

BILL OF QUANTITIES

Preamble

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, Conditions of Contract, Technical Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of ordered and carryout out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices tendered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.
3. The rates and prices tendered in the Priced Bill of Quantities shall, except in safer as it is otherwise provided under the Contract, include all constructional plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes and duties, together with all the general risks, liabilities and obligations set out or implied in the Contract.
4. The rates and prices shall be quoted entirely in Indian Currency.
5. A rate or price shall be entered against each item in the Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
6. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no Items are provided the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.
7. General directions and descriptions of work and materials are not necessarily repeated or summarized in the Bill of Quantities. References to be relevant sections of the contract documentation shall be made before entering rates or prices against each item in the Bill of Quantities.
8. The method of measurement of completed work for payment shall be in accordance with the specification for Road and Bridge Works published by the Ministry of Surface Transport (edition).
9. Errors will be corrected by the Employer for any arithmetic errors pursuant to Clause 29 of the Instructions to Bidders.
10. Rock is defined as all materials which, in the opinion of the Engineer, require blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for its removal, and which cannot be extracted by ripping with a tractor of at least 150 kw with a single rear mounted heavy duty ripper.

ABSTRACT OF COST

A	SITE CLEARENCE	Rs.	
B	EARTH WORK IN FORMATION	Rs.	
C	SUB-BASE AND BASE (NON-BITUMINOUS WORK)	Rs.	
D	BASE AND SURFACE COURSE (BITUMINOUS)	Rs.	
E	CULVERTS	Rs.	
F	SLOPE PROTECTION WORKS	Rs.	
TOTAL (A+B+C+D+E+F)		Rs.	

BILL OF QUANTITY

Item No.	Description	Unit	Quantity	Rate (Rs)	Amount in words	Amount (Rs)
1	2	3	4	5	6	7
A	SITE CLEARENCE					
1	Cutting of Trees, including Cutting of Trunks, Branches and Removal (Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 mtrs and earth filling in the depression/pit.)					
	(i) Girth from 300 mm to 600 mm	each	61.00			
	(ii) Girth from 600 mm to 900 mm	each	37.00			
	(iii) Girth from 900 mm to 1800 mm	each	17.00			
	(iv) Girth above 1800 mm	each	15.00			
2	Clearing and Grubbing Road Land. (Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.)					
	(ii) By Mechanical Means					
	A In area of light jungle	Hect.	5.28			
	B In area of thorny jungle	Hect.	9.60			
TOTAL A						

B		EARTH WORK IN FORMATION					
1		Excavation in soil in hilly area by mechanical means including cutting and trimming of side slopes and disposal of cut material.					
	(i)	Disposal of cut material with all lifts and lead upto 1000 metres.	cum	382137.75			
	(ii)	Disposing cut material on the valley side	cum	163773.32			
2		Excavation in hilly area in ordinary rock not requiring ballasting by mechanical means including cutting and trimming of slopes and disposal of cut material.					
	(i)	Case-I : Disposal of cut material with all lifts and lead upto 1000 metres.	cum	140787.59			
	(ii)	Case-II: Disposing cut material on the valley side	cum	60337.54			
3		Excavation in hilly areas in hard rock requiring blasting, by mechanical means including trimming of slopes and disposal of cut material.					
	(i)	Disposal of cut material with all lifts and lead upto 1000 metres.	cum	40225.03			
	(ii)	Disposing cut material on the valley side	cum	17239.30			
4		Construction of Rock fill Embankment (Construction of rock fill embankment with broken hard rock fragments of size not exceeding 300 mm laid in layers not exceeding 500 mm thick including filling of surface voids with stone spalls, blinding top layer with granular material, rolled with vibratory road roller, all complete as per clause 313)	cum	7977.71			

5		Construction of Embankment with Material Deposited from Roadway Cutting (Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2)	cum	67744.73			
6		Construction of Subgrade and Earthen Shoulders (Construction of subgrade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2)	cum	47296.43			
7		Compacting original ground supporting subgrade (Loosening of the ground upto a level of 500 mm below the subgrade level, watered, graded and compacted in layers to meet requirement of table 300-2 for subgrade construction.)	cum	172700.83			
8		Surface Drains in Hard Rock (Construction of unlined surface drain of average cross sectional area 0.4 sqm in ordinary rock to specified lines, grades, levels and dimensions as per approved design and to the requirement of clause 301 to 309. Excavated material to be used in embankment at site.)					
9	B	Mechanical Means	metre	459.97			
10		Construction of M20 grade lined surface drains specified lines, grades, levels and dimensions as per drawing or technical specification section 309 and 1700	metre	5739.43			

11		Turfing with Sods (Furnishing and laying of the live sods of perennial turf forming grass on embankment slope, verges or other locations shown on the drawing or as directed by the engineer including preparation of ground, fetching of rods and watering)	sqm	18000.00			
TOTAL B							
C		SUB-BASE AND BASE WORK (NON-BITUMINOUS WORK)					
1		Granular Sub-base with Close Graded Material (Table:- 400-1)					
	A	Plant Mix Method (Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401)					
	(i)	for grading- I Material	cum	7793.86			
	(iii)	for grading-III Material	cum	6691.38			
2		Inverted Choke (Construction of inverted choke by providing, laying, spreading and compacting screening B type/ coarse sand of specified grade in uniform layer on a prepared surface with motor grader and compacting with power roller etc)	cum	154.71			

3		Wet Mix Macadam (Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.)	cum	11933.85			
TOTAL C							
D		BASE AND SURFACE COURSE (BITUMINOUS)					
1		Prime coat (Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means.)	sqm	47735.38			
2		Tack coat (Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.)	sqm	95470.76			
3		Dense Graded Bituminous Macadam (Providing and laying dense bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5% by weight of total mix of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 507 complete in all respects.)					
(i)		for Grading I (40 mm nominal size)	cum	2864.12			

4		Bituminous Concrete (Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 % of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects)					
(i)		Case-I Using Bitumen 60/70 grade	cum	1909.42			
TOTAL D							
E		CULVERTS					
	1	Excavation for Structures (Earth work in excavation 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, backfilling the excavation earth to the extent required and utilising the remaining earth locally for road work.)					
		Ordinary soil	Cum	2064.35			
		Ordinary rock (not requiring blasting)	Cum	1376.23			
	2	Provide M15 plain cement concrete levelling course below culverts, pipe bedding ,pipe credle ,pipe encasing ,wingwalls, catch pits, parapet wall ,cross drains etc. complete as per Drawings and Technical Specification Clause 1500,1700 & 2100.	Cum	235.41			

	3	Provide M20 plain cement concrete levelling course in catch pit complete as per Drawings and Technical Specification Clause 1500,1700 & 2100.	Cum	8.43			
	4	Plain/Reinforced cement concrete M25 in sub-structure complete as per drawing and technical specifications	Cum	650.80			
	5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications	MT	72.51			
	6	Provide coursed rubble masonry in cement mortar 1:3 in wing wall ,head wall of pipe culvert, catch pits & apron complete as per Drawings and Technical Specification Clause 1400 and 2500.	Cum	446.27			
	7	Filling over pipe ,backfilling behind abutments, wing walls etc. with selected earthen material complete as per Technical Specification Clauses 305 and 2907.	Cum	1792.89			
	8	Providing ,Laying and jointing NP4 Reinforced Cement Concrete Pipe NP4 1200 mm diametre for culvert on concrete cradle bedding of in single row including flush joint with cement mortar 1:2 complete as per Technical specification clause 2905 and 2906.	RM	112.50			
	9	Provide 12mm thick cement mortar 1:3 plastering in catch pits complete as per Drawings and Technical Specification Clause 1312.	Sqm	395.35			

	10	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and technical specification.	Cum	498.24			
TOTAL E							
F		SLOPE PROTECTION WORKS					
	1	Excavation for Structures (Earth work in excavation 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, backfilling the excavation earth to the extent required and utilising the remaining earth locally for road work.)					
		(i) Ordinary Soil (Manual means)	Cum	3022.07			
		(ii) Ordinary rock (not requiring blasting) (Manual means)	Cum	2014.56			
	2	Plain cement concrete Grade M15 in open foundation complete as per drawing and technical specifications	Cum	489.92			
	3	Plain/Reinforced cement concrete Grade M15 for Parapet walls complete as per drawing and technical specifications	Cum	103.39			
	4	Random Rubble Masonry Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specification	Cum	7695.30			
	5	Granular Material Backfilling behind the abutment, wing wall and return walls complete as per drawing and Technical specification	Cum	426.64			

	6	Gabian Structure for Erosion Control, River Training Works and Protection works (Providing and constructing gabain structures for erosion control, river training works and protection works with wire crates of size 2 m x 1 m x 0.3 m each divided into 1m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 Kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 mm x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be securely tied with 4 mm galvanised steel wire.	Cum	1440.00			
TOTAL F							
TOTAL (A+B+C+D+E+F)							
Amount in words:							

Note:

- (1) Item for which no rate or price has been entered in will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities (refer: ITB Clause 13.2 and GCC Clause 43.3).
- (2) Unit rates and prices shall be quoted by the bidder in Indian rupee [ITB Clause 14.1].
- (3) Where there is a discrepancy between the rate in figures and words, the rates in words will govern. [ITB Clause 27.1(a)]
- (4) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by quantity, the unit rate quoted shall govern [ITB Clause 27.1 (b)].