for contractor's profit and overheads on (A+B+C)	13.615% 4425.35
Total cost	
for	807.00 cum
<b>Rate per cum</b>	<b>Rs: 36928.85</b>
	<b>Rs: 45.80</b>

IRR-PMW-3-24 **Providing homogeneous embankment using soil from approved borrow**

New Item 7 - 2010-11 **area in layers of 25 to 30 cm before compaction including cost of all materials, machinery, labour, all operations such as compacting to density control of not less than 90 percent or as stipulated using 2T roller etc., complete with initial lead upto 1 km and all lifts.**

**RATE ANALYSIS****A. MATERIALS:**

SI No	Particulars	Unit	Quantity	UNIT : 807.00 cum	
				Rate in Rs.	Amount in Rs
1	NIL		0.00	0.00	0.00
			0.00	0.00	0.00
Total cost of Materials				Rs:	0.00

**B. MACHINERY:**

SI No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs

					Preliminary and Maintenance Works - Item Unit Rates 2016-17
1	Tractor with 2T Roller	Hour	10.00	345.00	3450.00
2	Sundries	LS	2.00	30.00	60.00
Total hire charges of Machinery					Rs: 3510.00

**C. LABOUR:**

Sl No	Description	Unit	Quantity	Rate in Rs.	Amount in Rs
1	work inspector	Day	0.50	450.00	225.00
2	mazdoor	Day	2.00	350.00	700.00
Total cost of Labour					Rs: 925.00

labour component/unit qty	1.10
Add contractor's profit and overhead charges	13.615% 0.10
labour component/unit qty (including contractor's profit)	<u>1.20</u>

**ABSTRACT**

**T:**

A. Cost of Materials	Rs: 0.00
B. Hire charges of Machinery	Rs: 3510.00
C. Cost of Labour	Rs: 925.00
Total	Rs: 4435.00
D.Add for contractor's profit and overheads on	13.615%
Total cost for	807.00 cum
Rate per cum	(A+B+C+D)/807
	Rs: 6.20

IRR-PMW-3-25    **Weed Removal by Manual Means**  
(New Item 2012-13-3)

IRR-PMW-3-25(a) **Removal of Water Hyacinth up to 30 cm thick**

**RATE ANALYSIS**

Unit : **2000 Sqm**

**A. MATERIALS**

Sl. No.	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total Cost of Materials					Rs. 0.00

**B. MACHINERY**

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total hire charges of Machinery					Rs. 0.00

**C. LABOUR**

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Work Inspector	Day	3.5	450.00	1575
2	Mazdoor	Day	28	350.00	9800
Total Cost of Labour					Rs. 11375.00

**ABSTRACT:**

A.COST OF MATERIALS	Rs. 0.00
B.COST OF MACHINERY	Rs. 0.00
C.COST OF LABOUR	Rs. 11375.00
Total	11375.00
D. Add for Contractor's Profit and overheads	13.615%
Total Cost for removal weed in the extent of	2000 Sqm
Rate per Sqm	(A+B+C+D)/2000
	1548.70625
	<b>12923.71</b>
	6.5

IRR-PMW-3-25(b) **Removal of Water Hyacinth beyond 30 cm thick**

**RATE ANALYSIS**

Unit : **2000 Sqm**

**A. MATERIALS**

Sl. No.	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total Cost of Materials					Rs. 0.00

**B. MACHINERY**

Preliminary and Maintenance Works - Item Unit Rates 2016-17					
Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total hire charges of Machinery			Rs.	<b>0.00</b>	

**C. LABOUR**

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Work Inspector	Day	5	450.00	2250
2	Mazdoor	Day	38	350.00	13300
Total Cost of Labour			Rs.	<b>15550.00</b>	

**ABSTRACT:**

A.COST OF MATERIALS	Rs.	0.00
B.COST OF MACHINERY	Rs.	0.00
C.COST OF LABOUR	Rs.	15550.00
Total		15550.00
D. Add for Contractor's Profit and overheads	13.615%	2117.1325
Total Cost for removal weed in the extent of	2000 Sqm	<b>17667.13</b>
Rate per Sqm	(A+B+C+D)/2000	8.8

**IRR-PMW-3-25(c) Clearing Alchi Tilla**

**RATE ANALYSIS**

Unit : **2000 Sqm**

**A. MATERIALS**

Sl. No.	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total Cost of Materials			Rs.	<b>0.00</b>	

**B. MACHINERY**

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total hire charges of Machinery			Rs.	<b>0.00</b>	

**C. LABOUR**

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Work Inspector	Day	3	450.00	1350
2	Mazdoor	Day	26	350.00	9100
Total Cost of Labour			Rs.	<b>10450.00</b>	

**ABSTRACT:**

A.COST OF MATERIALS	Rs.	0.00
B.COST OF MACHINERY	Rs.	0.00
C.COST OF LABOUR	Rs.	10450.00
Total		10450.00
D. Add for Contractor's Profit and overheads	14%	1422.7675
Total Cost for removal weed in the extent of	2000 Sqm	<b>11872.77</b>
Rate per Sqm	(A+B+C+D)/2000	5.9

**IRR-PMW-3-25(d) Removal of Jammu**

**RATE ANALYSIS**

Unit : **2000 Sqm**

**A. MATERIALS**

Sl. No.	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total Cost of Materials			Rs.	<b>0.00</b>	

**B. MACHINERY**

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total hire charges of Machinery			Rs.	<b>0.00</b>	

**C. LABOUR**

Preliminary and Maintenance Works - Item Unit Rates 2016-17					
Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Work Inspector	Day	2.5	450.00	1125
2	Mazdoor	Day	22	350.00	7700
Total Cost of Labour			Rs.	<b>8825.00</b>	

**ABSTRACT:**

A.COST OF MATERIALS	Rs.	0.00
B.COST OF MACHINERY	Rs.	0.00
C.COST OF LABOUR	Rs.	8825.00
Total		<u>8825.00</u>
D. Add for Contractor's Profit and overheads	14%	1201.52375
Total Cost for removal weed in the extent of	2000 Sqm	<b>10026.52</b>
Rate per Sqm	(A+B+C+D)/2000	5

IRR-PMW-3-25(e) Removal of Imponea, Cornea

**RATE ANALYSIS**

Unit : **2000 Sqm**

**A. MATERIALS**

Sl. No.	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total Cost of Materials			Rs.	<b>0.00</b>	

**B. MACHINERY**

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total hire charges of Machinery			Rs.	<b>0.00</b>	

**C. LABOUR**

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Work Inspector	Day	3	450.00	1350
2	Mazdoor	Day	26	350.00	9100
Total Cost of Labour			Rs.	<b>10450.00</b>	

**ABSTRACT:**

A.COST OF MATERIALS	Rs.	0.00
B.COST OF MACHINERY	Rs.	0.00
C.COST OF LABOUR	Rs.	10450.00
Total		<u>10450.00</u>
D. Add for Contractor's Profit and overheads	14%	1422.7675
Total Cost for removal weed in the extent of	2000 Sqm	<b>11872.77</b>
Rate per Sqm	(A+B+C+D)/2000	5.9

IRR-PMW-3-25(f) Removal of Natchu, goobi, thooti, etc.

**RATE ANALYSIS**

Unit : **2000 Sqm**

**A. MATERIALS**

Sl. No.	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total Cost of Materials			Rs.	<b>0.00</b>	

**B. MACHINERY**

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	NIL		0	0	0
Total hire charges of Machinery			Rs.	<b>0.00</b>	

**C. LABOUR**

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Work Inspector	Day	1.2	450.00	540
2	Mazdoor	Day	8	350.00	2800
Total Cost of Labour			Rs.	<b>3340.00</b>	

**ABSTRACT:**

A.COST OF MATERIALS	Rs.	0.00
B.COST OF MACHINERY	Rs.	0.00
C.COST OF LABOUR	Rs.	3340.00
	Total	3340.00
D. Add for Contractor's Profit and overheads	14%	454.741
Total Cost for removal weed in the extent of Rate per Sqm	2000 Sqm	3794.74
(A+B+C+D)/2000		1.9

IRR-PMW-3-26  
New Item 2015-16-  
8

PAINTING OF SLUICES FOR MAINTENANCE WORKS

Surface cleaning of metal surfaces by chemical cleaners and then by hand and power tool cleaners and removing dust. After cleaniog, applying primary coat with **one coat** of Zinc rich epoxy primer to a thickness of 100 microns, followed by finishing coats **2 coats** with Coal tar epoxy with material, labour, and all accessories with all leads and lifts.

Data:  
A. Materials

Rate Analysis			Unit:	100 Sqm	
Sl. No.	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Rust Cleaner/ Inhibitor	Itr	13	130.00	1690
2	Zinc rich epoxy primer	Itr	14	700.00	9800
3	Thinner@10%	Itr	1.4	100.00	140
4	Coal Tar epoxy paint	Itr	40	215	8600
5	Thinner@10%	Itr	4	100.00	400
6	Wire Brush	Itr	2	41	82
7	Sundries (brushes, Ladders, platforms)	LS	3	30	90
				Total Cost of Materials	20802

B. Machinery

Sl. No.	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
	NIL				
				Total Cost of Machinery	0

C. Labour

Sl. No.	Particulars	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Painter Class-II	Day	20	400.00	8000
2	Helper	Day	20	350.00	7000
				Total Cost of Machinery	15000

Labour Component/ Unit Qty. 150  
Add Contractor's Profit and and Overhead Charges @ 13.615% 20.4225  
Labour Component/ Unit Qty (including contractor' profit) **170.4225**

**ABSTRACT:**

A. Cost of Materials:	20802
B. Hire Charges of Machinery	0
C. Cost of Labour	15000
	Total 35802
D. Add for Excise Duty on 75% cost excluding cost of materia	0% 0
	Total 35802
E. Add for transportation Charges upto worksite @	3% 1074.06
	Total 36876.06
F. Add for Contractor's Profit and Overhead Charges @13.615%	13.615% 5020.68
	Total Cost per 100 Sqm 41896.74
Rate per	Sqm 419

(Common to all Departments)

**Index\_code**  
COM\_MWRK**A. Manual Works**

COM_MWRK	New extra items-- common item for all earth works using only manual labour for all other works without involving contractors	
COM_MWRK-1	( <b>Manual</b> )Excavation in all kinds of soil including boulders upto 0.30 m dia. for foundations of canal cross drainage and other appurtenant structures and placing excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto 10 m and per cum initial lift upto 1.5 m. (Without involving the contractors for specified works ) <b>With 3 Cum per day output</b>	116.70
COM_MWRK-2	( <b>Manual</b> )Excavation in all kinds of soil/ HDR including boulders upto 0.30 m dia. for foundations of canal cross drainage and other appurtenant structures and placing excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto 10 m and per cum initial lift upto 1.5 m. (Without involving the contractors for specified works ) <b>With 2.5 Cum per day output</b>	140.00
COM_MWRK-3	( <b>Manual</b> )Excavation in soft rock (including F&F) without blasting, including boulders upto 0.30 m dia. for foundations of canal cross drainage and other appurtenant structures and placing excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto 10 m and per cum initial lift upto 1.5 m. (Without involving the contractors for specified works ) <b>Soft rock 1.33 Cum/Day</b>	263.20
COM_MWRK-4	( <b>Manual</b> )Excavation in hard rock, including boulders upto 0.30 m dia. for foundations of canal cross drainage and other appurtenant structures and placing excavated stuff neatly in specified dump area or disposing off the same as directed etc., complete with initial lead upto 10 m and per cum initial lift upto 1.5 m. (Without involving the contractors for specified works ) <b>Hard rock 0.67Cum/ day</b>	522.40

COM-LDLFT

## Chapter VII

**LEAD/LIFT/LOADING & UNLOADING CHARGES**  
**(WLL BE WITH E-N-C & TO INCORPORATE CHANGES YEARLY/ AS NEEDED)**  
**FOR THE YEAR : 2016-17**

**LEAD, LIFT, LOADING AND UNLOADING CHARGES FOR MATERIALS**

COM-LDLFT

1. For total lead upto 150 m ( including initial lead ) lead charges by head load only shall be adopted irrespective of mode of conveyance.
2. For total lead exceeding 150 m conveyance by mechanical means only shall be adopted irrespective of mode of conveyance.
3. The rates for loading at quarry including idle hire charges of trucks and hire charges per for each kilometer and upto 5 km are cumulative and inclusive of total charges for preceding lead.
4. Unless otherwise specified lead charges for Earth / Sand / Gravel / Aggregates and Stones are for loose volume and not for compacted or in-situ volume.
5. The rates for lift charges,lead charges, hire charges are cumulative and inclusive of rates for preceding lift,lead and hire charges
6. Lift charges are not payable where conveyance of materials is by mechanical means to final placing point.
7. Loading and unloading charges are not payable for conveyance by head load.
8. Loading charges are not payable for conveyance by mechanical means for disposal of excavated materials beyond initial lead of 50 m wherever specified.
9. Loading and unloading charges are not payable for conveyance by mechanical means for disposal of excavated materials beyond initial lead of 1 km wherever specified.
10. The rates for unloading of materials except earth, sand, gravel, coarse aggregate, rubble, size stone and cut stone are inclusive of stacking.
11. Hire charges are per 1KM for tippers and trucks for transport of materials from work site to dump yard and other places are cumulative& includes previous km upto 5 kms
12. The lead & lift charges are inclusive of contractor's profit and overhead charges of

13.615%

FOR THE YEAR: 2016-17

COM-LDLFT-1

**A. (Lead) Conveyance Charges for materials by head load**

SI No.	Total distance ( Total lead includes initial lead )	Earth / Sand /Gravel / Murram/ Lime/ Surki/ Size stone / Cut stone Rubble / Coarse aggregate Rs/ Cum	Cement / Reinforcement steel Str steel Rs / tonne	PCC slab/ Shahbad slab / CC block/ BS slab/ Late-rite / Wood Rs / cum
1	2	3	4	5
1	Total lead upto 50 m (covered by item rate)	initial lead	initial lead	initial lead
2	Total lead upto 100 m	56.80	33.10	72.30
3	Total lead upto 150 m	113.60	66.30	144.60

- Notes: 1. No loading or unloading charges are admissible for conveyance by head load.  
 2. For total lead exceeding 150 m conveyance charges by mechanical means only shall be adopted irrespective of mode of conveyance.  
 3. The Lead Charges are inclusive of 13.615% Contractor Profit and Overhead charges

COM-LDLFT-2

**B.( Lead) Conveyance charges for machinery per kilometer for transporting materials by tippers and trucks excluding loading, unloading and idle hire charges of machinery.**

FOR THE YEAR: 2016-17

( No loading and unloading charges allowed for machinery loading and unloading )

SI No.	Distance	(Lead) charges for trucks and tippers for Earth / Sand /Gravel / Murram/ Lime/ Surki/ per cu.meter	(Lead) charges for trucks and tippers for Rubble/Size stones/ Cut Stones/ Coarse aggregate per cu.meter	(Lead) charges for trucks and tippers for Cement/ Steel/ RCC poles/ AC & GI sheets/ Packed materials/tonne	(Lead) charges for trucks and tippers per cu.meter for PCC slabs/ Shahbad slabs/ CC & Laterite blocks/ Wood/ cum	(Lead) charges for per cu.meter for water/ 1000 litres	(Lead) charges for trucks per 1000 Nos. of Bricks
1	2	3	4	5	6	7	8
1	Lead upto 1 km	31.50	30.40	19.00	44.70	18.70	50.70
2	Lead upto 2 km	44.10	42.50	26.60	62.60	26.20	70.90
3	Lead upto 3 km	58.80	58.80	36.70	86.50	35.00	94.50
4	Lead upto 4 km	71.40	71.40	44.60	105.00	42.50	114.80
5	Lead upto 5 km	84.00	84.00	52.50	123.50	50.00	135.10
6	for Every km beyond 5 km upto 30 km	12.60	12.60	7.90	18.50	7.50	20.30
7	for Every km beyond 30 km	10.50	10.50	6.60	15.40	6.30	16.90

Note: The Lead Charges are inclusive of 13.615% Contractor Profit and Overhead charges

COM-LDLFT-3

**C. LOADING AND UNLOADING CHARGES BY MANUAL MEANS (idle hire charges of trucks are not added)**

Sl No.	Description of item	Earth / Sand /Gravel Murrum/ / Surki/ Rs / cum	Rubble/size stone/ cut stone/ Coarse aggregate,Li me in Rs/cum	cement in Rs/tonne	steel in Rs./tonne	brick work Rs/1000 No
1	2	3	4	5	6	7
1	Loading	17.30	37.80	62.40	74.80	52.00
2	Unloading	8.65	18.90	62.40	74.80	52.00

Note: The Lead Charges are inclusive of 13.615% Contractor Profit and Overhead charges

COM-LDLFT-4

**D. LOADING AND UNLOADING CHARGES BY MANUAL MEANS (including idle hire charges of trucks )**

Sl No.	Description of item	Earth / Sand /Gravel Murrum/ / Surki/ Rs / cum	Rubble/size stone/ cut stone/ Coarse aggregate,Li me in Rs/cum	cement in Rs/tonne	steel in Rs./tonne	brick work Rs/1000 No
1	2	3	4	5	6	7
1	Loading	111.00	129.90	163.70	176.00	219.10
2	Unloading	40.00	64.95	163.70	176.00	219.10

Note: The Lead Charges are inclusive of 13.615% Contractor Profit and Overhead charges

COM-LDLFT-5

**E. LOADING AND UNLOADING CHARGES BY MECHANICAL MEANS (including idle hire charges of trucks)**

Sl No.	Description of item	Earth / Sand /Gravel Murrum/ / Surki/ Rs / cum	Rubble/size stone/ cut stone/ Coarse aggregate,Li me in Rs/cum
1	2	3	4
1	Loading	52.00	103.90
2	Unloading	15.90	15.90

Note: The Lead Charges are inclusive of 13.615% Contractor Profit and Overhead charges

COM-LDLFT-6

**F. LIFT CHARGES FOR MATERIALS BY HEAD LOAD**

Sl No.	Total lift ( Total lift includes initial lift )	Earth / Sand /Gravel Murrum/ Lime/ Surki/ Size stone / Cut stone Rubble / Coarse aggregate Rs / cum	Cement / Reinforce- ment steel Str steel Rs / tonne	PCC slab/ Shahbad slab / CC block/ BS slab / Laterite / Wood Rs / cum
1	2	3	4	5
1	Total lift upto 3 m (covered by item rate)	Initial lift	Initial lift	Initial lift
2	For Every 1.00 Lift beyond initial lift of 3 meters	6.60	4.80	8.80

**DETAILED DATA****LEAD / LIFT / LOADING & UNLOADING CHARGES - DATA RATES**

Note: The Lead Charges are inclusive of 13.615% Contractor Profit and Overhead charges

**I. GENERAL DATA FOR LEAD / LIFT / LOADING & UNLOADING:****A . DATA FOR LEAD CHARGES BY HEAD LOAD :**

For the purpose of working out conveyance charges by head load the category of materials as classified in ( I ) above are grouped together as under :

CATEGORY : Earth / Sand / Gravel / Murrum / Lime / Surki / Coarse aggregate /

Rubble stone / Size stone / Cut stone

In this group materials which are comparatively lighter and generally conveyed by head load by light / heavy mazdoor are included. Method of conveyance, approximate weight per load and time required to cover specified additional distance will be generally same

Therefore common data is considered for conveyance by head load for materials under this category.

CATEGORY : Cement in bag / Reinforcement steel / Structural steel sections

In this group the materials in packed / rolled / fabricated condition which are heavier per load compared to the materials under Category above and which can not be split into small quantities for the purpose of conveyance are included. The unit of measurement for these materials is per tonne.

CATEGORY : PCC slab / Shahabad stone slab / CC block / Laterite stone / BS slab / Wood

In this group the materials in moulded condition / cut to standard size which are heavier per load compared to materials under Category above are included.

COM-DTL-LDLFT-1

**A. (Lead) Conveyance Charges for materials by head load**  
**CATEGORY : Earth / Sand / Gravel / Murrum / Lime / Surki / Coarse aggregate / Rubble stone**

**/ Size stone / Cut stone****Lead: Upto 50 m :**

This is initial lead and cost is covered under item basic rate.

**Lead: Upto 100 m :**

Average distance to be covered beyond initial lead of 50 m	25	m
Average speed of conveyance by head load	60	m / minute
Round trip cycle time for 25 m considering 50 min/ hr working ( 2 x 25 x 60 / 50 / 60 )	1	min
No. of trips per day for additional lead ( 8 x 60 / 1 )	480	
Quantity of material by head load per load	0.015	cum
Quantity of material by head load per day ( 480 x 0.015 ) say	7	cum
Deploy one mazdoor for every 50 m additional lead beyond initial lead.		

Unit: 7 cum

SI No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mazdoor	Day	1	350	350
			Total Rs:		350
	Contractor's profit and overhead charges	13.615%			47.65
Total for materials under this Category	7	cum	Rs:	397.65	
		Rate per	cum	Rs:	56.80

**Lead: Upto 150 m :**

Average distance to be covered beyond initial of 50 m : 50 m

Deploy two mazdoors for conveyance beyond initial lead.

Unit: 7 cum

SI No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mazdoor	Day	2	350	700
			Total Rs:		700
	Contractor's profit and overhead charges	13.615%			95.31
Total for materials under this Category	7	cum	Rs:	795.31	
		Rate per	cum	Rs:	113.60

**CATEGORY : Cement in bag / Reinforcement steel / Structural steel sections****Lead: Upto 50 m :**

This is initial lead and cost is covered under item basic rate.

**Lead: Upto 100 m :**

Average distance to be covered beyond initial lead of 50 m	25	m
Average speed of conveyance by head load	30	m / minute
Round trip cycle time for 25 m considering 50 min/ hr working ( 2 x 25 x 60 / 50 / 30 )	2	min
No. of trips per day for lead upto 100 m ( 8 x 60 / 2 )	240	
Quantity of material by head load per load	50	kg
Quantity of material by head load per day ( 240 x 50 / 1000 )	12	tonne
Deploy one mazdoor for every 50 m additional lead beyond initial lead.		

Unit: 12 tonne

SI No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement /steel handling mazdoor	Day	1	350	350
			Total Rs:		350
	Contractor's profit and overhead charges	13.615%			47.65
Total for materials under this Category	12.00	tonne	Rs:	397.65	
		Rate per	tonne	Rs:	33.10

**Lead: Upto 150 m :**

Average distance to be covered beyond initial of 50 m : 50 m

Deploy two mazdoors for conveyance beyond initial lead.

Unit: 12 tonne

SI No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Cement /steel handling Mazdoor	Day	2	350	700
			Total Rs:		700
	Contractor's profit and overhead charges	13.615%			95.31
Total for materials under this Category	12.00	tonne	Rs:	795.31	
		Rate per	tonne	Rs:	66.30

**CATEGORY : PCC slab / Shahabad stone slab / CC block / Laterite stone / BS slab / Wood****Lead: Upto 50 m :**

This is initial lead and cost is covered under item basic rate.

**Lead: Upto 100 m :**

Average distance to be covered beyond initial lead of 50 m	25	m
Average speed of conveyance by head load	40	m / minute
Round trip cycle time for 25 m considering 50 min/ hr working ( 2 x 25 x 60 / 50 / 40 )	1.5	min

No. of trips per day for lead upto 100 m ( 8 x 60 / 1.5 ) 320  
 Quantity of material by head load per load 0.017 cum  
 Quantity of material by head load per day ( 320 x 0.017 ) say 5.5 cum  
 Deploy one mazdoor for every 50 m additional lead beyond initial lead.

Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mazdoor	Day	1	350	350
			Total Rs:		350
	Contractor's profit and overhead charges	13.615%			47.65
	Total for materials under this Category	5.5	cum	Rs:	397.65
		Rate per	cum	Rs:	72.30

**Lead: Upto 150 m :**

Average distance to be covered beyond initial of 50 m : 50 m  
 Deploy two mazdoors for conveyance beyond initial lead.

Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Mazdoor	Day	2	350	700
			Total Rs:		700
	Contractor's profit and overhead charges	13.615%			95.31
	Total for materials under this Category	5.5	cum	Rs:	795.31
		Rate per	cum	Rs:	144.60

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**B.( Lead) Conveyance charges for machinery per kilometer for transporting materials by tippers and trucks excluding loading, unloading and idle hire charges of machinery.****CATEGORY : Earth / Sand / Gravel / Murrum / Lime / Surki /**

For total lead upto 1 km		Unit:	5	cum	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.15	446.70	67.01
	Fuel charges	Hour	0.15	299.90	44.99
2	Crew charges	Hour	0.15	177.50	26.63
			Total Rs:		138.63
	Contractor's profit and overhead charges	13.615%			18.87
	Total for	5	cum	Rs:	157.50
	Rate per cum				31.50

For total lead more than 1 km upto 2 km		Unit:	5	cum	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.21	446.70	93.81
	Fuel charges	Hour	0.21	299.90	62.98
2	Crew charges	Hour	0.21	177.50	37.28
			Total Rs:		194.07
	Contractor's profit and overhead charges	13.615%			26.42
	Total for	5	cum	Rs:	220.49
	Rate per cum				44.10

For total lead more than 2 km upto 3 km		Unit:	5	cum	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.28	446.70	125.08
	Fuel charges	Hour	0.28	299.90	83.97
2	Crew charges	Hour	0.28	177.50	49.70
			Total Rs:		258.75
	Contractor's profit and overhead charges	13.615%			35.23
	Total for	5	cum	Rs:	293.98
	Rate per cum				58.80

For total lead more than 3 km upto 4 km		Unit:	5	cum	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.34	446.70	151.88
	Fuel charges	Hour	0.34	299.90	101.97
2	Crew charges	Hour	0.34	177.50	60.35
			Total Rs:		314.20
	Contractor's profit and overhead charges	13.615%			42.78
	Total for	5	cum	Rs:	356.98
	Rate per cum				71.40

For total lead more than 4 km upto 5 km		Unit:	5	cum	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.4	446.70	178.68
	Fuel charges	Hour	0.4	299.90	119.96
2	Crew charges	Hour	0.4	177.50	71.00
			Total Rs:		369.64

	Contractor's profit and overhead charges	13.615%			50.33
	Total for	5	cum	Rs:	419.97
	Rate per cum				84.00

For lead beyond 5 km upto 30 km for every km			Unit:	5	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.06	446.70	26.80
	Fuel charges	Hour	0.06	299.90	17.99
2	Crew charges	Hour	0.06	177.50	10.65
			Total Rs:		55.44
	Contractor's profit and overhead charges	13.615%			7.55
	Total for	5	cum	Rs:	62.99
	Rate per cum				12.60

For lead beyond 30 km for every km			Unit:	5	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.05	446.70	22.34
	Fuel charges	Hour	0.05	299.90	15.00
2	Crew charges	Hour	0.05	177.50	8.88
			Total Rs:		46.22
	Contractor's profit and overhead charges	13.615%			6.29
	Total for	5	cum	Rs:	52.51
	Rate per cum				10.50

**CATEGORY : Coarse aggregate / Rubble stone / Size stone / Cut stone**

For total lead upto 1 km			Unit:	5	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck hire charges	Hour	0.15	414.10	62.12
	Fuel charges	Hour	0.15	299.90	44.99
2	Crew charges	Hour	0.15	177.50	26.63
			Total Rs:		133.74
	Contractor's profit and overhead charges	13.615%			18.21
	Total for	5	cum	Rs:	151.95
	Rate per cum				30.40

For total lead more than 1 km upto 2 km			Unit:	5	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck hire charges	Hour	0.21	414.10	86.96
	Fuel charges	Hour	0.21	299.90	62.98
2	Crew charges	Hour	0.21	177.50	37.28
			Total Rs:		187.22
	Contractor's profit and overhead charges	13.615%			25.49
	Total for	5	cum	Rs:	212.71
	Rate per cum				42.50

For total lead more than 2 km upto 3 km			Unit:	5	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.28	446.70	125.08
	Fuel charges	Hour	0.28	299.90	83.97
2	Crew charges	Hour	0.28	177.50	49.70
			Total Rs:		258.75
	Contractor's profit and overhead charges	13.615%			35.23
	Total for	5	cum	Rs:	293.98
	Rate per cum				58.80

For total lead more than 3 km upto 4 km			Unit:	5	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.34	446.70	151.88
	Fuel charges	Hour	0.34	299.90	101.97
2	Crew charges	Hour	0.34	177.50	60.35
			Total Rs:		314.20
	Contractor's profit and overhead charges	13.615%			42.78
	Total for	5	cum	Rs:	356.98
	Rate per cum				71.40

For total lead more than 4 km upto 5 km			Unit:	5	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.4	446.70	178.68
	Fuel charges	Hour	0.4	299.90	119.96
2	Crew charges	Hour	0.4	177.50	71.00

			Total Rs:	0.00	369.64
	Contractor's profit and overhead charges	13.615%			50.33
	Total for	5	cum	Rs:	419.97
					84.00

For lead beyond 5 km upto 30 km for every km			Unit:	5	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.06	446.70	26.80
	Fuel charges	Hour	0.06	299.90	17.99
2	Crew charges	Hour	0.06	177.50	10.65
			Total Rs:		55.44
	Contractor's profit and overhead charges	13.615%			7.55
	Total for	5	cum	Rs:	62.99
					12.60

For lead beyond 30 km for every km			Unit:	5	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.05	446.70	22.34
	Fuel charges	Hour	0.05	299.90	15.00
2	Crew charges	Hour	0.05	177.50	8.88
			Total Rs:		46.22
	Contractor's profit and overhead charges	13.615%			6.29
	Total for	5	cum	Rs:	52.51
					10.50

**CATEGORY : Cement/ Steel/ Pipes/ RCC poles/ AC & GI sheets/ Packed materials**

For total lead upto 1 km			Unit:	8	tonne
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck hire charges	Hour	0.15	414.10	62.12
	Fuel charges	Hour	0.15	299.90	44.99
2	Crew charges	Hour	0.15	177.50	26.63
			Total Rs:		133.74
	Contractor's profit and overhead charges	13.615%			18.21
	Total for	8	tonne	Rs:	151.95
					19.00

For total lead more than 1 km upto 2 km			Unit:	8	tonne
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck hire charges	Hour	0.21	414.10	86.96
	Fuel charges	Hour	0.21	299.90	62.98
2	Crew charges	Hour	0.21	177.50	37.28
			Total Rs:		187.22
	Contractor's profit and overhead charges	13.615%			25.49
	Total for	8	tonne	Rs:	212.71
					26.60

For total lead more than 2 km upto 3 km			Unit:	8	tonne
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.28	446.70	125.08
	Fuel charges	Hour	0.28	299.90	83.97
2	Crew charges	Hour	0.28	177.50	49.70
			Total Rs:		258.75
	Contractor's profit and overhead charges	13.615%			35.23
	Total for	8	tonne	Rs:	293.98
					36.70

For total lead more than 3 km upto 4 km			Unit:	8	tonne
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.34	446.70	151.88
	Fuel charges	Hour	0.34	299.90	101.97
2	Crew charges	Hour	0.34	177.50	60.35
			Total Rs:		314.20
	Contractor's profit and overhead charges	13.615%			42.78
	Total for	8	tonne	Rs:	356.98
					44.60

For total lead more than 4 km upto 5 km			Unit:	8	tonne
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.4	446.70	178.68
	Fuel charges	Hour	0.4	299.90	119.96

2	Crew charges	Hour	0.4	177.50	71.00
			Total Rs:		369.64
	Contractor's profit and overhead charges	13.615%			50.33
	Total for	8	tonne	Rs:	419.97
	Rate per tonne				52.50

			Unit:	8	tonne
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.06	446.70	26.80
	Fuel charges	Hour	0.06	299.90	17.99
2	Crew charges	Hour	0.06	177.50	10.65
			Total Rs:		55.44
	Contractor's profit and overhead charges	13.615%			7.55
	Total for	8	tonne	Rs:	62.99
	Rate per tonne				7.90

			Unit:	8	tonne
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.05	446.70	22.34
	Fuel charges	Hour	0.05	299.90	15.00
2	Crew charges	Hour	0.05	177.50	8.88
			Total Rs:		46.22
	Contractor's profit and overhead charges	13.615%			6.29
	Total for	8	tonne	Rs:	52.51
	Rate per tonne				6.60

**CATEGORY : PCC slabs/ Shahabad slabs/ BS slabs/ CC & Laterite blocks/ Wood**

			Unit:	3.4	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck hire charges	Hour	0.15	414.10	62.12
	Fuel charges	Hour	0.15	299.90	44.99
2	Crew charges	Hour	0.15	177.50	26.63
			Total Rs:		133.74
	Contractor's profit and overhead charges	13.615%			18.21
	Total for	3.4	cum	Rs:	151.95
	Rate per cum				44.70

			Unit:	3.4	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck hire charges	Hour	0.21	414.10	86.96
	Fuel charges	Hour	0.21	299.90	62.98
2	Crew charges	Hour	0.21	177.50	37.28
			Total Rs:		187.22
	Contractor's profit and overhead charges	13.615%			25.49
	Total for	3.4	cum	Rs:	212.71
	Rate per cum				62.60

			Unit:	3.4	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.28	446.70	125.08
	Fuel charges	Hour	0.28	299.90	83.97
2	Crew charges	Hour	0.28	177.50	49.70
			Total Rs:		258.75
	Contractor's profit and overhead charges	13.615%			35.23
	Total for	3.4	cum	Rs:	293.98
	Rate per cum				86.50

			Unit:	3.4	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.34	446.70	151.88
	Fuel charges	Hour	0.34	299.90	101.97
2	Crew charges	Hour	0.34	177.50	60.35
			Total Rs:		314.20
	Contractor's profit and overhead charges	13.615%			42.78
	Total for	3.4	cum	Rs:	356.98
	Rate per cum				105.00

			Unit:	3.4	cum
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.4	446.70	178.68

	Fuel charges	Hour	0.4	299.90	119.96
2	Crew charges	Hour	0.4	177.50	71.00
			Total Rs:		369.64
	Contractor's profit and overhead charges	13.615%			50.33
	Total for	3.4	cum	Rs:	419.97
	Rate per cum				123.50

	For lead beyond 5 km upto 30 km for every km	Unit:	3.4	cum	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.06	446.70	26.80
	Fuel charges	Hour	0.06	299.90	17.99
2	Crew charges	Hour	0.06	177.50	10.65
			Total Rs:		55.44
	Contractor's profit and overhead charges	13.615%			7.55
	Total for	3.4	cum	Rs:	62.99
	Rate per cum				18.50

	For lead beyond 30 km for every km	Unit:	3.4	cum	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Tipper hire charges	Hour	0.05	446.70	22.34
	Fuel charges	Hour	0.05	299.90	15.00
2	Crew charges	Hour	0.05	177.50	8.88
			Total Rs:		46.22
	Contractor's profit and overhead charges	13.615%			6.29
	Total for	3.4	cum	Rs:	52.51
	Rate per cum				15.40

**CATEGORY : water**

	For total lead upto 1 km	Unit:	8000	litres	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Water tanker hire charges	Hour	0.15	402.50	60.38
	Fuel charges	Hour	0.15	299.90	44.99
2	Crew charges	Hour	0.15	177.50	26.63
			Total Rs:		132.00
	Contractor's profit and overhead charges	13.615%			17.97
	Total for	8000	litres	Rs:	149.97
	Rate per 1000 litres				18.70

	For total lead more than 1 km upto 2 km	Unit:	8000	litres	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Water tanker hire charges	Hour	0.21	402.50	84.53
	Fuel charges	Hour	0.21	299.90	62.98
2	Crew charges	Hour	0.21	177.50	37.28
			Total Rs:		184.79
	Contractor's profit and overhead charges	13.615%			25.16
	Total for	8000	litres	Rs:	209.95
	Rate per 1000 litres				26.20

	For total lead more than 2 km upto 3 km	Unit:	8000	litres	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Water tanker hire charges	Hour	0.28	402.50	112.70
	Fuel charges	Hour	0.28	299.90	83.97
2	Crew charges	Hour	0.28	177.50	49.70
			Total Rs:		246.37
	Contractor's profit and overhead charges	13.615%			33.54
	Total for	8000	litres	Rs:	279.91
	Rate per 1000 litres				35.00

	For total lead more than 3 km upto 4 km	Unit:	8000	litres	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Water tanker hire charges	Hour	0.34	402.50	136.85
	Fuel charges	Hour	0.34	299.90	101.97
2	Crew charges	Hour	0.34	177.50	60.35
			Total Rs:		299.17
	Contractor's profit and overhead charges	13.615%			40.73
	Total for	8000	litres	Rs:	339.90
	Rate per 1000 litres				42.50

	For total lead more than 4 km upto 5 km	Unit:	8000	litres	
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.

1	Water tanker hire charges	Hour	0.4	402.50	161.00
	Fuel charges	Hour	0.4	299.90	119.96
2	Crew charges	Hour	0.4	177.50	71.00
			Total Rs:		351.96
	Contractor's profit and overhead charges	13.615%			47.92
	Total for	8000	litres	Rs:	399.88
	Rate per 1000 litres				50.00

For lead beyond 5 km upto 30 km for every km			Unit:	8000	litres
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Water tanker hire charges	Hour	0.06	402.50	24.15
	Fuel charges	Hour	0.06	299.90	17.99
2	Crew charges	Hour	0.06	177.50	10.65
			Total Rs:		52.79
	Contractor's profit and overhead charges	13.615%			7.19
	Total for	8000	litres	Rs:	59.98
	Rate per 1000 litres				7.50

For lead beyond 30 km for every km			Unit:	8000	litres
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Water tanker hire charges	Hour	0.05	402.50	20.13
	Fuel charges	Hour	0.05	299.90	15.00
2	Crew charges	Hour	0.05	177.50	8.88
			Total Rs:		44.01
	Contractor's profit and overhead charges	13.615%			5.99
	Total for	8000	litres	Rs:	50.00
	Rate per 1000 litres				6.30

**CATEGORY : Bricks (as adopted by R&B(Buildings))**

For total lead upto 1 km			Unit:	3000	bricks
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck 10 T charges	Hour	0.15	414.10	62.12
	Fuel charges	Hour	0.15	299.90	44.99
2	Crew charges	Hour	0.15	177.50	26.63
			Total Rs:		133.74
	Contractor's profit and overhead charges	13.615%			18.21
	Total for	3000	bricks	Rs:	151.95
	Rate per 1000 bricks				50.70

For total lead more than 1 km upto 2 km			Unit:	3000	bricks
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck 10 T charges	Hour	0.21	414.10	86.96
	Fuel charges	Hour	0.21	299.90	62.98
2	Crew charges	Hour	0.21	177.50	37.28
			Total Rs:		187.22
	Contractor's profit and overhead charges	13.615%			25.49
	Total for	3000	bricks	Rs:	212.71
	Rate per 1000 bricks				70.90

For total lead more than 2 km upto 3 km			Unit:	3000	bricks
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck 10 T charges	Hour	0.28	414.10	115.95
	Fuel charges	Hour	0.28	299.90	83.97
2	Crew charges	Hour	0.28	177.50	49.70
			Total Rs:		249.62
	Contractor's profit and overhead charges	13.615%			33.99
	Total for	3000	bricks	Rs:	283.61
	Rate per 1000 bricks				94.50

For total lead more than 3 km upto 4 km			Unit:	3000	bricks
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck 10 T charges	Hour	0.34	414.10	140.79
	Fuel charges	Hour	0.34	299.90	101.97
2	Crew charges	Hour	0.34	177.50	60.35
			Total Rs:		303.11
	Contractor's profit and overhead charges	13.615%			41.27
	Total for	3000	bricks	Rs:	344.38
	Rate per 1000 bricks				114.80

For total lead more than 4 km upto 5 km                          Unit: 3000                          bricks

Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck 10 T charges	Hour	0.4	414.10	165.64
	Fuel charges	Hour	0.4	299.90	119.96
2	Crew charges	Hour	0.4	177.50	71.00
			Total Rs:		356.60
	Contractor's profit and overhead charges	13.615%			48.55
	Total for	3000	bricks	Rs:	405.15
	Rate per 1000 bricks				135.10

For lead beyond 5 km upto 30 km for every km			Unit:	3000	bricks
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck 10 T charges	Hour	0.06	414.10	24.85
	Fuel charges	Hour	0.06	299.90	17.99
2	Crew charges	Hour	0.06	177.50	10.65
			Total Rs:		53.49
	Contractor's profit and overhead charges	13.615%			7.28
	Total for	3000	bricks	Rs:	60.77
	Rate per 1000 bricks				20.30

For lead beyond 30 km for every km			Unit:	3000	bricks
Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Truck 10 T charges	Hour	0.05	414.10	20.71
	Fuel charges	Hour	0.05	299.90	15.00
2	Crew charges	Hour	0.05	177.50	8.88
			Total Rs:		44.59
	Contractor's profit and overhead charges	13.615%			6.07
	Total for	3000	bricks	Rs:	50.66
	Rate per 1000 litres				16.90

**C. LOADING AND UNLOADING CHARGES BY MANUAL MEANS (idle hire charges of trucks are not added)**

MORD -data					
1	Loading of Lime, Aggregate, Stone Boulder,				
a) Loading	Brick Aggregate, Kankar, Building Rubbish, Building Rubbish, Crushed Slag, Stone for Masonry	Unit	Quantity	Rate Rs.	Amount Rs.
	Work by manual means including a lead upto 30 m				
	Unit = cum				
	Taking output = 5.5 cum				
	Labour				
	Head Mazdoor	day	0.02	400.00	8.00
	Mazdoor	day	0.5	350	175.00
		Total in Rs.			183.00
	contractor's profit and overhead charges	13.615%			24.92
	Rate per cum =			Rs.	37.80

b) Unloadin 50% of the loading charges 18.90

2	Loading of Earth, Sand, Moorum, Manure, Fly ash by manual means including a lead upto 30 m	Unit	Quantity	Rate Rs.	Amount Rs.
a) Loading	Unit = cum				
	Taking output = 5.5 cum				
	Labour				
	Head Mazdoor	day	0.01	375.00	3.75
	Mazdoor	day	0.25	320	80.00
		Total in Rs.			83.75
	contractor's profit and overhead charges	13.615%			11.40
	Rate per cum =			Rs.	17.30

b) Unloadin 50% of the loading charges 8.65

3	Loading of Bricks by manual means including a lead upto 30 m	Unit	Quantity	Rate Rs.	Amount Rs.
a) Loading	Unit = 1000 Nos.				
	Taking output = 2000 Nos				
	a) Labour				
	Head Mazdoor	day	0.01	400.00	4.00
	Mazdoor	day	0.25	350	87.50
	Cost for 2000 Nos. =				91.50
	contractor's profit and overhead charges	13.615%			12.46
	Rate per cum =			Rs.	52.00

100% of loading charges

b) Unloadin i.e., Rs. 52.00

4	Loading of Cement by manual means	Unit	Quantity	Rate Rs.	Amount Rs.

a) Loading	including a lead upto 30 m					
	Unit = 1 t					
	Taking output = 10 t					
a) Labour						
Head mazdoor		day	0.06	400.00	24.00	
Mazdoor		day	1.5	350	525.00	
Cost for 10 t =					549.00	
contractor's profit and overhead charges	13.615%					74.75
Rate per 1 tonne =				Rs.	62.40	

b) Unloadin 100% of loading charges i.e 62.40

5	Loading of Structural Steel, Steel Bars by man	Unit	Quantity	Rate Rs.	Amount Rs.
a) Loading	including a lead upto 30 m				
	Unit = 1 t				
	Taking output = 10 t				
a) Labour					
head Mazdoor		day	0.07	400.00	28
Mazdoor		day	1.8	350	630.00
Cost for 10 t =					658.00
contractor's profit and overhead charges	13.615%				89.59
Rate per 1 tonne =				Rs.	74.80

100% of loading charges

b) Unloadin i.e., Rs. 74.80

6	Loading of Bricks - 1000 Nos (Regular sizes - 225x140x70 mm) by manual means including	Unit	Quantity	Rate Rs.	Amount Rs.
a) Loading	225x140x70 mm) by manual means including				
	Unit = 1000 Nos.				
	Taking output = 2000 Nos.				
a) Labour					
head Mazdoor		day	0.01	400.00	4
Mazdoor		day	0.25	350.00	87.50
Cost for 2000 Nos. =					91.50
contractor's profit and overhead charges	13.615%				12.46
Rate per 1000 Nos. =				Rs.	52.00

100% of loading charges

b) Unloadin i.e., Rs. 52.00

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#### D. LOADING AND UNLOADING CHARGES BY MANUAL MEANS (including idle hire charges of trucks )

1	Loading of Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Building Rubbish, Crushed Slag, Stone for Masonry by manual means including a lead upto 30 m	Unit	Quantity	Rate Rs.	Amount Rs.
a) Loading					
	Unit = cum				
	Taking output = 5.5 cum				
a) Labour					
Head Mazdoor		day	0.02	400.00	8.00
Mazdoor		day	0.5	350	175.00
b) Machinery					
Truck 10t		hour	0.5	891.50	445.75
Cost for 5.5 cum =					628.75
contractor's profit and overhead charges	13.615%				85.60
Rate per cum =				Rs.	129.90

b) Unloadin 50% of the loading charges i.e., 64.95

2	Loading of Earth, Sand, Moorum, Manure, Fly ash by manual means including a lead upto 30 m	Unit	Quantity	Rate Rs.	Amount Rs.
a) Loading					
	Unit = cum				
	Taking output = 5.5 cum				
a) Labour					
Head Mazdoor		day	0.01	400.00	4.00
Mazdoor		day	0.25	350	87.50
b) Machinery					
Truck 10t		hour	0.5	891.50	445.75
Cost for 5.5 cum =					537.25
contractor's profit and overhead charges	13.615%				73.15
Rate per cum =				Rs.	111.00

b) Unloadin	Unloading of Earth, Sand, Moorum, Manure, Fly ash by manual means including a lead upto 30 m	Unit	Quantity	Rate Rs.	Amount Rs.
	Unit = cum				
	Taking output = 5.5 cum				
a) Labour					
Mate		day	0.005	400.00	2.00
Mazdoor(unskilled)		day	0.125	350	43.75

b) Machinery					
Truck 10t		hour	0.166	891.50	147.99
Cost for 5.5 cum =					193.74
contractor's profit and overhead charges	13.615%				26.38
Rate per cum =				Rs.	40.00

3	Loading of Bricks by manual means	Unit	Quantity	Rate Rs.	Total
a) Loading	including a lead upto 30 m				
Unit = 1000 Nos.					
Taking output = 2000 Nos					
a) Labour					
Mate		day	0.01	400.00	4.00
Mazdoor(unskilled)		day	0.25	350	87.50
b) Machinery					
Truck 10t		hour	0.33	891.50	294.20
Cost for 2000 Nos. =					385.70
contractor's profit and overhead charges	13.615%				52.51
Rate per 1000 bricks =				Rs.	219.10

b) Unloadin 100% of loading charges i.e 219.10

4	Loading of Cement by manual means	Unit	Quantity	Rate Rs.	Total
a) Loading	including a lead upto 30 m				
Unit = 1 t					
Taking output = 10 t					
a) Labour					
Mate		day	0.06	400.00	24.00
Mazdoor(unskilled)		day	1.5	350	525.00
b) Machinery					
Truck 10t		hour	1	891.50	891.50
Cost for 10 t =					1440.50
contractor's profit and overhead charges	13.615%				196.12
Rate per 1 tonne =				Rs.	163.70

b) Unloadin 100% of loading charges i.e 163.70

5	Loading of Structural Steel, Steel Bars by man	Unit	Quantity	Rate Rs.	Total
a) Loading	including a lead upto 30 m				
Unit = 1 t					
Taking output = 10 t					
a) Labour					
Mate		day	0.07	400.00	28.00
Mazdoor(unskilled)		day	1.8	350	630.00
b) Machinery					
Truck 10t		hour	1	891.50	891.50
Cost for 10 t =					1549.50
contractor's profit and overhead charges	13.615%				210.96
Rate per 1 tonne =				Rs.	176.00

b) Unloadin 100% of loading charges i.e 176.00

#### E. LOADING AND UNLOADING CHARGES BY MECHANICAL MEANS (including idle hire charges of trucks)

1	Loading of Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry work by mechanical means including a lead upto 30 m	Unit	Quantity	Rate Rs.	Total
a) Loading	Placing tipper at loading point, loading with front end loader excluding time for haulage and return trip.				
Unit = cum					
Taking output = 5.5 cum					
Time required for					
i) Positioning of tipper at loading point	Min	1			
ii) Loading by front end loader 1 cum bucket capacity	Min	7.33			
@ 45 / 25 cum per hour					
iii) Manoeuvring, reversing, dumping and turn for return	Min	-			
iv) Waiting time, unforeseen contingencies, etc	Min	2			
Total	Min	10.33			
a) Machinery					
Tipper 10 t capacity	hour	0.17	924.10	159.10	
Front end-loader 1 cum bucket capacity @ 45	hour	0.12	2815.90	344.01	
per hour					
Cost for 5.5 cum =					503.11
b) contractor's profit and overhead charges	13.615%				68.50
Rate per cum = (a+b)/5.5				Rs.	103.90

b) Unloadin see below. COM-LDLFT-5-B

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2	Loading of Earth, sand, Moorum, Manure, Flyash, by mechanical means including a lead upto 30 m Placing tipper at loading point, loading with front end loader excluding time for haulage and return trip.	Unit	Quantity	Rate Rs.	Total
a) Loading	Unit = cum Taking output = 5.5 cum Time required for i) Positioning of tipper at loading point Min 1 ii) Loading by front end loader 1 cum bucket ca Min @ 45 / 25 cum per hour 3.3 iii) Waiting time, unforeseen contingencies, etc Min 2 Total Min 6.3				
	a) Machinery Tipper 10 t capacity hour 0.105 924.10 97.03 Front end-loader 1 cum bucket capacity @ 45 hour 0.055 2815.90 154.87 per hour Cost for 5.5 cum = 251.90 b) contractor's profit and overhead charges 13.615% 34.30 Rate per cum = (a+b)/5.5 Rs. 52.00				
b) Unloading	Unloading of Earth, sand, Moorum, Manure, Flyash, lime, Aggregate, Stone boulder, Brick aggregate, Kankar, Building rubbish, Manure, Crushed Slag Flyash, Stone for Masonry work by mechanical means including a lead upto 30 m	Unit	Quantity	Rate Rs.	Total
	Placing tipper at unloading point, excluding time for haulage and return trip. Taking output = 5.5 cum Time required for i) Positioning of tipper at loading point Min 1 ii) Loading by front end loader 1 cum bucket ca Min @ 45 / 25 cum per hour 2 iii) Waiting time, unforeseen contingencies, etc Min 2 Total 5				
	a) Machinery Tipper 10 t capacity hour 0.08 924.10 77.01 Cost for 5.5 cum = 77.01 b) contractor's profit and overhead charges 13.615% 10.48 Rate per cum = (a+b)/5.5 15.90				

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**F. LIFT CHARGES FOR MATERIALS BY HEAD LOAD**

**FOR CATEGORY : Earth / Sand / Gravel / Murrum / Lime / Surki / Coarse aggregate /  
Rubble stone / Size stone / Cut stone**

**Lift : Upto 3.00 m**

This is the initial lift and forms integral part of the activities in the basic rate of work item.  
Lift charges are admissible only lifting effort beyond initial lift specified in the work item.

**Lift : ADDITIONAL LIFT CHARGES FOR each 1 METER LIFT BEYOND 3 M INITIAL LIFT**

For additional lift of 1m beyond initial lift of 3 m  
one meter lift is taken equivalent to 6 meters lead

average speed of conveyance by head load 60 m/minute  
Round trip cycle time for 1.00 m considering 50 min/ hr working

1 x 6 x 60 / 50 / 60 ) 0.12 min

No. of trips per day for lift 1.00 m above 3 m ( 8 x 60 / 0.12 ) 4000

Quantity of material by head load 0.015 cum

Quantity of material by head load per day ( 4000 x 0.015 ) 60 cum

Deploy 1 mazdoor for every additional lift of 1.0 m beyond initial lift.

Lift : Upto 3.00 m for materials under this Category Unit: 60 cum

Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	2	3	4	5	6
	Mazdoor	Day	1.00	350.00	350.00
	contractor's profit and overhead charges	13.615%			47.65
	Total Rs: for 60 cum				397.65
	Rate per cum				6.60

**FOR CATEGORY: Cement bag / Reinforcement steel / Structural steel sections**

**Lift : Upto 3.00 m**

This is the initial lift and forms integral part of the activities in the basic rate of work item.  
Lift charges are admissible only lifting effort beyond initial lift specified in the work item.

**Lift : ADDITIONAL LIFT CHARGES FOR each 1 METER LIFT BEYOND 3 M INITIAL LIFT**

For additional lift of 1m beyond initial lift of 3 m

one meter lift is taken equivalent to 6 meters lead

average speed of conveyance by head load 25 m/minute

Round trip cycle time for 1.00 m considering 50 min/ hr working

1 x6x 60 / 50 / 25 )		0.29	min
No. of trips per day for additional lift 1.0 m above 3 m ( 8 x 60 / 0.29)	1655		
Quantity of material by head load	50	kgs	
Quantity of material by head load per day ( 1655x50x 0.015 )	83	tons	
Deploy 1 mazdoor for every additional lift of 1.5 m beyond initial lift.or2/3 mazdoor			

Lift : Upto 3.00 m for materials under this Category      Unit: 83      TONS

Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	2	3	4	5	6
	Mazdoor	Day	1.00	350.00	350.00
	contractor's profit and overhead charges	13.615%			47.65
	Total Rs: for 83 Tonnes				397.65
	Rate per tonne				4.80

**FOR CATEGORY : PCC slab / Shahabad stone slab / CC block / Laterite stone / BS slab / Wood**

**Lift : Upto 3.00 m**

This is the initial lift and forms integral part of the activities in the basic rate of work item.

Lift charges are admissible only lifting effort beyond initial lift specified in the work item.

**Lift : ADDITIONAL LIFT CHARGES FOR EACH 1 METER LIFT BEYOND 3 M INITIAL LIFT**

For additional lift of 1m beyond initial lift of 3 m  
one meter lift is taken equivalent to 6 meters lead  
average speed of conveyance by head load

40 m/minute

Round trip cycle time for 1.00 m considering 50 min/ hr working

1 x6x 60 / 50 / 40 )	0.18	min
No. of trips per day for lift 1.0 m ( 8 x 60 / 0.18 )	2667	
Quantity of material by head load	0.017	cum
Quantity of material by head load per day ( 1667x 0.018 )	45	cum
Deploy 1 mazdoor for every additional lift of 1.5 m beyond initial lift.or2/3 mazdoor		

Lift : Upto 3.00 m for materials under Category      Unit: 45      cum

Sl No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	2	3	4	5	6
	Mazdoor	Day	1.00	350.00	350.00
	contractor's profit and overhead charges	13.615%			47.65
	Total Rs: for 45 cum				397.65
	Rate per cum				8.80

## HIRE CHARGES OF MACHINERY

FOR THE YEAR : 2016-17

S.No	Description of machinery	Unit	Hire charge in Rs	Fuel charge in Rs	Crew Charge in Rs.	Total in Rs
1	2	3	4	5	6	7
1	Agitator car / Transit mixer 2 cum	Hour	758.40	872.70	283.90	1915.00
2	Air compressor 5 cmm ( electric )	Hour	108.30	189.10	164.80	462.20
3	Air compressor 7 cmm ( diesel )	Hour	241.30	714.00	210.90	1166.20
4	Air compressor 7 cmm ( electric )	Hour	131.90	252.20	164.80	548.90
5	Air compressor 8.5 cmm ( diesel )	Hour	275.60	892.50	210.90	1379.00
6	Air compressor 8.5 cmm ( electric )	Hour	170.80	315.20	164.80	650.80
7	Air compressor 15 cmm ( electric )	Hour	138.80	700.50	175.80	1015.10
8	Angle Dozer 90 hp	Hour	1715.50	610.50	236.60	2562.60
9	Batching plant 0.5 cum( 6 cum/hr)	Hour	114.60	84.10	340.60	539.30
10	Batching plant 2 x 1.00 cum(15 cum/hr)	Hour	405.40	252.20	340.60	998.20
11	Batching plant 2 x 1.50 cum(50 cum/hr)	Hour	620.70	308.20	340.60	1269.50
12	Bending machine 3000 x 12 mm	Hour	42.60	84.10	131.80	258.50
13	Clamp shell and hoisting ropes	Hour	5.40	0.00	0.00	5.40
14	Concrete bucket 1.5 cum	Hour	15.80	0.00	0.00	15.80
15	Concrete hand mixer 45 / 30 ltr	Hour	5.50	0.00	0.00	5.50
16	Concrete mixer 300 / 200 ( diesel )	Hour	53.50	79.30	219.70	352.50
17	Concrete mixer 300 / 200 ltr ( electric )	Hour	51.70	28.00	219.70	299.40
18	Concrete mixer 600 / 400 ( diesel )	Hour	92.70	158.70	219.70	471.10
19	Concrete mixer 600 / 400 ltr ( electric )	Hour	91.00	56.00	219.70	366.70
20	Concrete paver 100 sqm / hr	Hour	356.50	0.00	421.80	778.30
21	Convey mucker	Hour	822.80	195.00	175.80	1193.60
22	Core drilling machine	Hour	319.00	238.00	283.90	840.90
23	Diesel generating set 30 KVA	Hour	65.80	634.70	131.80	832.30
24	Diesel generating set 50 KVA	Hour	85.10	952.10	131.80	1169.00
25	Diesel Loco 45 hp	Hour	381.60	535.50	164.80	1081.90
26	Dewatering pump 5 hp ( diesel )	Hour	10.20	79.30	111.10	200.60
27	Dewatering pump 5 hp ( electric )	Hour	3.00	28.00	83.30	114.30
28	Dewatering pump 10 hp ( diesel )	Hour	15.20	158.70	111.10	285.00
29	Dewatering pump 10 hp ( electric )	Hour	6.70	56.00	83.30	146.00
30	Dewatering pump 20 hp ( diesel )	Hour	48.30	317.40	111.10	476.80
31	Dewatering pump 20 hp ( electric )	Hour	12.30	112.10	83.30	207.70
32	Drifter	Hour	322.70	0.00	354.90	677.60
33	Drilling jumbo	Hour	368.40	42.80	175.80	587.00
34	Dumper 4.5 cum	Hour	580.70	399.90	227.10	1207.70
35	Geophysical Electric resistivity meter	Hour	99.00	0.00	0.00	99.00
36	Grouting pump	Hour	24.90	28.00	263.60	316.50
37	Guniting / sand blast equipment	Hour	110.10	0.00	219.70	329.80
38	Ice plant & accessories 30 t / day	Hour	170.20	798.60	131.80	1100.60
39	Jack hammer	Hour	19.80	0.00	329.60	349.40
40	Needle vibrator 40 mm ( petrol )	Hour	7.60	18.80	158.20	184.60
41	Needle vibrator 40 mm ( electric )	Hour	8.00	5.60	158.20	171.80
42	Needle vibrator 60 mm ( petrol )	Hour	8.20	28.20	158.20	194.60
43	Needle vibrator 60 mm ( electric )	Hour	9.70	8.40	158.20	176.30
44	Planing machine 4 m stroke	Hour	117.80	84.10	210.90	412.80
45	Plate shearing machine upto 12 mm	Hour	41.90	112.10	142.00	296.00
46	Pneumatic placer 0.5 cum	Hour	171.10	0.00	86.80	257.90
47	Pneumatic tamper	Hour	20.70	0.00	263.60	284.30
48	Pug cutting machine	Hour	6.40	2.80	0.00	9.20
49	Pusher leg	Hour	12.70	0.00	0.00	12.70
50	Road roller diesel 10 t	Hour	197.20	714.00	210.90	1122.10
51	Shovel 0.50 cum 75 hp	Hour	1003.10	476.00	236.60	1715.70

## HIRE CHARGES OF MACHINERY

FOR THE YEAR : 2016-17

S.No	Description of machinery	Unit	Hire charge in Rs	Fuel charge in Rs	Crew Charge in Rs.	Total in Rs
1	2	3	4	5	6	7
52	Shovel 0.85 cum 110 hp	Hour	1706.60	872.70	236.60	2815.90
53	Stationery derric crane	Hour	86.10	0.00	0.00	86.10
54	Tipper 5 cum	Hour	446.70	299.90	177.50	924.10
55	Tipping tub 1.5 cum	Hour	64.20	0.00	0.00	64.20
56	Tower crane 5 tonne	Hour	867.10	145.70	189.30	1202.10
57	Transformer 250 KVA	Hour	5041.00	0.00	0.00	5041.00
58	Truck 10 t	Hour	414.10	299.90	177.50	891.50
59	Truck mounted derric crane 5 t	Hour	519.70	299.90	177.50	997.10
60	Upright drilling machine/Grinder	Hour	22.50	28.00	198.90	249.40
61	Ventilation fan 20 hp	Hour	11.50	112.10	28.70	152.30
62	Vibratory pad foot roller 8 t	Hour	1342.20	1031.40	263.60	2637.20
63	Wagon drill	Hour	188.50	0.00	283.90	472.40
64	Water tanker 8000 ltr	Hour	402.50	299.90	177.50	879.90
65	Welding set	Hour	16.00	67.20	0.00	83.20
66	Winch 35 hp ( electric )	Hour	129.40	137.30	263.60	530.30
67	Tractor with 2T roller	Hour				345.00
68	Hydraulic Truck Crane 30T	Hour	3096.80	118.80	526.70	3742.30
69	Hydraulic Truck Crane 16T	Hour	2278.10	75.00	526.70	2879.80
70	Heavy Duty Airless Spray Painting Equipment	Hour	121.40			121.40
71	Concrete Placer Pump 25 Cum/Hr	Hour	1004.30	336.20	164.80	1505.30