

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

WORKS CONTRACT

DCC8462P11

DESCRIPTION OF WORK/SERVICE :-

Construction of a Two Storied Executive Trainee Hostel near Hostel No-4 including plumbing & sanitation works, apron, surface drain, landscaping, approach road, boundary wall and gate including Internal & External Electrification and Telephone connection as necessary as per working drawings, specifications and item of works including supply of all materials except cement.

GENERAL CONDITIONS OF CONTRACT(GCC)

MEMORANDUM OF AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_ Between OIL INDIA LIMITED a Company incorporated under the Companies Act 1956 and having its Registered Office at Duliajan in the District of Dibrugarh, Assam ( hereinafter called Company ) of the one part and Shri/Smti \_\_\_\_\_ and Shri/Smti \_\_\_\_\_ carrying on business as partners /proprietor under the firm name and style of M/s. \_\_\_\_\_ with the main Office at \_\_\_\_\_ in the District of \_\_\_\_\_ aforesaid ( hereinafter called 'Contractor') on the other part.

WITNESSETH:

1. a) The contractor hereby agrees to carry out the work set down in the Schedule of work which forms part-II of this Contract in accordance with the 1968 General Conditions of Contract of Oil India Limited and General Specifications read in conjunction with any drawings and Particular Specifications & instructions which forms Part-III of the contract utilizing any materials/services as offered by the Company as per Part-IV of the contract at \_\_\_\_\_ .

b) In this Contract all words and expressions shall have the same meaning as are respectively assigned to them in the 1968 General Conditions of Contract of Oil India Limited which the Contractor has perused and is fully conversant with before entering into this Contract.

c) The clauses of this contract and of the specifications set out hereunder shall be paramount and in the event of anything herein contained being inconsistent with any term or terms of the 1968 General Conditions of Contract of Oil India Limited, the said term or terms of the 1968 General conditions of Contract to the extent of such inconsistency, and no further, shall not be binding on the parties hereto.

2. i) The contractor shall provide all labour, supervision and transport and such specified materials described in part-II of the Contract including tools and plants as necessary for the work and shall be responsible for all royalties and other levies and his rates shall include for these. The work executed and materials supplied shall be to the satisfaction of the Company's Engineer and Contractor's rates shall include for all incidental and contingent work which although not specifically mentioned in this contract are necessary for its completion in a sound and workman like manner.

ii) Contractor shall have to produce necessary cash memos towards forest produce used against the contract to Head(Civil) used against this contract from the authorities prior to processing of final payment. In absence of cash memos, the final bill shall not be processed.

3. The Company's Engineer shall have power to:

a) Reduce the rates at which payments shall be made if the quality of work although acceptable is not upto the required standard set forth in the OIL Standard Specifications which have been perused and fully

understood by the Contractor.

b) Order the Contractor to remove any inferior material from the site and to demolish or rectify any work of inferior workmanship, failing which the Company's Engineer may arrange for any such work to be demolished or rectified by any other means at the Contractor's expenses.

c) Order the Contractor to remove or replace any workman who he (The Engineer) considers incompetent or unsuitable; the Engineer's opinion as to the competence and suitability of any workman engaged by the Contractor shall be final and binding on the Contractor.

d) Issue to the Contractor from time to time during the progress of the work such further drawings and instructions as shall be necessary for the purpose of proper and adequate execution and maintenance of the works and the Contractor shall carry out and be bound by the same.

e) Order deviations in Part II and III of this Contract. All such deviation orders shall be in writing and shall show the financial effect, if any, of such deviation and whether any extra time is to be allowed. The rates to be applied for such Deviation Order shall be the same for those appearing in Company's Schedule of Rate in force on the date of issue of such Deviation Order, to which the contractor has no objection.

4. The Contractor shall have no claim against the company in respect of any work which may be withdrawn but only for work actually completed under this contract. During the actual execution of the contract, if any, additional items (deviated items) are required, which are not covered in the tender, payments of such items shall be made at the current OIL schedule of rates. In case of positive variation in quantity of any item from the quantity mentioned in the schedule of work during the actual execution of work, the Contractor will have to carryout the positive varied quantity at the contract rate, or Internally estimated rate, whichever is lower.

5. The Company reserves the right to cancel this Contract at any time upon full payment of work done and the value of the materials collected by the contractor for permanent incorporation in the work under this contract particularly for execution of this contract upto the date of cancellation of the Contract. The valuation of the work done and the materials collected shall be estimated by the company's Engineer in presence of the contractor. The Contractor shall have no claim to any further payment whatsoever. The valuation would be carried out exparte if Contractor fails to turn up despite reasonable notice which will be binding on the Contractor.

6. The Contractor hereby undertakes to indemnify the Company against all claims which may arise under the under noted Acts :-

- i) The Mines Act.
- ii) The Minimum Wages Act, 1948.
- iii) The Workman's Compensation Act, 1923.
- iv) The Payment of wages Act, 1963.
- v) The Payment of Bonus Act, 1965.
- vi) The Contract Labour (Regulation & Abolition) Act, 1970 and the rules framed thereunder.
- vii) Employees Pension Scheme,1995.
- viii) Inter-State Migrant (Regulation of Employment and Condition of Service) Act. 1979.
- ix) The Employees Provident Fund and Miscellaneous Provisions Act, 1952.
- x) AGST Act.
- xi) Service Tax Act.

or any other Acts or Statute not here in above specifically mentioned having bearing over engagement of workers directly or indirectly for execution of work. The Contractor shall not make the Company liable to reimburse the Contractor for the statutory increase in the wage rates of the Contract Labour appointed by the Contractor. Such Statutory increase in the wage rates of Contract Labour shall be borne by the contractor.

7. The Contractor shall clear away all rubbish and surplus material from the site on completion of work and shall leave the site clean and tidy.

8. The Contractor must complete the work within 72 weeks of the written order to commence work. During the currency of the job, the work progress must be commensurate with the time elapsed. In the event of any delay on the contractor's part, he/she will be liable to pay to the company liquidated damages at the rate of

1/2% (Half p.c ) per week of the contract price of the item(s) delayed in completion and the maximum value of the liquidated damage will be 7.5% of the contract price of the item(s) delayed provided the item(s) delayed are not critical for commissioning and final utilization of the work. If, however, the item(s) delayed in completion are critical for commissioning and final utilisation of the work then the contractor will be liable to pay liquidated damages by way of penalty at the rate of 1/2% (Half percent) per week of delay of the total contract cost subject to a maximum of 7.5% of total contract cost.

The Head(Civil)'s certificate as to the criticality or otherwise of an item shall be final.

The payment of liquidated damages/penalty may be reduced or waived at the sole discretion of the Company whose decision in this regard will be final.

In the event of there being undue delay in execution of the Contract, the Company reserves the right to cancel the Contract and / or levy such additional damages as it deems fit based on the actual loss suffered by the company attributable to such delay. The company's decision in this regard shall be final.

9. In order to promote, safeguard and facilitate the general operational economic in the interest of the Company during the continuance of this contract the Contractor hereby agrees and undertakes not to take any direct or indirect interest and or support, assist, maintain or help any person or persons engaged in antisocial activities, demonstration, riots , or in any agitation prejudicial to the Company's interest and any such event taking shape or form at any place of the Company's works or and its neighbourhood.

10. The tendered all-inclusive Price (i.e. the Contract price) is Rs. \_\_\_\_\_  
(Rupees \_\_\_\_\_

\_\_\_\_\_ only.) but the Company shall pay the Contractor only for actual work done at the all inclusive rates set down in the Schedule of work part II of this Contract.

On account payment may be made, not oftener than monthly, upto the amount of 92.5% of the value of work done. Final payment will be made only after satisfactory completion of the work . Such final payment shall be based on the work actually done allowing for deviations and any deductions and the measurement shall be checked and certified correct by the Company's Engineer before any such final payment is made.

11. The contractor employing 20 (twenty ) or more workmen on any day preceding 12 months shall be required to obtain requisite licence at his cost from the appropriate Licensing Officer before undertaking any Contract work. The Contractor shall also observe the rules & regulations framed under the Contract Labour (Regulation & Abolition ) Act.

12. Wages shall be paid by the Contractor to the workmen directly without any intervention of any Jamadars or Thekadars and that the Contractor shall ensure that no amount by way of commission or otherwise be deducted/ recovered by the Jamadar from the wages of the workmen.

13. The Company for any reason whatsoever and of which the company shall be sole judge may terminate this Contract with a 24 hours notice in writing to the Contractor and in the event of Company's so doing the clause 5 here of shall prevail and the accounts between the parties will be in accordance therewith finalised.

14. The Contractor will not be allowed to construct any structure (for storage / housing purpose) with thatch, bamboo or any other inflammable materials within any company's fenced area.

15. The Contractor shall ensure that all men engaged by him/her are provided with appropriate protective clothing and safety wear in accordance with regulation 89(a) and 89(b) in the Oil mines Regulations 1984. The Company's representative shall not allow/accept those men who are not provided with the same.

16. All Statutory taxes levied by the Central and State Government or any other competent authority from time to time will be borne by Contractor and the amount of the contract specified in the contract is inclusive of all tax liabilities. However, any subsequent increase in such statutory taxes after bid opening day will be borne by the Company. Similarly if there is any decrease in such statutory taxes after bid opening, the Company shall recover the decreased amount of such taxes from the contractor.

17. The Contractor shall deploy local persons in all works.

18. The Contractor shall not engage minor labour below 18(eighteen) years of age under any circumstances.

19. The Contractor and his/her workmen shall strictly observe the rules and regulations as per Mines Act. (latest editions).

## 20. Special Conditions

a) The amount of retention money shall be released after 6(six) months from the date of issue of completion certificate from concerned department.

b) The contractor will be required to allow OIL Officials to inspect the work site and documents in respect of the workers' payment.

c) Contractor(s) whosoever is liable to be covered under the P.F. Act and contract cost is inclusive of P.F., must ensure strict compliance of provisions of Provident Fund and Miscellaneous Provisions Act, 1952 in addition to the various Acts mentioned elsewhere in this contract. Any contractor found violating these provisions will render themselves disqualified from any future tendering. As per terms of the contract, if applicable, the Contractor must deposit Provident Fund Contribution (covering Employee's & Employer's share) with the competent authority monthly under their direct code. The Contractor shall be required to submit documentary evidence of deposit of P.F. Contribution to the Company. In case of failure to provide such documentary evidence, the Company reserves the right to withhold the amount equivalent to 12% P.F. Contribution on wage component.

d) In case P.F. is not included in the contract cost and later on required to be deposited by the Contractor, the same will be reimbursed on production of documentary evidence of depositing the same to the authority concerned. 12% P.F. will be applicable on the wage component of the contract cost.

Based on contractor's declaration regarding P.F. & Wage component in last page of part-II, the same will be incorporated in the contract.

e) All safety precautions to be maintained by the Contractor at his own cost as per safety rules and regulations.

f) The Contractor shall use pump if needed for dewatering of pit while excavation for which no extra payment will be made.

g) The Contractor shall have to work during rainy seasons also.

h) Watch and ward, loss or damage to Company's property, theft and other incidental charges shall be Contractor's responsibility.

i) Efficient workmen to be engaged by the Contractor.

j) The Contractor's representative should report to Engineer-in-charge on all working day's at 7.00 A.M. and 3.00 P.M. for instructions.

k) Materials if rejected should be removed from site within 48(forty- eight) hours of rejection, failing which the Company reserves the right to get the rejected materials removed at the risk and cost of the Contractor.

l) The Company reserves the right to get the part or whole work complete at the risk and cost of the Contractor if he fails to complete the work within the stipulated time without any valid reason. The Company's decision shall be final and binding on the Contractor.

m) The Contractor shall obtain labour clearance within 7(seven) days of signing the Contract.

n) Water that may accumulate on the site during progress of the works or in trenches and excavations from other than accepted risks shall be removed from the site to entire satisfaction of the Engineer-in-charge and at the Contractor's expense.

o) The Contractor shall be in a position to execute 2(two) locations simultaneously.

p) If required, the Contractor shall have to work in two shifts for which no extra payment will be admissible to him/them.

q) If needed water and electricity will have to be arranged by the Contractor at his own cost.

r) The Contractor and his workmen are to be strictly observed the safety precautionary rules as per Mines Act (Latest edition) while executing the work.

s) The Contractor shall have to provide temporary latrine facilities in all the entire work site for use of their workmen during progress of work.

t) The contractor himself ( the signatory of the contract ) must visit the site at least twice in a week as fixed for taking necessary instruction from the Engineer-in charge.

u) The program of works to be submitted in the form of Bar Chart within 3 days of receipt of work order. work. twice in a week for necessary technical guidance and advices from Engineer- in-charge or site-in-charge.

## 21. SPECIAL INSTRUCTION

The contractor must quote considering the prevailing minimum Labour wage rate for each day of work. The Contract cost is based on minimum wage of 0.00 ( ).

## 22. ARBITRATION :

Any dispute under this contract will be settled through Arbitration as per Indian Arbitration and Conciliation Act, 1996.

Place of Arbitration : DULIAJAN .

## 23. FORCE MAJEURE :

Force Majeure (exemption) Clause of the International Chamber of Commerce (ICC Publication No. 421) is hereby incorporated in this contract.

## 24. LB. VERIFICATION REPORT AND SECURITY REVIEW :

Contractor will be required to submit the verification report to ascertain character and antecedents from the Civil Administration towards the persons engaged under this contract to the Head of the user Department before engagement.

25. In case of any doubt or dispute as to the interpretation of any clause herein contained, the decision of the Company's Engineer shall be final and binding on the contractor.

## 26. SET OFF CLAUSE :-

"Any sum of money due and payable to the contractor (including Security Deposit refundable to them) under this or any other contract may be appropriated by Oil India Limited and set off against any claim of Oil India Limited (or such other person or persons contracting through Oil India Limited) for payment of a sum of money arising out of this contract or under any other contract made by the contractor with Oil India Limited (or such other person or persons contracting through Oil India Limited)."

## 27.0 FURNISHING FRAUDULENT INFORMATION/DOCUMENT:

If it is found that a Bidder/Contractor has furnished fraudulent document/information, the Bid Security/Performance Security shall be forfeited and the party shall be debarred for period of 3(three) years from date of detection of such fraudulent act, besides the legal action.

## 28.0 LIQUIDATED DAMAGES FOR DELAY IN MOBILISATION AND/ OR COMPLETION OF WORKS AND SERVICES

28.1 In normal case of works /service contracts, liquidated damages will be applicable @ 0.5% of the contract value per week or part thereof, for delay in contract mobilization /completion date subject to a maximum ceiling of 7.5% of contract value .

IN WITNESS whereof the parties hereunto set their hands seals the day and year first written above :-

SIGNED & DELIVERED FOR AND ON BEHALF OF

-----  
(Signature of Contractor or his legal Attorney)

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----- by the hand

-----  
(Full Name of Signatory)

of -----  
its Partner/Legal Attorney

-----  
(Seal of Contractor's Firm)

And in presence of

-----  
(Signature of witness)

-----

Date : \_\_\_\_\_

-----  
(Full Name of Signatory)

Address:

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(Signature of Acceptor)

SIGNED & DELIVERED FOR & ON BEHALF OF OIL INDIA LIMITED

Designation \_\_\_\_\_

Date\_\_\_\_\_

OIL INDIA LIMITED  
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Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
<b>GROUP A</b>						
<b>SECTION A Civil Works</b>						
Labour supervision and related transport wherever applicable						
Land scaping						
10	Trenching in ordinary soil up to a depth of 60cm including removal and stacking of serviceable materials and then disposing of by spreading and neatly levelling with in a lead of 50m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or/and manure before and after flooding trench with water (excluding cost of imported earth, sludge or manure).	Cubic meter	372.000	23.62		
20	Supplying and stacking of good earth at site including royalty and carriage up to 1 km (earth measured in stacks will be reduced by 20% for payment).	Cubic meter	372.000	200.70		
30	Rought dressing the trenched ground including breaking clods.	Square meter	354.900	0.46		
40	Fine dressing the ground.	Square meter	354.900	1.12		
50	Spreading of sludge, dump manure or/and good earth in required thickness (Cost of sludge, dump manure or/and good earth to be paid separately).	Cubic meter	666.900	16.17		
60	Mixing earth and sludge or manure inproportion specified	Cubic meter	666.250	10.94		
Contractor			1			Company

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70	or directed. Grassing with 'Doob' grass in rows 15 cm apart in either direction including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for mowing including supplying good earth if needed (the good earth shall be paid for separately).	Square meter	310.000	168.59		
80	Preparation of beds for hedging and shrubbery by excavating 60cm deep and trenching the excavated base to a further depth of 30cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of	Cubic meter	783.000	66.74		



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90	50m lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). Half brick circular tree guard with F.P.S. Bricks in 50 class designation bricks, internal diameter 1.25 metre and height 1:2 metre above ground and 0.20 m below ground bottom two courses laid dry and top three courses in cement mortar 1:6 (1 cement: 6 fine sand) and the intermediate courses being in dry honey comb masonry as per design complete.	each	47.000	297.05		
100	Collecting / excavating sand, soil, silt, ordinary earth from any source, load into lorries, transport it to distant place of work including procuring earth and laying in layer of 150mm thickness and dry ramming, profile properly made for taking measurement, including all measurable lead upto 30m and lift as required. (The contractor shall be responsible for all formalities of supply of earth such as purchase of land including royalties,	Cubic meter	950.000	175.25		

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	monopoly / other statutory taxes as required from any distance.)					
				Total of Land scaping Rs. _____		
10	Boundary wall Earth work in excavation by mechanical means(Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth , lead up to 50m and lift up to 1.5m disposal earth to be levelled and neatly dressed for all kinds of soil. (Item No CPWD 2.9.1)	Cubic meter	179.280	226.62		
20	Filling available excavated earth (excluding rock) in trenches, plinth , sides of foundations etc. in layers not exceeding 20 cm in depth consolidating each deposited layer by ramming and watering, lead up to 50m and lift up to 1.5 m	Cubic meter	116.530	63.67		
30	Providing and laying in position cement concrete of specified grade of 1:2:4 ( 1 cement :2 coarse sand: 4 graded stone aggregate 20 mm nominal size) excluding the cost of centering and shuttering - All work up to plinth level.	Cubic meter	11.210	2,532.26		

Contractor

4

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40	Providing and laying in position specified grade of 1:1.5:3 ( 1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size) of reinforced cement concrete excluding the cost of centering , shuttering, finishing and reinforcement -all work up to plinth level.	Cubic meter	50.440	2,660.51		
50	Reinforced cement concrete work of prop. 1:1.5:3 ( 1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size) in walls (any thickness), including attached plasters, buttresses, plinth and string courses, fillats, columns, pillars, piers, abutments, posts and struts etc. up to floor five level excluding cost of centering, shuttering , finishing and reinforcement:	Cubic meter	11.360	3,162.58		
60	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15" landings, balconies, shelves, chajjas, lintels, bands plain window sills, staircases and spiral stair cases up to floor five level excluding the cost of centering, shuttering , finishing and reinforcement: with 1:2:4 (1	Cubic meter	3.470	2,579.34		

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70	cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) Centering and shuttering including strutting, propping etc, and removal of form for foundations, footings, bases of columns etc. for mass concrete.	Square meter	58.320	166.16		
80	Centering and shuttering including strutting, propping etc, and removal of form for lintels, beams, plinth beams, girdens, bressumers and cantilevers.	Square meter	129.600	226.62		
90	Centering and shuttering including strutting, propping etc, and removal of form for columns, pillars, piers, abutments, posts and struts.	Square meter	127.160	332.16		
100	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. (Thermo-Mechanically Treated bars.)	Kilogram	8,377.200	59.49		
110	Brick work with F.P.S. bricks of class designation 75 with Cement mortar 1:4 (1 cement : 4 coarse sand) in foundation and plinth in:	Cubic meter	16.720	2,568.41		
120	Brick work with modular bricks of class designation 75 with Cement mortar 1:4 (1 cement : 4	Cubic meter	69.750	2,438.62		

Contractor

6

Company

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130	coarse sand) in foundation and in plinth. Half brick masonry with F.P.S class designation 75 with Cement mortar 1:4 (1 cement : 4 coarse sand) in superstructure above plinth level upto floor V level.	Square meter	316.200	349.80		
140	Fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15 th post , last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires, of G.I. barbed wire 9.38 kg per 100m (minimum) between the two posts fitted and fixed with G.I. Staples , turn buckles etc . complete ( cost of posts , struts, earth work and concrete work to be paid for separately ) :- payment to be made per metre cost of total length of barbed wire used	Meter	6,696.000	41.52		
150	Steel work welded in built up sections / framed work including cutting, hoisting in gratings, frames, guard bar, ladder, railings, brackets,	Kilogram	625.000	71.34		

Contractor

7

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160	gates and similar works, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. 15 mm Cement plaster on the fair side of single or half brick wall of mix 1:4 ( 1 cement : 4 fine sand).	Square meter	401.760	78.86		
170	15 mm Cement plaster on the rough side of single or half brick wall mix 1:4 ( 1 cement : 4 coarse sand)	Square meter	401.760	79.38		
180	15 mm Cement plaster on the rough side of single or half brick wall finished with a floating coat of neat cement of mix 1:4 ( 1 cement : 4 fine sand).	Square meter	313.920	99.38		
190	Applying one coat of cement primer of approved brand and manufacture on wall surface.	Square meter	790.500	23.96		
200	Painting Steel work with Deluxe Multi Surface paint to give an even shade. Two or more coat applied @ 0.90 lit/10 sqm over an under coat of primer applied @ 0.75 ltr/10 sqm of approved brand or manufacture.	Square meter	50.400	74.33		
210	Applying priming coat with ready mixed red oxide zinc chromate primer of approved brand and	Square meter	50.400	17.63		

Contractor

8

Company

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	manufacture on steel work(second coat)					
Total of Boundary wall Rs. _____						
10	Approach Road Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth , dressing to camber and consolidating with road roller including making good the undulations etc. and re- rolling the sub grade and disposal of surplus earth lead up-to 50 metres.	Square meter	750.000	47.23		
20	Supplying and stacking at site 90 mm to 45mm size stone aggregate.	Cubic meter	180.000	1,034.25		
30	Laying spreading and compacting stone aggregate of specified sizes to WBM specifications including spreading in uniform thickness , hand picking , rolling with 3 wheeled road/ vibratory roller 8-10 tonne in stages to proper grade and camber , applying and brooming requisite type of screening / binding material to fill up interstices of coarse aggregate watering and compacting to the required density	Cubic meter	187.500	268.28		

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40	Brick edging in full brick width and half brick depth including excavation , refilling and disposal of surplus earth lead up-to 50 metres with F.P.S. bricks of class designation 75.	Meter	825.000	72.94		
50	Surface dressing on new surface with paving bitumen of grade A-90/S-90 of approved quality using 2.25 kg of bitumen per sqm with 1.65 cum of stone chippings 13.2 mm nominal size per 100 sqm of road surface including consolidation with road roller of 6 to 8 tonne capacity etc complete.	Square meter	750.000	124.56		
60	Surface dressing on new surface in two coats with bitumen of grade A-90/S-90 of approved quality using 1.8 kg of bitumen per sqmt with 1.5 cum of stone chipping 13.2 mm nominal size per 100 sq mt of road surface for first coat and 1.1 kg of bitumen per sq mt with 1.00 cumt of stone chippings 11.2 mm nominal size per 100 sq mt of road surface for second coat including consolidation of each coat separately with road roller of 6 to 8 tonne capacity etc.	Square meter	643.500	168.80		



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Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
70	complete Construction of 100 mm (consolidated) granular sub-base consolidated by dry rolling to proper grade including providing well compacted berms with earth on either side, 1.00m wide levelled with finished road surface, dressing sub-grade including cutting surface upto 75mm deep to required level and (as per specification 'A' in part-II). (Road roller supplied by company).	Square meter	750.000	33.24		
80	Construction of 150 mm thick (consolidated) gravelled road including providing well compacted side berms with earth on either sides, one metre wide and 50mm thick above final level of gravelled road, dressing sub-grade (including cutting of earth up to 75mm deep) to required level, spreading gravel in two layers with bindage of dry earth and dry rolling each layer separately until fully compacted and finally spreading sand shingles uniformly to 25mm thick and re-rolled as directed (Road roller, fuel, lubricant and driver supplied	Square meter	750.000	39.42		

Contractor

11

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliagan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
90	by the company). Contractor to provide security for road roller. Supply of Gravel (65mm graded down to 25mm), hard, clean and free from foreign materials	Cubic meter	131.250	738.21		
100	Supply of approved quality granular materials from approved quarry, free from organic matter including <b>stacking</b> in measurable stacks as directed.	Cubic meter	93.750	654.79		
				Total of Approach Road Rs. _____		
Main Building						
10	Earth work in excavation by mechanical means(Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth , lead up to 50m and lift up to 1.5m disposal earth to be levelled and neatly dressed for all kind of soil. (Item No 2.9.1 CPWD).	Cubic meter	2,189.940	226.62		
20	Filling available excavated earth (excluding rock) in trenches, plinth , sides of foundations etc. in layers not exceeding 20 cm in depth consolidating each deposited layer by ramming and	Cubic meter	1,423.460	63.67		

Contractor

12

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
30	watering, lead up to 50m and lift up to 1.5 m (Item No 2.25 CPWD). Collecting / excavating sand, soil, silt, ordinary earth from any source, load into lorries, transport it to distant place of work including procuring earth and laying in layer of 150mm thickness and dry ramming, profile properly made for taking measurement, including all measurable lead upto 30m and lift as required. (The contractor shall be responsible for all formalities of supply of earth such as purchase of land including royalties, monopoly / other statutory taxes as required from any distance.)	Cubic meter	764.170	175.25		
40	Supplying chemical emulsion (Chlopyriphos / Lindane emulsifiable concentrate of 20%) in sealed containers including delivery as specified	Liter	460.000	242.85		
50	Diluting and injecting chemical emulsion for POST CONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) Along external wall where the apron is not provided using chemical emulsion @	Square meter	216.000	9.41		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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60	7.5 litres/ sqm of the vertical surface of the substructure to a depth of 300 mm including excavation channel along the wall & rodding etc. complete with Chlorpyriphos/ Lindane E.C. 20% with 1% concentration. Diluting and injecting chemical emulsion for POST CONSTRUCTIONAL anti-termite treatment(excluding the cost of chemical emulsion) Along the external wall below concrete or masonry apron using chemical emulsion @ 2.25 litres per linear metre including drilling and plugging holes etc. with Chlorpyriphos/ Lindane E.C. 20% with 1% concentration	Square meter	216.000	14.56		
70	Treatment at points of contact of wood work by chemical emulsion Chlorpyriphos / Lindane (In oil or kerosene based solution ) @ 0.5 litres per hole by drilling 6mm dia holes at downward angle of 45 degree at 150 mm centre to centre and sealing the same.	Meter	90.000	111.19		
80	Providing and laying in position cement concrete of grade 1:2:4 ( 1 cement :2 coarse sand: 4 graded stone aggregate 20 mm nominal size)	Cubic meter	53.480	3,051.05		

Contractor

14

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
90	excluding the cost of centering and shuttering - All work up to plinth level: Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 ( 1 cement : 2 coarse sand :4 graded stone aggregate 20mm nominal size).	Square meter	108.870	150.69		
100	Extra for providing and mixing water proofing material in cement concrete work @ 1 kg per 50kg of cement.	Bag	27.000	248.07		
110	Making plinth protection 50mm thick of cement concrete 1:3:6 ( 1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) over 75 mm bed by dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth	Square meter	465.000	147.20		
120	Providing and laying in position reinforced cement concrete of grade 1:1.5:3 ( 1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size) excluding the cost of centering , shuttering, finishing and reinforcement -all work up to plinth level:	Cubic meter	447.130	2,660.51		
130	Reinforced cement concrete	Cubic meter	12.850	3,162.29		
Contractor			15			Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
140	work in walls (any thickness), including attached plasters, buttresses, plinth and string courses, fillats ,columns, pillars, piers, abutments, posts and struts etc. up to floor five level of grade 1:1.5:3 ( 1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size) excluding cost of centering, shuttering , finishing and reinforcement: Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15" landings, balconies, shelves, chajjas, lintels, bands plain window sills, staircases and spiral stair cases up to floor five level excluding the cost of centering, shuttering , finishing and reinforcement: with 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	Cubic meter	776.880	2,579.49		
150	Reinforced cement concrete work in chimneys, shafts, up to floor five level excluding the cost of centering, shuttering , finishing and reinforcement: with 1:2:4 (1	Cubic meter	25.000	3,233.64		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

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160	cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) Reinforced cement concrete work in vertical and horizontal fins individually or forming box louvers, facias and eaves boards up to floor five level excluding the cost of centering, shuttering , finishing and reinforcement: with 1:1 1/2:3 (1 cement : 1 1/2 coarse sand : 3 graded stone aggregate 20 mm nominal size)	Cubic meter	13.000	2,934.64		
170	Providing precast cement concrete Jali of 50mm thick of prop. 1:2:4 ( 1 cement :2 coarse sand :4 graded stone aggregate 6 mm nominal size) reinforced with 1.6 mm dia mild steel wire including centering and shuttering , roughening cleaning, fixing and finishing in cement mortar 1:3 ( 1 cement :3 fine sand ) etc. complete excluding plastering of the jambs, sills and soffits.	Square meter	95.500	400.15		
180	Centering and shuttering including strutting, propping etc, and removal of form for foundations, footings, bases of columns etc. for mass concrete.	Square meter	201.600	166.16		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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190	Centering and shuttering including strutting, propping etc, and removal of form for suspended floors, roofs, landings, balconies and access platform.	Square meter	2,000.000	261.03		
200	Centering and shuttering including strutting, propping etc, and removal of form for lintels, beams, plinth beams, girders, bressumers and cantilevers.	Square meter	1,434.800	226.62		
210	Centering and shuttering including strutting, propping etc, and removal of form for columns, pillars, piers, abutments, posts and struts.	Square meter	909.830	332.16		
220	Centering and shuttering including strutting, propping etc, and removal of form for stairs (excluding landings) except spiral-staircases.	Square meter	155.560	284.23		
230	Centering and shuttering including strutting, propping etc, and removal of form for vertical and horizontal fins individually or forming box louvers band, facias and eaves boards.	Square meter	45.240	397.85		
240	Reinforcement with Thermo-Mechanically Treated bars for R.C.C. work including straightening, cutting, bending, placing in position and	Kilogram	133,181.210	59.49		

Contractor

18

Company



OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
250	binding all complete. Providing and fixing in position copper plate as per design for expansion joints.	Kilogram	22.000	321.92		
260	Providing and filling in position, blown bitumen in expansion joints.	Centimeter	65.500	485.84		
270	Brick work with F.P.S. bricks of class designation 75 in foundation and upto plinth with prop. of Cement mortar 1:4 (1 cement : 4 coarse sand).	Cubic meter	138.820	2,568.41		
280	Brick work with modular bricks of class designation 75 in foundation and upto plinth with prop. of Cement mortar 1:4 (1 cement : 4 coarse sand)	Cubic meter	136.940	2,438.63		
290	Half brick masonry with F.P.S class designation 75 in superstructure above plinth level upto floor V level with prop. of cement mortar 1:4 (1 cement : 4 coarse sand).	Square meter	702.110	349.80		
300	Providing wood work in frames of doors, windows, clerestory windows and other frames with Second class teak wood, wrought framed and fixed in position.	Cubic meter	6.300	71,577.00		
310	12 mm thick one side Pre-Laminated particle board (decorative lamination on one side and other sides balancing lamination) grade - 1 medium	Square meter	86.940	2,731.98		

Contractor

19

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
320	density flat pressed, three layer particle board FPT - I or graded wood particle board FPT-1 conforming to IS : 3087 bonded with BWP type synthetic resin adhesive as per IS : 848 and pre-laminated conforming to IS : 12823 Grade-1, Type II marked. Providing and fixing ISI marked flush door shutters 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws, conforming to IS: 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters	Square meter	168.210	1,295.70		
330	Providing and fixing ISI marked oxidised M.S. pressed but hinges of size 125x65x2.12 mm with necessary screws etc. complete	each	44.000	25.84		
340	Providing and fixing ISI marked oxidised M.S. pressed but hinges of size 100x69x1.90 mm with necessary screws etc. complete.	each	58.000	18.74		
350	Providing and fixing ISI marked oxidised M.S. pressed	each	26.000	12.96		
Contractor			20			Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

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360	but hinges of size 75x47x1.70 mm with necessary screws etc. complete. Providing and fixing oxidised M.S double acting spring hinges of size 150 mm with necessary scscrews etc. complete.	each	44.000	137.31		
370	Providing and fixing ISI marked oxidised M.S. sliding door bolts of size 300x16 mm with nuts and screws etc. complete	each	69.000	110.91		
380	Providing and fixing ISI marked oxidised M.S. sliding door bolts of size 150x10 mm with nuts and screws etc. complete.	each	63.000	32.60		
390	Providing and fixing bright finished brass hanging type floor door stopper with necessary screws etc. complete.	each	69.000	78.09		
400	Providing and fixing IS : 3564 marked aluminium extruded sectin body tubular type universal hydraulic door closer with double speed adjustment with necessary accessories and screws etc. complete.	each	69.000	1,269.44		
410	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2 mm braced with flat iron diagonals 20x5 mm size with top and bottom rail of T- iron 40x40x6 mm with	Square meter	17.710	3,534.03		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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420	40mm dia, steel pulleys complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer. Providing and fixing M.S. fan clamp type 1 or 2 or 60mm dia M.S. bar bend to shape with hooked ends in RCC slabs beams during laying including painting the exposed portion of loop , all as per standard design complete.	each	96.000	104.77		
430	Providing and fixing hand rail of E.R.W. Tubes of approved size by welding etc. to steel ladder railing, balcony railing and staircase railing including applying a priming coat of approved steel primer.	Kilogram	111.500	155.35		
440	52 mm thick cement concrete flooring with concrete hardener topping under layer 40 mm thick cement concrete 1:2:4 ( 1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 ( 1 cement hardener mix : 2 graded stone aggregate 6mm	Square meter	1,036.350	258.18		

Contractor

22

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
450	nominal size) by volume hardening compound in mix @ 2 litre per 50 kg of cement or as per manufacturers specification . This includes cost of cement sturry, but excluding the cost of nosing of steps. complete. Cement plaster skirting of 18mm thick (up to 30 cm height) with cement mortar 1:3 (1 Cement : 3 Coarse sand) finished with a floating coat of neat cement.	Square meter	290.070	162.75		
460	Kota stone slab flooring of 25mm thick over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand)	Square meter	560.640	889.13		
470	Kota stone slabs 25 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	Square meter	124.290	864.59		
480	Providing and fixing 18mm	Square meter	2.250	1,746.01		

Contractor

23

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
490	<p>thick gang saw cut mirror polished pre moulded and prepolished machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with joints treated with white cement mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels.</p> <p>Area of slab upto 0.50 sqm. Providing and fixing 1st quality Ceramic glazed wall tiles conforming to IS : 15622(thickness to be specified by the manufacturer) of approved make in colours, shades except burgundy, bottle green. black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade</p>	Square meter	730.800	709.68		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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500	Providing and laying Ceramic glazed floor tiles 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand) including pointing the joints with white cement and matching pigment etc., complete.	Square meter	1,600.000	768.27		
510	Providing & Fixing Vetrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS : 15477, using 5kg adhesive per sqm of tile area, in average 3mm thickness over 12 mm Cement plaster of mix 1:4 ( 1 cement : 4 fine sand).	Square meter	1,699.720	32.81		
520	15 mm Cement plaster in coarse sand on the rough side of single or half brick wall mix 1:4 ( 1 cement : 4 coarse sand).	Square meter	3,218.180	87.22		
530	15 mm Cement plaster on the rough side of single or half brick wall finished with a floating coat of neat cement of mix 1:4 ( 1 cement : 4 fine sand)	Square meter	2,046.000	99.38		

Contractor

25

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

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540	Plain Cement Mortar Flush Bands, 12 mm thick plain cement mortar bands in cement mortar 1:4.	Centimeter	1,550.000	1.90		
550	Plain Cement Mortar Sunk Bands, 12 mm thick plain cement mortar bands in cement mortar 1:4.	Centimeter	1,500.000	2.00		
560	Plain Cement Mortar Raised Bands 12 mm thick plain cement mortar bands in cement mortar 1:4.	Centimeter	1,700.000	2.30		
570	Plain Cement Mortar Moulded Bands 12 mm thick plain cement mortar bands in cement mortar 1:4	Centimeter	1,300.000	3.70		
580	Providing and fixing anodised aluminium (anodised transparent or dyed to required shade according to IS:1868, Minimum anodic coating of grade AC 15) work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/appropriate Z sections and other sections of approved make conforming to IS:733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections	Kilogram	2,200.000	432.55		



OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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590	<p>shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for seperately) For shutters of doors, windows &amp; ventilators including providing and fixing hinges / pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required (Fittings shall be paid tor seperately).</p> <p>Providing and fixing 12mm thick Pre-laminated particle board with decorative lamination on both side flat pressed three layer or graded wood paritcle board conforming to IS:12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural</p>	Square meter	130.410	1,132.20		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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600	drawings and directions of engineer-in-charge. Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. With Float glass panes of 5.50 mm thickness, PVC/neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item)	Square meter	220.000	938.45		
610	Providing and fixing double action hydraulic floor spring with stainless steel cover plate of approved brand and manufacture IS : 6315 marked, for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge	each	2.000	2,415.29		
620	Filling the gap in between aluminium frame & adjacent RCC / Brick / Stone work upto 5mm depth and 5mm width by providing weather silicon sealant over backer rod of approved quality as per	Meter	616.400	81.99		

Contractor

28

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
630	architectural drawings and direction of Engineer-in-charge complete Distemping with oil bound washable distemper of approved brand and manufacture to give an even shade. New work (two or more coats ) over and including priming coat with cement primer	Square meter	7,572.410	57.89		
640	Applying one coat of cement primer of approved brand and manufacture on wall surface.	Square meter	2,376.000	23.96		
650	Finishing walls with water proofing cement paint of required shade: New work( Two or more coats applied @ 3.84 kg/10 sqm).	Square meter	2,376.000	42.92		
660	Finishing walls with Acrylic Smooth exterior paint of required shade: New work( Two or more coats applied @ 1.67 ltr /10 sqm over and including base coat of water proofing cement paint applied @ 2.20 kg/ 10 sqm)).	Square meter	2,376.000	70.22		
670	Painting wood work with Deluxe Multi Surface Paint of required shade . Two or more coat applied @ 0.90 lit/10 sqm over an under coat of primer applied @ 0.75 ltr/10 sqm of approved brand or manufacture.	Square meter	645.280	71.75		
680	Painting Steel work with	Square meter	465.000	74.33		
Contractor			29			Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
690	Deluxe Multi Surface paint to give an even shade. Two or more coat applied @ 0.90 lit/10 sqm over an under coat of primer applied @ 0.75 ltr/10 sqm of approved brand or manufacture. Extra for applying water proofing cement paint as primer applied @ 2.2 kg / 10 sqm instead of primer for exterior finishing in item no 13.48.1	Square meter	2,376.000	3.63		
700	Painting (two or more coats ) on rain water , soil, waste and vent pipes of 100 mm diameter and fittings with synthetic eamel paint of approved brand and required colour over a priming coat approved steel primer on new work.	Meter	995.000	22.78		
710	Steel work with hot finished welded type tubes in built up tubular trusses including cuttings, hosting, fixing in position and applying a priming coat of approved steel primer, welded and bolted including special shape washers etc. complete.	Kilogram	780.000	85.69		
720	Supply and installation of precoated galvanised iron profile sheets (size shape and pitch of corrugation as approved by	Square meter	54.600	613.96		

Contractor

30

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

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730	<p>engineer-in-charge) 0.50 mm +/- 5 % total coated thickness (TCT ) thick zinc coating 120 gsm as per IS : 277 in 240mpa steel grade, 5 -7 microns approxy primer on both sides of the steel and polyster top coat 15-80 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches white transportation and should be supplied in single length upto 12 metre or as desired engineer in charge. The sheets shall be fixed using self drilling /self tapping screws of size (5.5x55 mm ) with EPDM seal or with polymer coated J or L hooks, Bolts and nuts 8 mm diameter with bitumen and G. I. limpet washers or with G.I. limpet washers filled with white lead complete upto any pitch in horizontal /vertical or curve surface excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required</p> <p>Providing and fixing precoated galvanised steel sheet roofing</p>	Meter	10.000	638.34		

Contractor

31

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
740	<p>accessories 0.50 mm +/- 5 % total coated thickness (TCT ) thick zinc coating 120gsm Ridges plain (500-800 mm) as per IS : 277 in 240mpa steel grade, 5 -7 microns approxy primer on both side of the sheet and polyster top coat 15-18 microns using self drilling /self tapping screws or with polymer coated Jor L hooks , bolts and nuts and or G.I. seam bolts and nuts. G.I. plain and bitumen washers complete.</p> <p>Providing and fixing precoated galvanised steel sheet roofing</p>	Meter	15.000	580.86		
750	<p>accessories 0.50 mm +/- 5 % total coated thickness (TCT ) thick zinc coating 120gsm Barge board (upto 300 mm) as per IS : 277 in 240mpa steel grade, 5 -7 microns approxy primer on both side of the sheet and polyster top coat 15-18 microns using self drilling /self tapping screws or with polymer coated Jor L hooks , bolts and nuts and or G.I. seam bolts and nuts. G.I. plain and bitumen washers complete.</p> <p>Providing and laying water proofing treatment on roofs of slabs by</p>	Square meter	237.500	1,338.40		

Contractor

32

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
760	<p>applying cement slurry mixed with water proofing cement compound consisting of applying : a) after surface preparation , first layer of slurry of cement @ 0.488 kg/sqmt mixed with water proofing cement compound @ 0.253 kg/ sqmt b) Laying second layer of fibre cloth should not be less than 10 cm c) third layer of 1.5 mm thickness consisting of slurry of cement @ 1.289 kg/sqmt mixed with water proofing cement compound @ 0.670 kg /sq.mt and coarse sand @ 1.289 kg/sqmt . This will be allowed to air cure for 4 hours followed by water curing for 48 hours. The entire treatment will be taken up-to 30cm on parapet wall and tucked into groove in parapet all around d) fourth and final layer of brick tiling with cement mortar ( which will be paid separately for the purpose of measurement the entire treated surface will be measured).</p> <p>Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes of PN-16 Pipe, 16mm OD,</p>	Meter	45.000	96.41		

Contractor

33

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
770	<p>SDR 7.4 U.V stabilized &amp; anti - microbial fusion welded, having thermal stability for hot &amp; cold water supply including all PP - R plain &amp; brass threaded polypropylene random fittings i/c fixing the pipe with clamps at 1.00 m spacing, exposed on wall. This includes the cost fo cutting chases and making good the same including testing of joints complete as per direction of engineer in charge. (Internal work)</p> <p>Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes of PN-16 Pipe, 25mm OD, SDR 7.4 U.V stabilized &amp; anti - microbial fusion welded, having thermal stability for hot &amp; cold water supply including all PP - R plain &amp; brass threaded polypropylene random fittings i/c fixing the pipe with clamps at 1.00 m spacing, exposed on wall. This includes the cost fo cutting chases and making good the same including testing of joints complete as per direction of engineer in charge. (Internal work)</p>	Meter	105.000	183.35		



OIL INDIA LIMITED  
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Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
780	Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes of PN-16 Pipe, 50mm OD, SDR 7.4 U.V stabilized & anti - microbial fusion welded, having thermal stability for hot & cold water supply including all PP - R plain & brass threaded polypropylene random fittings i/c fixing the pipe with clamps at 1.00 m spacing, exposed on wall. This includes the cost fo cutting chases and making good the same including testing of joints complete as per direction of engineer in charge (Internal work).	Meter	564.000	591.65		
790	Concealed work for PN - 16 Pipe, 16 mm OD including cutting chases and making good the walls etc.	Meter	1,691.080	166.20		
800	Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes of PN-16 Pipe, 16mm OD, SDR 7.4 U.V stabilized & anti - microbial fusion welded, having thermal stability for hot & cold water supply including all PP - R plain & brass threaded polypropylene random fittings i/c fixing the pipe with clamps at 1.00 m	Meter	57.290	92.76		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
810	spacing, exposed on wall. This includes the cost fo cutting chases and making good the same including testing of joints complete as per direction of engineer in charge. (External work) Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes of PN-16 Pipe, 50mm OD, SDR 7.4 U.V stabilized & anti - microbial fusion welded, having thermal stability for hot & cold water supply including all PP - R plain & brass threaded polypropylene random fittings i/c fixing the pipe with clamps at 1.00 m spacing, exposed on wall. This includes the cost fo cutting chases and making good the same including testing of joints complete as per direction of engineer in charge. (External work)	Meter	45.000	564.82		
820	Providing and fixing 15 mm nominal bore brass bib cock of approved quality.	each	92.000	259.77		
830	Providing and fixing 20 mm nominal bore brass stop cock of approved quality.	each	69.000	318.72		
840	Providing and fixing gun metal gate valve of 40 mm	each	26.000	540.70		
Contractor			36			Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
850	nominal bore with C.I. wheel of approved quality (screwed end). Providing and fixing gun metal non-return valve of 25 mm nominal bore (horizontal) of approved quality (screwed end).	each	4.000	395.90		
860	Providing and fixing gun metal non-return valve of 25 mm nominal bore (Vertical) of approved quality (screwed end).	each	4.000	430.52		
870	Providing and fixing gun metal non-return valve of 40 mm nominal bore (horizontal) of approved quality (screwed end).	each	10.000	670.72		
880	Providing and fixing gun metal non-return valve of 40 mm nominal bore (vertical) of approved quality (screwed end).	each	10.000	820.26		
890	Providing and fixing gun metal non-return valve of 50 mm nominal bore (horizontal) of approved quality (screwed end).	each	4.000	1,000.35		
900	Providing and fixing gun metal non-return valve of 50 mm nominal bore (vertical) of approved quality (screwed end).	each	4.000	1,148.34		
910	Providing and fixing brass ferrule of 15 mm nominal bore with C.I. mouth cover including boring and tapping the main.	each	69.000	189.39		
920	Providing and fixing uplasticised PVC connection	each	144.000	47.56		

Contractor

37

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
930	pipe of 30 cm length and 15 mm nominal bore with brass unions. Providing and fixing uplasticised PVC connection pipe of 45cm length and 15 mm nominal bore with brass unions.	each	102.000	60.65		
940	Providing and fixing C.P. brass shower rose of 150 mm diameter with 15 to 20 mm inlet	each	69.000	75.62		
950	Constructing masonry Chamber 30x30x50 cm with FPS Bricks, inside with 75 class designation brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for stop cock, with C.I. surface box 100x100x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone agregate 40 mm nominal size) and inside plastering with gement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design	each	5.000	812.81		
960	Boring with 100 mm diameter	Meter	24.000	281.81		

Contractor

38

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
970	casting pipe Beyond 12 m and up to 18 m depth, for hand pump / tube well in all soils except ordinary hard rocks requiring blasting including removing the casing pipe after the hand pipe/tube well is lowered and tested. Providing and placing in position filters of 40 mm diameter G.I. pipe with brass strainer of approved quality.	Meter	9.600	497.81		
980	Providing and placing in position hand pump of aproved quality for 40 mm diameter G.I. pipe complete with all accessories.	each	2.000	781.64		
990	Providing and placing on terrace ( at all floor levels ) polythylene water storage tank ISI : 12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank	Liter	12,000.000	7.12		
1000	Providing and fixing C.P. brass bib cock of 15 mm nominal bore of approved quality conforming to IS:8931	each	10.000	280.51		
1010	Providing and fixing C.P. brass long nose bib cock of 15 mm nominal bore of approved quality	each	15.000	355.11		

Contractor

39

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
1020	conforming to IS standards and weighing not less than 810 gms. Providing and fixing C.P. brass long body bib cock of 15 mm nominal bore of approved quality conforming to IS standards and weighing not less than 690 gms.	each	138.000	344.14		
1030	Providing and fixing C.P. brass stop cock (concealed) of 15 mm nominal bore of standard design and of approved make conforming to IS:8931.	each	46.000	355.79		
1040	Providing and fixing C.P. brass angle valve of 15 mm nominal bore for basin mixer and geyser points of approved quality conforming to IS:8931	each	92.000	471.11		
1050	a) 15 mm nominal bore Cutting holes up to 15x15cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including finishing complete so as to make it leak proof.	each	92.000	109.11		
1060	Providing & fixing Squating pan (indian type)with 100 mm sand cast iron P-trap or s trap & 10 lt	each	2.000	3,211.11		

Contractor

40

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
1070	low level white PVC flushing cistern with manually controlled device(handle & lever), conforming to IS: 7231 with all fittings and fixtures complete including cutting & making good the wall and floor wherever required) CPWD 17.1.1 Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan with ISI marked white solid plastic seat and lid), 10 litre low level white P.V.C. flushing cistern with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required.	each	46.000	2,916.91		
1080	Providing and fixing Stainless Steel AISI-304(18/8) Wash basin 530x345 mm with single 15 mm C.P. brass pillar tap with C.I. brackets, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require.	each	46.000	2,832.56		

Contractor

41

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
1090	Providing and fixing white vitreous china pedestal for wash basin completely recessed at the back for the reception of pipes and fittings.	each	42.000	956.59		
1100	Providing and fixing White glazed fire clay kitchen sink of size 600x450x250 mm with C.I. brackets, C.P. brass chain with rubber plug, 400 mm C.P. brass waste complete, including painting the fittings and brackets, cutting and making good the walls wherever required :	each	8.000	2,430.22		
1110	Providing and fixing Stainless Steel A ISI 304 (18/8) Kitchen sink 510x1040 mm bowl depth 250 mm with drain board as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required :	each	4.000	8,339.93		
1120	Providing and fixing P.V.C. waste pipe of 40 mm dia for sink or wash basin including P.V.C. waste fittings complete.	each	65.000	64.98		
1130	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard	each	50.000	668.96		

Contractor

42

Company



OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
1140	board ground fixed to wooden cleats with C.P. brass screws and washers complete. Providing and fixing 600x120x5 mm glass shelf with edges round of supported on anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	each	46.000	296.51		
1150	Providing and fixed C.P. brass toilet paper holder.	each	46.000	199.34		
1160	Providing and fixed soil, waste and vent pipes of 100 mm dia Sand cast iron S&S pipe as per IS: 1729.	Meter	650.000	611.16		
1170	Providing and filling the joints with spun yarn cement slurry and cement mortar 1:2 (1 cement : 2 fine sand) in S.C.I. / C.I. 100 mm dia pipe.	each	244.000	37.25		
1180	Providing and fixing M.S. holder-bat clamps of approved design to Sand Cast iron/cast iron (spun) 100 mm dia. Pipe embedded in and including cement concrete blocks 10x10x10cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded sotne aggregate 20 mm nominal size) including cost of cutting holes and making good the walls etc. :	each	240.000	31.15		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
1190	Providing and fixing Sand cast iron S&S pipe of 100mm dia as per IS : 1729. of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.	each	20.000	345.56		
1200	Providing and fixing Sand cast iron S&S plain bend of 100mm dia of required degree as per IS - 1729.	each	138.000	301.45		
1210	Providing and fixing heel rest sanitary bend of 100 mm dia of Sand cast iron S&S as per IS - 1729.	each	92.000	331.33		
1220	Providing and fixing double equal junction of Sand cast iron S&S as per IS - 1729 of size 100x100x100x100 mm with required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete	each	20.000	696.34		
1230	Providing and fixing double equal plain junction of 100x100x100x100 mm size of Sand cast iron S&S as per IS - 1729 with required degree	each	60.000	641.45		
1240	Providing and fixing door piece of Sand cast iron S&S of 100 mm dia as per IS - 1729, insertion rubber washer 3 mm thick, bolts & nuts complete.	each	40.000	498.21		
1250	Providing and fixing terminal	each	52.000	260.52		
Contractor			44			Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
1260	Providing and fixing collar of Sand cast iron S&S of 100 mm as per IS - 1729.	each	120.000	194.39		
1270	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of 100 mm diameter.	each	80.000	171.42		
1280	Providing and fixing M.S. stays and clamps for sand cast iron/centrifugally cast (spun) iron pipes of 100 mm diameter.	each	200.000	65.39		
1290	Cutting chases in brick masonry walls for 100 mm diameter sand cast iron/ centrifugally cast (spun) iron pipes and making good the same with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 12.5 mm nominal size) including necessary plaster and pointing in cement mortar 1:4 (1 cement : 4 coarse sand)	Meter	92.000	205.96		
1300	Painting sand cast iron/ centrifugally cast (spun) iron soil, waste vent pipes and fittings of 100 mm diameter with paint of any colour such as chocolate grey, or buff etc. over a coat of primer (of approved quality)	Meter	633.150	24.19		

Contractor

45

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
1310	for new work. Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour. Weighing not less than 105 gms.	each	52.000	223.12		
1320	Providing and fixing PTMT towel ring trapezoidal shape 215 mm long, 200 mm wide with a minimum distance of 37 mm from wall face with concealed fittings arrangement of approved quality and colour. Weighing not less than 88 gms.	each	52.000	201.91		
1330	Construction brick masonry chamber for underground C.I. inspection chamber and bends with 75 class designation bricks in cement mortar 1:4 (1 cement :4 coarse sand ) C.I. cover with frame (light duty) 455 x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) R.C.C. top slab with 1:2:4 mix (1 cement :2 coarse sand :4 graded stone aggregate 20mm nominal size) foundation	each	25.000	4,154.05		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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1340	<p>concrete 1:5:10( 1 cement :5 fine sand : 10 graded stone aggregate 40mm nominal size ) inside plastering 12 mm thick with cement mortar 1:3 (1 cement :3 coarse sand) finished with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design (a) Inside dimension 455 x 610 mm and 45 cm deep for single pipe line.</p> <p>Making soak pit With F.P.S. Bricks, 2.5 diameter 3.00 mt deep with 45x45 cm dry brick honey comb shaft with bricks of class designation 75 and S.W. drain pipe 100mm diameter 1.8 m long complete as per standard design.</p>	each	2.000	12,559.01		
1350	<p>Providing and fixing 100 mm diameter and 60 cm long rain water spout (Stone ware spout) in cement mortar 1 : 4 ( 1 cement : 4 fine sand)</p>	each	20.000	48.98		
1360	<p>Providing and fixing M.S. holder bat clamps of 100mm dia of approved design to C.I or S.C.I rain water pipes embedded in an including cement concrete blocks 10x10x10 cm of 1:2:4 ( 1 cement : 2 coarse sand : 4</p>	each	180.000	86.68		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
1370	graded stone aggregate 20 mm nominal size) and cost for cutting holes and making good the walls etc Providing and fixing on wall face unplasticised Rigid PVC rain water pipes of 110 mm diameter conforming to IS : 13592 Type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion for Single socket pipes.	Meter	320.000	221.43		
1380	Providing and fixing on wall face unplasticised - PVC molded Coupler of 110mm dia for unplasticised rigid PVC rain water pipes conforming to IS : 13592 type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion.	each	40.000	137.75		
1390	Providing and fixing on wall face unplasticised - PVC molded single push fit coupler of 110mm dia for unplasticised rigid PVC rain water pipes conforming to IS : 13592 type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion.	each	40.000	188.16		
1400	Providing and fixing on wall face unplasticised - PVC	each	40.000	353.28		
Contractor			48			Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
1410	molded Single tee with door of size 110mm x 110mm for unplasticised rigid PVC rain water pipes confirming to IS : 13592 type A including jointing with seal ring confirming to IS : 5382 leaving 10 mm gap for thermal expansion. Providing and fixing on wall face unplasticised - PVC	each	20.000	282.47		
1420	molded Single tee without door of size 110mm x 110mm for unplasticised rigid PVC rain water pipes confirming to IS : 13592 type A including jointing with seal ring confirming to IS : 5382 leaving 10 mm gap for thermal expansion. Providing and fixing on wall face unplasticised - PVC	each	138.000	181.85		
1430	molded Bend 87.5 degree of 110mm dia for unplasticised rigid PVC rain water pipes confirming to IS : 13592 type A including jointing with seal ring confirming to IS : 5382 leaving 10 mm gap for thermal expansion. Providing and fixing on wall face unplasticised - PVC	each	23.000	221.02		
	molded 110mm Shoe (playing) for unplasticised rigid PVC rain water pipes					

Contractor

49

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
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confirming to IS  
: 13592 type A including  
jointing with seal ring  
confirming to IS : 5382  
leaving 10 mm gap for thermal  
expansion.

Total of Main Building Rs. \_\_\_\_\_

Total of SECTION A Civil Works Rs. \_\_\_\_\_

**SECTION b Electrical Works**

Supply of all material at site of work including all royalties and other charges being borne by the contractor

10	Point wiring with 1.5sq.mm, 1100v, fire retardant, PVC insulated, ISI, TAC, FIA approved, copper conductor, single core flexible cable for Phase, Neutral and Earth wire(3x1.5 sq mm) in surface/recessed, MS conduit confirming to IS.	each	340.000	500.00	
20	Light plug wiring with 1.5sq.mm, 1100v, fire retardant, PVC insulated, ISI, TAC, FIA approved, copper conductor, single core flexible cable for Phase, Neutral and Earth wire(3x1.5 sq mm) in surface/recessed, MS conduit confirming to IS. Measurement on circuit length basis.	Meter	1,800.000	150.00	
30	Circuit Wiring with 2.5 sq mm, 1100v, fire retardant, PVC insulated, ISI, TAC, FIA approved, copper conductor, single core flexible cable for	Meter	150.000	175.00	

Contractor

50

Company



OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
40	Phase, Neutral and Earth wire (3x2.5 sq mm) in surface/recessed, MS conduit confirming to IS. Measurement on circuit length basis. For 15 amp outlets Power Wiring with 4.0 sq mm, 1100v, fire retardant, PVC insulated, ISI, TAC, FIA approved, copper conductor, single core flexible cable for	Meter	80.000	195.00		
50	Phase, Neutral and Earth wire (3x4.0 sqmm) in surface/recessed, MS conduit confirming to IS. Measurement on circuit length basis. Sub main Wiring with 6.0 sq mm, 1100v, fire retardant, PVC insulated, ISI, TAC, FIA approved, copper conductor, single core flexible cable for	Meter	550.000	245.00		
60	Phase, Neutral and Earth wire (3x6.0 sqmm) in surface/recessed, MS conduit confirming to IS. Measurement on circuit length basis. For FDB to MCB DB Sub main Wiring with 16.0 sq mm, 1100v, fire retardant, PVC insulated, ISI, TAC, FIA approved, copper conductor, single core flexible cable for Three Phases, Neutral and Two Earth wires (6x16.0 sqmm) in	Meter	10.000	860.00		

Contractor

51

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
70	surface/recessed, MS conduit confirming to IS. Measurement on circuit length basis. GF FDB to FF FDB Supplying, fixing, testing and commissioning of Phillips make 1x125w ,HPS 370 1XHPL125 Post Top garden Luminaire complete with ballast, condenser, wiring ,all accessories with one no. 125W SC HPL-N lamp.	Number	18.000	1,430.00		
80	Supplying, fixing, testing and commissioning of Phillips make 1x18w TMS 21/118 HPF Luminaire complete with ballast, condenser, wiring and all accessories with one 18W FT lamp. Toilet	Number	50.000	540.00		
90	Supply, installation, connection, testing and commissioning of suspension type TMC 501/136 HPF, 1x36w Luminaire complete with Ballast, 36w FTL, PF capacitor & internal wiring etc. Philips make or as directed by Engineer-Incharge. For all Rooms	Number	105.000	700.00		
100	Supplying, fixing, testing and commissioning of Phillips make 1x15w CFL Luminaire, FL 800/320 of Philips Make complete with internal wiring and one no. 15 W, B22 cap,	Number	60.000	368.00		

Contractor

52

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
110	6400Deg K, Coolday light, CFL. Philips make or as directed by Engineer-Incharge. For all rooms, CR, dining hall on wall Supplying, fixing, testing and commissioning 1x15w CFL Luminaire, FL 424/118 of Philips Make complete with internal wiring and one no. 15 W, B22 cap, 6400Deg K, Coolday light, CFL. Philips make or as directed by Engineer- Incharge. For Common room	Number	4.000	377.00		
120	Supplying, fixing, testing and commissioning 1x25w CFL Luminaire, Deco Twist Lux BCS 1902 of Philips Make complete with internal wiring and one no. 25 W, B22 cap, 6400Deg K, Coolday light, CFL. Philips make or as directed by Engineer-Incharge. For all rooms balcony	Number	48.000	830.00		
130	Supply, fixing & suspension of two nos. of ball/socket type ceiling mounted fixture with box two nos. of down rods for suspending tube light fitting and painting of rod. Each down rod of 45 cm length, 19mm dia, & 16 gauge thickness & fitted with two nos. of nuts.for suspending	Number	60.000	140.00		

Contractor

53

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
140	tubelight fitting. Extra Down Rod for Light Fitting, 19mm dia, & 16 gauge thickness	Number	30.000	70.00		
150	Supply and installation of GI post in garden for Post Top Luminaire as per detail mentioned in the attached Annexure for electrical works.	Number	18.000	2,800.00		
160	Supply and installation of outdoor type junction box for Garden Lights and Street Lights as per detail mentioned in the attached Annexure for electrical works.	Number	18.000	1,800.00		
170	Supply and installation of Cable Gland for 3x2.5 sq mm Cable as per detail mentioned in the attached Annexure for electrical works.	Number	54.000	55.00		
180	Supply and fixing of MS rectangular junction box made from 1.6 mm thick MS Sheet, 150x75 mm size, 60 mm deep, painted, with 3.0 mm hylam sheet cover of white colour. J/Box shall have porcelain connector, 240v, 6.0 sq mm rated suitable for termination of phase, neutral wires for looping and one no. earth stud for connecting earth wires and earthing the box. Box to have knockouts for conduit entry.	Number	80.000	130.00		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
190	Supply, installation, testing and commissioning of AC ceiling fan confirming to IS, 1400 mm sweep, 220/ 250volts, 50Hz complete with clamp, 300 mm down rod, metallic blades, canopy, rubber shackle, copper twin core cable for connection. Fan must have minimum 3 star rating by BEE (Bajaj Energy Smart, Havell's ES 50 or as approved by Engineer In charge)	Number	65.000	2,000.00		
200	Supply, installation by fixing with grouting bolts on wall, testing and commissioning of Exhaust fan confirming to IS, 300mm sweep, 900 rpm, 240 volts, 50Hz, low noise, heavy duty, metallic construction, complete with frame and connecting wires. Make- Bajaj, Usha, Orient, Crompton.	Number	4.000	1,600.00		
210	Supply, installation, wiring of 230v AC Ding Dong type call bell. Cat no -8636 of anchor make or as approved by engineer in-charge.	Number	2.000	125.00		
220	Supply and Installation of Single phase, 240vAC, Flush mounted MCB DB with following specifications. Complete DB to be made of CRCA sheet steel which is	Number	2.000	6,400.00		

Contractor

55

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
	<p>given seven tank anti corrosion treatment &amp; two- tone powder coated in white colour. Top &amp; bottom gland plates to have knockouts for cable entry. DIN channel for mounting MCBs should be provided and DB should be as per IS-8623. DB should have external earth terminal &amp; mounting holes. Cable ties &amp; wire leads for wiring incomer RCCB to respective phase &amp; neutral buses should be supplied and wired with single core 16 sqmm stranded copper cable with tinned copper lugs. 63amp tinned copper busbar should be provided for phase &amp; neutral. Neutral &amp; Earth bar should be 12 way each &amp; suitable for termination of wires with pin type cable lugs. Enclosure type- IP-42 with double door. Earth busbar shall be 12 way and made of brass or tinned copper. The DB should be fitted with the following incoming &amp; outgoing devices.</p> <p>a. One no. 2-pole, 240vAC, 63 amp, 30mA sensitivity RCCB, suitable for class-II tropicalisation (as per IEC) &amp; approved by ISI or</p>					

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
	IEC, as incomer.					
	b.	Single pole, 240vAC, 6 amp MCB as outgoing-9 nos.				
	c.	Single pole, 240vAC, 16 amp MCB as outgoing-3 no.				
	All outgoing MCBs should be 'C' curve, 240v AC rated, 10kA rated breaking capacity, with DMC housing, suitable for class-II tropicalisation (as per IEC) & approved by ISI or IEC. MCBs should have integrated label holder, biconnect upper & lower terminals & air channels for low temp. rise. DB shall have cable entry box on top side for keeping spare length of cables. All wires inside DB shall have ferrules for identification of circuit no. All unused openings should be fitted with Blanking Plates. Instruction in English for resetting RCCB in case of tripping shall be printed on a paper and shall be pasted on inside of the enclosure cover. All outgoing MCBs shall be marked with paint for identification of area being fed. MAKE OF DB and components: Legrand (Lexic) / Merlin Gerin/ Siemens					

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
230	<p>Supply and Installation of Single phase, 240vAC, Flush mounted MCB DB with following specifications. Complete DB to be made of CRCA sheet steel which is given seven tank anti corrosion treatment &amp; two- tone powder coated in white colour. Top &amp; bottom gland plates to have knockouts for cable entry. DIN channel for mounting MCBs should be provided and DB should be as per IS-8623. DB should have external earth terminal &amp; mounting holes. Cable ties &amp; wire leads for wiring incomer RCCB to respective phase &amp; neutral buses should be supplied and wired with single core 16 sqmm stranded copper cable with tinned copper lugs. 63amp tinned copper busbar should be provided for phase &amp; neutral. Neutral &amp; Earth bar should be 8 way each &amp; suitable for termination of wires with pin type cable lugs. Enclosure type- IP-42 with double door. Earth busbar shall be 8 way and made of brass or tinned copper. The DB should be fitted with the following incoming &amp;</p>	Number	11.000	5,800.00		



OIL INDIA LIMITED  
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Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
	<p>outgoing devices.</p> <p>a. One no. 2-pole, 240vAC, 63 amp, 30mA sensitivity RCCB, suitable for class-II tropicalisation (as per IEC) &amp; approved by ISI or IEC, as incomer.</p> <p>b. Single pole, 240vAC, 6 amp MCB as outgoing-7 nos.</p> <p>c. Single pole, 240vAC, 16 amp MCB as outgoing-1 no. All outgoing MCBs should be 'C' curve, 240v AC rated, 10kA rated breaking capacity, with DMC housing, suitable for class-II tropicalisation (as per IEC) &amp; approved by ISI or IEC. MCBs should have integrated label holder, biconnect upper &amp; lower terminals &amp; air channels for low temp. rise. DB shall have cable entry box on top side for keeping spare length of cables. All wires inside DB shall have ferrules for identification of circuit no. All unused openings should be fitted with Blanking Plates. Instruction in English for resetting RCCB in case of tripping shall be printed on a paper and shall be pasted on inside of the enclosure cover. All outgoing MCBs shall</p>					

OIL INDIA LIMITED  
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Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
240	<p>be marked with paint for identification of area being fed. MAKE OF DB and components: Legrand (Lexic) / Merlin Gerin/ Siemens</p> <p>Supply and Installation of 63 amp, 240v AC, SPN Switch Fuse Unit, non-weatherproof type complete with one no. 63 amp porcelain fuse base and carrier fitted with 30 amp wire fuse and one no. removable neutral link. All contacts and connectors shall be made from hard silver coated electrolytic grade copper. Conduit entry: 25 mm at top and bottom with rubber grommet ring or knockout. Enclosure and cover shall be made from rust free MS sheet and powder coated in White/DA Grey colour. Enclosure cover shall have neoprene gasket. Operating handle (Metallic) shall be provided in the side of the unit. One no. external earth point shall be provided in the unit. Switch Fuse Unit shall be suitable for mounting on wall and shall confirm to IS-13947 (Part-3) with latest</p>	Number	13.000	2,000.00		

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
250	amendments. Make: Havells/ Cutler Hammer. Installation with grouting bolts on wall, cable termination and earthing connection of TPN HRC Fuse DB and Main Switch Unit mounted on a frame. DB and Main Switch unit shall be supplied by OIL	Number	2.000	1,000.00		
260	Supply, Installation and commissioning of 1.5 TR single split Airconditioner with mounting bracket for OD unit. Installation of AC as per Manufacturer's installation, manual. Make: Carrier, Blue Star, Voltas, LG, Samsung	Number	3.000	35,000.00		
270	Supply and installation of extra length of gas pipe for split AC. Each meter of pipe means one meter combined gas pipes and associated cable. Joint if any shall be inside the room and made with connector and junction box.	Meter	15.000	580.00		
280	Supplying and installation of Surface type 20A metallic plug/socket DB complete with 20A Plug and Socket and 20A C curve, 10kA MCB for AC. Make: Merlin Gerin/Legrand/Siemens.	Number	3.000	700.00		
290	Supply, installation on wall using clamps, of 50mm ID, 5mm	Meter	30.000	320.00		

Contractor

61

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
300	wall thickness, medium grade, BIS approved GI pipe for protection of armoured cable. All clamps and screws shall be included in the supply of pipes. Pipe shall be painted with two coats of black paint. Make of pipe: TATA, Jindal, Sail, Hindustan Steel. Supply, installation on wall using clamps, of 100mm ID, 5mm wall	Meter	30.000	760.00		
310	thickness, medium grade, BIS approved GI pipe for protection of armoured cable. All clamps and screws shall be included in the supply of pipes. Make of pipe: TATA, Jindal, Sail, Hindustan Steel. Supplying and laying of 25mmx6mm GI strap for earth electrode & DB earthing including supply of all hardwares required for connection. The GI strap should be hot dip galvanised with galvanisation thickness of minimum 80 micron and confirm to IS. All hardwares bolts to be galvanised and of minimum 12mm diameter.	Meter	50.000	45.00		
320	Making of cable trench in the soil as per following details. The trench will be made in soil along	Meter	150.000	70.00		

Contractor

62

Company

OIL INDIA LIMITED  
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Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
	the route decided in consultation with OIL. The trench will be 750mm deep, 400mm wide. The trench bottom will be filled with 75mm thick layer of clean sand and levelled to give flat bedding for cable. The cable shall be laid on this sand bed. After laying the cable in the trench the trench will be filled with another layer of clean sand of thickness 75mm. This sand layer will be leveled and complete trench length covered with A- Class bricks. The bricks will be placed closely without any gap. Brick length shall be perpendicular to the cable route. The trench will then filled with soil and the soil surface shall be dressed properly.					
330	Supplying and Laying of 1100v grade, 3x2.5 sqmm PVCA copper cable, Approved by IS-1554 in existing trench. Cable as per specs in Annexure.	Meter	250.000	160.00		
340	Earth electrode made of GI pipe. 3.0 meter long x 50mmID, minimum 5mm pipe wall thickness. Each electrode shall have two nos. of L- shaped	Number	2.000	3,000.00		

Contractor

63

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

SOQ - Schedule of Work, Unit, Quantities, Rates and Prices.

Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
	connectors made from 25x6mm GI strap welded on the top side of electrode for connection purpose. Each side of the connector shall be 150mm long. The weld shall be complete along the jointing surface. The weld shall be cleaned of slug and then coated with aluminium based/bituminous paint for rust protection. There shall be two holes of 12 mm dia on the connection surface of the connector. GI Pipe shall be ISI marked, medium grade. Each electrode will have its separate enclosure made from brickwork and have removable concrete cover for inspection, testing and connection. Size, construction of the enclosure will be as per IS-3043. There will be openings in the enclosure sides for passing the earth straps. Make of GI pipe: TATA/Jindal/ SAIL/ Hindustan pipes.					
350	Supply, installation and wiring of Single pole Switch 6A SP (W26401A MK Make).	Number	450.000	92.00		
360	Supply, installation and wiring of Single pole Switch	Number	13.000	137.00		

Contractor

64

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
370	16A SP (W26411A MK Make) Supply, installation and wiring of Socket 16A (W26424 MK Make)	Number	13.000	210.00		
380	Supply, installation and wiring of Socket 6A(W26420 MK Make)	Number	115.000	147.00		
390	Supply, installation and wiring of 6-8 module boxes (W26048 MK Make)	Number	66.000	140.00		
400	Supply, installation and wiring of 4-5 module boxes (W26045 MK Make)	Number	15.000	93.00		
410	Supply, installation and wiring of 3 module boxes (W26043 MK Make)	Number	160.000	82.00		
420	Supply, installation and wiring of 8 module front plates (W26008 MK Make)	Number	11.000	170.00		
430	Supply, installation and wiring of 6 module front plates (W26006 MK Make)	Number	55.000	130.00		
440	Supply, installation and wiring of 4 module front plates (W26004 MK Make)	Number	15.000	94.00		
450	Supply, installation and wiring of 3 module front plates (W26003 MK Make)	Number	160.000	84.00		
460	Supply, installation and wiring of Decorative Bell Switch 3M (W26406BNA MK Make)	Number	3.000	340.00		
470	Supply, installation and wiring of Blank Plate (W26441 MK Make)	Number	100.000	16.00		

Contractor

65

Company

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

Tender No. DCC8462P11

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Service Line No.	Description of Works	Unit	Qty	Internal Rates per unit (Rs)	Contractor's quoted Rates per unit (Figs & Words) (Rs)	Amount (Rs)
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480	Supply, installation and wiring of Fan Regulator 100W (W 26472 MK Make).	Number	65.000	430.00		
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Total of SECTION b Electrical Works Rs. \_\_\_\_\_

Total of GROUP A Rs. \_\_\_\_\_

N.B.-Company's rate include 8.8% AGST & Labour rates based on minimum labour wage of 0.00



OIL INDIA LIMITED  
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Contracts, Duliajan

Tender No. DCC8462P11

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Total of all Groups Rs. \_\_\_\_\_

Bidders are requested to fill up the following :

- 1) Whether 12% P.F. on the wage component is included in the total quoted cost \_\_\_\_\_ - Included / Not included
- 2) Wage component for Civil Part is \_\_\_\_\_ % and for Electrical Part is \_\_\_\_\_ %.
- 3) The Contractor must quote considering the prevailing minimum labour wage rate for each day of work as Rs. 0.00 only.

Note : The above two information will have to furnished by the bidder. In case of non-furnishing the same, the tender(s) will be evaluated as mentioned below :-

(a) If information against (1) is furnished in an ambiguous manner (i.e. both the options are ticked/cut or in any other manner) or not furnished, such tenders will be evaluated after loading 12% P.F. on the declared wage component of the bidder(s).

(b) If information against (2) is not furnished, such tender(s) will be evaluated considering the wage component as per wage component of \_\_\_\_\_ % on Civil part & \_\_\_\_\_ % on Electrical Part.

(c) The bids will be evaluated/compared after loading 12% P.F. on the declared wage components, wherever applicable.

(d) Offers not furnished in the above format as per instruction given shall summarily be rejected.

OIL INDIA LIMITED  
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Contracts, Duliajan

## WORKS CONTRACT

### Special Conditions of Contract(SCC)

Tender No.: DCC8462P11

#### Special Conditions For Civil and Electrical Works:

- i. Bidder will have to engage an experienced graduate Civil Engineer i.e. BE(Civil), passed from a recognised University. He Must have atleast three years experience of similar nature of building works. And all the electrical works to be executed through a valied electrical License holder(Electrical License should be issued by the Appropriate Govt. Authority) haveing experience of similar nature of works.
- iii. Bidder must to submit a detail work programme for the project to complete the work within the allotted time along with the tender document.
- ii. Since it is time bound project, bidder must ensure that he will be able to complete the work within the stipulated time and be able to execute work on shift basis atleast in two shifts of 8 Hours each with adequate manpower and materials to meet the target date of completion. Moreove all necessary arrangement including the power for light shall have to be made to work in all days including the rainy days.
- iii. Bidder have to keep a Telephone connection/Mobile Phone connection exclusively for the site and same should be communicated to OIL.
- iv. Formwork have to be sufficient to complete RCC work of one slab contineously without any days of break.
- v. Sucessful Bidder have to ensure uninterpepted power supply to the site, necessay Genset for the same have to be instaled at site and also arrange for pump tube wellfor water supply at his own cost.
- vi. Inaddition to his own the sucessful bidder have to construct a temporary office at site for him as well as for OIL engineer at his cost.

#### TECHNICAL REQUIREMENTS

FOR CONSTRUCTION OF PROPOSED ET HOSTEL NEAR HOSTEL NO-4 AT DULIAJAN.

(CIVIL WORKS)

#### 1.0 SCOPE OF WORK :

The scope of work envisaged under this tender covers construction of buildings as per tender specifications, drawings and standards etc. In general job shall be done as per APWD specifications. However brief specifications are given here under for general guidance purpose of the tenderers. The job scope includes foundations as per drawings, and all other building activities including civil / sanitary / plumbing / electrical works as spelt out in the detailed drawings and specifications. It shall be clearly be noted that the bidders are required to give their lump-sum rates taking into consideration all aspects as per site requirements and specifications enclosed along with this tender document. Quoted offers shall be inclusive of all materials and labour and other taxes & lavies. Water and Power shall have to be arranged by the contractor for execution of the tendered work. The contractor shall be responsible to complete the entire work in all respects and also any other works necessary to complete the job though especially not covered in the scope of work. In general, the scope of work covers the following but not limited to :

- a. Anti-termite treatment as per CPWD to be executed by reputed party having licence to work.
- b. Earth work in excavation in all kinds of soils and in all lead & lift.
- c. Filling with surplus excavated earth.
- d. Filling with selected earth brought from outside at any lead.
- e. Providing and filling sand under floor in foundation.
- f. Providing and laying 1:3:6 (1 cement: 3 coarse sand: 6 graded stone agg; 40mm nominal size) concrete in foundation bed.
- g. Providing and laying 1:1.5:3 and 1 : 2 : 4 mix including steel/timber shuttering with steel/timber centering propping and scaffolding as per drawings.

- h. Providing cutting bending and placing steel reinforcement as per detail structural drawings.
- i. Providing and laying brick work in CM 1:4 (1 cement: 4 coarse sand) in foundation strength of the bricks should be 75 class designation.
- j. Providing and laying brick work in CM 1:4 (1 cement: 4 coarse sand) in superstructure strength of the bricks should be 75 class designation.
- k. Providing 75mm thick P.C.C.(1:2:4) pavement in panels over a layer of brick on edge soling as internal pavements in housing blocks.
- l. Providing drip course (bulging) on all external projected slabs and chajjas.
- m. Septic Tank and Soak Pit as per drawings.

#### DOORS:

- i. Flush door (single leaf finished) made of phenol bonded Duratuff exterior grade (both side) plain medium density fibre board. The door should be fixed using 4 nos. of hinges 125mm long ensuring that the hinges are not fixed less than 150mm from the edges with 8 nos. parallel sunk fully threaded screws 38mm long, should be used for fixing the hinges to the flush door after drilling a pilot hole 2.50mm dia 40mm long. Screws should not be hammered. Lock, tower bolts etc. necessary, if any to be paid separately.
- ii. Door frame (Chowkaths) of door, windows, clerestory windows and other similar works wrought, framed and fixed in position in contact with C.C. or brick masonry walls including supplying, fitting and fixing with M.S. flat hold fast (40mm x 3mm x 250mm) as per design and embedded in cement concrete block in prop 1:2:4 and with two coats of kiricide oiling to the timber faces in contact with C.C. and masonry as directed and specified.

#### GENERAL REQUIREMENTS:

- i. Dichtament DS and Nafufill BB2 for water proofing in sunk slabs and flat roofs.
- ii. Providing and fixing circular CI box for ceiling fan clamp.
- iii. 400mm long 50mm-dia PVC waterspouts to be connected to RW pipe.
- iv. High Density PVC rain water/sanitary pipe with all specials and jointing.
- v. Water supply in GI pipes as per drawing.
- vi. 15mm cement plaster of mix 1: 4 (1 cement: 4 fine sand) on fair side of brick/concrete surface.
- vii. 10mm ceiling plaster in CM 1:4 ( 1 cement : 4 fine sand)
- viii. 15mm cement plaster of mix 1:4 (1 cement: 4 fine sand) on rough side of brick wall surface.
- ix. Two or more coats of water weather proofing paint over a coat of cement primer or approved acrylic wall exterior wall primer on all exterior walls surfaces as specified in the schedule of finishes.
- x. Distemping with oil bound distemper as specified in the schedule of finishes over POP prepared surfaces.
- xi. Enamel paint over wood /steel surfaces over a coat of approved quality primer.
- xii. Painting of ceilings as specified.
- xiii. Making plinth protection with PCC (1:3:6) over bricks flat laid in CM 1:4 and finished with 15mm thick cement plaster in prop. 1:2 with floating coat of neat cement finish.
- xiv. House drains as per drawings/specifications.
- xv. Providing and fixing steel balustrade/baluster in Verandah/Passage etc. with M.S. Tube railing at top or as shown in the drawings.
- xvi. All exposed MS members and wood work to be painted with two coats of synthetic enamel paint over a coat of primer or as directed.
- xvii. All wood shall be kiln seasoned and chemically treated. Proof of seasoning and treatment to be submitted.

#### FLOORING & PAVING:

- a. Common Lobby & staircase : 25mm thick polished Kota stone slab flooring as per drawing over 20mm thick base of cement plaster 1:6 laid & jointed with white cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing.
- b. Dado in toilet: 6mm thick glazed tiles on a bed of 10mm thick cement plaster 1:3 and joint with white cement slurry.
- c. Toilet: Glazed white tiles flooring 200x200x6mm thick over a bed of cement mortar 15mm thick in prop. 1:3 finished with flush pointing of the joints using white cement with approved pigment to match with the shade of tiles.
- e Rooms: 40mm thick cement concrete floor consisting of 25mm under layer of cement concrete 1:3:6 (1 cement: 3 coarse sand: 6 coarse agg. of size 12.5mm and down) and 15mm thick wearing layer in cement concrete 1:1:2 ( 1cement : 1 coarse sand : 2 coarse agg. of size 10mm down) finished with a floating coat of neat cement finish using cement slurry for bond @ 2.75 Kg. Per sq.m of floor area, wearing layer is to be laid in panels including curing etc.

**HARDWARE AND FITTINGS:**

- i. 100mm long anodised aluminum handles with CP brass screws
- ii. 250 × 16mm long anodised aluminum sliding bolt with nuts/screws/CP brass screws
- iii. 300 × 16mm aluminum L-drops.
- iv. 300mm long anodised aluminum tower bolt with CP brass screws
- v. Rubber stoppers
- vi. Anodised extruded aluminum alloy butt hinge 100X75X4mm
- vii. All hinges shall be fixed with CP brass screws.
- viii. Minimum nos. of fixtures for one door shutter shall be # (a) tower bolts- 2 Nos. (b) Handles- 2 Nos. (c) Door stoppers- 1 No. (d) hinges # 3 nos. (e) 1 no. Mortice lock in the entrance main door.
- ix. For toilet doors # a) tower bolt-2 no. b) Handle-2 nos. c) door stopper-1no. d) hinges-3 nos.
- x. All window/ventilator panels shall be provided with fixtures such as stay & handles, for open-able. The thickness of glass panes shall be 4mm.

**SANITARY AND PLUMBING WORKS :**

- i. European/Oriassa pattern W.C. with low level PVC flushing cistern as per drawing.
- ii. Wash basin 630mm × 500mm and flat back type at toilet as per drawings. Wash basins to be provided with C.I. brackets.
- iii. Glass shelves (600×120mm).
- iv. Providing soap tray in the toilet.
- v. CP towel ring 450mm long.
- vi. Suspension hooks (min 2 nos.) at inside of Toilet doors.
- vii. C.P. brass ablution tap in toilet.
- viii. Rain water pipe (PVC)
- ix. Floor trap with jalli in toilet.
- x PVC soil/waste water pipe (110mm dia, ); vent pipe (75mm dia, ) with necessary fittings like bends, tees, junctions floor traps, terminal guard etc. with pipe clips and joints as per requirements of sanitary scheme.
- xi Gully trap
- xii. Inspection chambers, manholes, drainage pipes etc. as per drawings.

**WATER SUPPLY**

- i. Medium class GI pipes with all GI fittings clamps and specials etc. for water supply lines 25mm, 40mm dia pipes shall be in as concealed.
- ii. Brass full way valve, C.P. brass concealed stop cock, gun metal non-return valves, full way valve C.P. brass connecting tubes, CP brass long body bib cock, brass connections, C.P. brass grating 100mm dia, C.P. brass angle valves etc. to be used. The majority of the plumbing lines are concealed exposed GI pipelines shall be painted with white paint over a primer all external and embedded pipes shall be painted with the bituminous paints two coats.
- iii. Testing of the piping system before plastering is to be done in toilet.

**MANDATORY TESTS:**

The various mandatory tests shall be carried out by the contractor and no separate payment shall be made unless otherwise specified in the schedule of rates. Following tests /test certificate to be produced by the contractor at his own cost.

- (i) Water for construction and curing to be tested before use ('PH' value should not be less than 6.)
- (ii) Cube test for RCC to be done as per relevant is code of practice IS 456-1978.
- (iii) Test certificate for steel materials, M.S. rod, Torsteel should be produced.
- (iv) T.P. challan for timber and forest produce used shall be produced.
- (v) Certificate of registered anti termite firm for antitermite treatment.

**STANDARD/TECHNICAL SPECIFICATION FOR  
CONSTRUCTION OF PROPOSED ET HOSTEL NEAR HOSTEL NO-4 AT DULIAJAN.  
(CIVIL WORKS)**

**1.1 SCOPE :**

The job shall be done as per CPWD specifications. The specification and the method of measurements described

herein are applicable for all the items of works involved in the site.

2.1 GENERAL : All materials used in the work shall conform to the latest revision of the relevant Indian Standard Specifications to the extent practicable. Where no such specifications exist they shall be of the best quality available in the market. Wherever ISI certified materials and products are available these alone shall be used. All materials shall be stored at site in accordance with IS-4082-1977.

Unless specially provided for in the contract the tendered rates shall include the cost of carriage, transport, loading, unloading and stacking as directed for all materials required on the work. Where a tender provides a rate for transport of materials, it includes for all loading, unloading and stacking on the site in such position and manner as directed.

### 3.1 MATERIALS AND WORK SPECIFICATIONS :

**CEMENT.** Cement shall be issued by the company from its Store at Duliajan on chargeable basis.

Cement shall be stored in weatherproof shade with raised wooden plank flooring to prevent deterioration by dampness or intrusion of foreign matter. It shall be stored in such a way as to allow the removal and use of cement in chronological order of receipt, i.e. first received being first used. Cement deteriorated and or clodded shall not be used on work but shall be removed at once from the site.

2. Fine Aggregate : Sand shall conform to relevant portion of IS 515. It shall pass through an IS sieve 4.75(3/16 BS) test sieve, leaving a residue not more than 5%. It shall be from natural source or crushed stone screening, if allowed. Chemically inert, clean, sharp, hard, durable, well graded and free from dust, clay, shale, large pebbles, salt, organic matter, loam mica, or other deleterious matter. The sum of percentage of all such deleterious materials in sand shall not exceed 5% by weight. It shall be washed if directed to reduce the percentage of deleterious substances to acceptable limits. Sand shall not contain any trace of salt and it shall be tested and sand containing any trace of salt shall be rejected.

The fine aggregate for concrete shall be graded within limits as specified in IS 383 and the Fineness Modulus may range between 2.60 to 3.20.

The fine aggregate shall be stacked carefully on a clean, hard, dry surface so that it will not get mixed up with deleterious foreign materials. If such a surface is not available a platform of planks or corrugated iron sheets or brick floor or a thin layer of lean concrete shall be prepared.

3. Coarse Aggregate : Shall consist of crushed or broken stone 95% of which shall be retained on 5.75mm IS test sieve. It shall be obtained from crushing Granite, Quartzite, Trap Basalt or similar approved stones from approved quarry and shall conform to IS-383 and IS-515. Coarse aggregate shall be chemically inert when mixed with cement and shall be fairly cubical in shape and free from soft, feeble, thin, porous, laminated or flaky pieces. It shall be free from dust and any other foreign matter.

4. Reinforcement : Reinforcement shall be of mild steel of tested quality conforming to IS-432(part-I) #1996 and any other applicable or TMT bar conforming to IS-1786-1985 of Fe 415 Grade and IS-1139-1966 or hard drawn steel wire fabric conforming to IS 1566-1967.

All reinforcement shall be free from cracks, surface flaws, laminations, jagged, imperfect edges, loose mill scales, loose rust and coats of paints, oil or other coating which may destroy or reduce bond.

5. Bricks : Bricks shall generally comply with IS-1077 except in size, which shall be conforming to the sizes locally available.

Bricks of 75 class designation shall be the best quality locally available, table moulded, well burnt but not over burnt, have plane rectangular face with parallel sides and sharp right angle edges have a fine compact and uniform texture. The bricks shall be free from cracks, chips, flaws, stones or lumps of any kind and shall not show efflorescence either dry or subsequent to soaking in water. It shall emit a clear ringing sound on being struck and shall not absorb water more than 20% by weight. Common building bricks shall have a minimum compressive strength of 75 kg/sq.cm. unless otherwise specifically stated.

6. Water : Water for mixing cement mortar or concrete shall not be salty or brackish and shall be clean, reasonably clear and free from objectionable quantity of silt and traces of oil, acid, injurious alkali, salts, organic matter and other deleterious materials which will either weaken the mortar or concrete or causes efflorescence or attack the steel in reinforced cement concrete. Water shall be obtained from sources approved by the Site Engineer. Potable water is generally considered satisfactory for mixing and curing concrete mortar masonry etc. Where water other than from main source is used this shall be tested in an approved testing laboratory to establish its suitability. All charges connected therewith shall be borne by the contractors.

7. Timber : The timber used shall be the best of the kind specified (hollock, sal, bonsum, sisu) and shall be well seasoned, dry, straight, grained, free from large or loose knots, sap wood or shakes. The wood work shall be finished to the exact dimensions shown in the drawings or as detailed in the specifications.

8. Steel Windows and Doors : Pressed steel windows and pressed steel door frames shall be fabricated out of steel section conforming to IS: 226. They shall conform to IS: 1038. Unless otherwise specified the details of construction etc. shall be as per drawing.

9. Floor tiles : Plain cement tiles, chequered tiles, mosaic tiles, terrazzo tiles, shall conform to IS-1237. For neutral shade tiles grey cement shall be used. Tiles shall be compacted by mechanical vibration and hydraulically pressed. It shall be of choice shade and shall have desired pattern of chip distribution. The top wearing course mosaic tiles shall have white cement and grey cement in 50:50 proportions.

The size of chips and proportion of chips to cement in terrazzo or mosaic floor shall be as specified in IS-1237. The size and thickness of tiles shall be as approved by the Site Engineer.

10. Glazed tiles : White or coloured glazed tiles shall comply with IS-777. They shall be from an approved manufacturer(Kajaria, Somani,Nitcco) and shall be flat and true to shape. They shall be free from crazing, spots, chipped edges and corners. The glazing and colour shall be of uniform shade and unless otherwise specified the tile shall be 6mm thick.

11. Kota : Shall be of selected quality, hard, sound, dense and homogeneous texture, free from cracks, decay, watering and flaws. Stone slabs shall be of uniform colour and as approved by the Site Engineer. They shall be machine cut and mirror polished where specified and shall conform the required sizes. Thickness shall be as specified in the respective items.

12. Glazing : Glass used for glazing shall be sheet glass of best approved quality, free from flaws, specks, bubbles and shall be 6mm thick unless otherwise specified.

13. Paints and Distempers : Oil bound distemper, cement primer, enamel paint, anti-corrosive primer, red lead, water proof cement paint shall be from an approved manufacturer and shall conform to the latest Indian Standards for various paints. Ready mixed paints as received from the manufacturer without any admixture shall be used, except for addition of thinner, if recommended by the manufacturer.

#### 4.1 CEMENT MORTAR :

Cement mortar shall be of proportions specified for each type of work in the schedule. It shall be composed to Portland cement and sand. The ingredients shall be accurately gauged by measured and shall be well and evenly mixed together in a mechanical pan mixer, care being taken not to add more water than is required. No mortar that has begun to set shall be used. River sand shall be used unless otherwise specified.

If hand mixing is allowed it shall be done on pucca water proof platform. The gauged materials shall be put on the platform and mixed dry water will then be added and the whole mixed again until it is homogeneous and of uniform colour. Not more than one bag of cement shall be mixed at one time and which can be consumed within half an hour of its mixing.

#### 5.1 CONTRACTOR'S GODOWN :

The contractor must make adequate arrangement at his own expense, for the storage in suitable godown of all perishable materials such as cement. On no account may cement be stacked on the ground either in or outside godown.

#### 6.1 PREPARATION OF SITE

The land described or shown on the site plan shall be cleared of all obstructions, rubbish, brush wood, jungle and bamboo clumps as directed by the Site Engineer.

#### 7.1 EXCAVATION OF FOUNDATION

i) Trenches for wall foundation, column footings, raft-foundations, pile caps, plinth beams, water tanks, cess pits etc. shall be excavated to the exact length, width and depth shown or figured on the drawing or as may be directed by the Site Engineer. If taken out to greater length, width or depth than shown or required, the extra work occasioned thereby shall be done at contractor's expense. Extra depth shall be brought up by plain cement concrete filling 1:4:8 proportion and extra length and width filled in by rammed earth or if the Site Engineer thinks it necessary for the stability of the work by 1:4:8 concrete as may be directed at the contractor's cost.

ii) Excavated materials shall be used for filling in plinth or each side of the foundation blocks or trenches or it shall be spread elsewhere on or near the site work including watering, ramming and consolidating or removed from site as may be ordered.

iii) The contractor shall at his own expense and without extra charge, make provision for supporting all utility services, lighting the trenches, separating and stacking serviceable materials neatly, shorting, timbering, bailing out water either sub-soil or rain water including pumping at any stage of the work. Trenches shall be kept free from water masonry of concrete works are in progress and till the concrete is sufficiently set.

**8.1 FILLING :**

Filling shall be done with approved quality earth. It shall be free from salt, organic matter, black cotton or slushy earth and combustible materials. All clods shall be broken.

**8.2 PLINTH FILLING :**

Shall be done in layers not exceeding 15cm watered and consolidated by ramming with iron or wooden rammers weighing 7 to 8 kgs so as to achieve 95% dry density and having base 20cm square or 20cm diameter. When the filling reaches the finished level surface shall be flooded with water for atleast 24 hours, allowed to dry and then rammed and consolidated after making good any settlement in order to avoid settlement at a later stage. Special care shall be taken to pack earth under plinth beams and column corners. Finish level of filling shall be kept to a slope intended to be given to the floor.

**8.3 SAND FILLING :**

Where the floor is to be laid on a sand mat over the filling the sand must be laid in course of not greater depth than 150mm and each layer must be saturated with water and levelled true to the exact contour of the finished floor.

**9.1 SAND :**

i) Quality : Sand to be used for mortar or concrete shall be clean, well graded, hard, strong, durable, uncoated grains, free from any deleterious matter such as loam, clay, shells, soft or flaky particles or any organic matter. More than a mere trace of mica is very objectionable.

The sand shall be tested for organic and other foreign matter before use.

If the percentage of silt and clay matter exceed 5 percent the sand shall be washed before use and retested and shall not be used until the site content is below this figure.

ii) Precaution against using damp sand with cement : During the rains or when there is heavy dew, sand for concrete or mortar must be covered in order to keep it dry. Damp sand must not be mixed with cement.

iii) Size : For mortar, brick work or ordinary plaster sand having particle up to 3mm in size may be used.

For concrete work the sand shall include all particles from very fine (exclusive of dust) up to those which will pass through a 6mm mesh screen but not more than 10 percent shall be retained on 3mm mesh screen.

iv) For finishing coats of fine plaster a smaller grained sand shall be used but on no account may dirt sand, silt or sand of which more than ten percent passes through a screen having two thousand and five hundred (2,500) meshes to the 645 sq.mm be used.

**10.1 CEMENT :**

Cement issued to the contractor shall store in suitable dry place in a raised wooden platform . Care should be taken so that no cement is got damaged in transportation from OIL's Godown at Duliajan to the site and poor quality of storage facilities. Cement should be consumed which comes to the site first.

**11.1 CEMENT MORTAR :**

i) Must be freshly mixed : Cement mortar will only be mixed in such quantities as can be used up on the work within half an hour of mixing. Mortar which has been mixed longer or which has taken its initial set will on no account be used on the work or remixed with fresh mortar. It must be immediately removed from the site or work.

ii) Method of mixing : The cement and sand will be mixed dry in the specified proportions, by turning over atleast three times on the mixing platform. Only sufficient water will then be added, through a rose of a watering can, to produce a workable mixture. The wet mortar will be thoroughly worked or mixed by repeatedly turning over, not less than three times on the mixing board.

iii) Size of mixing platform and precaution against list : All mixing of mortar must be done on platforms of angle size and workman bringing the material to and from the platform must not be permitted to walk about on it, thereby bringing mud or dirt to the place, where the mortar is being mixed. The platform must be clean and level and all joints closed or filled so that the cement is not washed out.

iv) Proportion of cement and sand : Where not otherwise specified, cement mortar for plaster will consist of one part of cement to two parts of sand. For mortar for brick or stone masonry work the proportion unless otherwise specified, will be one part of cement to three parts sand

**12.1 BROKEN BRICK BATS:**

i) Quality of bricks and method of manufacture :

Broken bricks or brick bats shall be prepared by breaking well-burnt bricks and jhama brick bats. On no account may old bricks, spongy jhama, soft or under burnt bricks be used.

(ii) Size : For foundations under flooring etc. the material shall be broken to pass through a 38mm gauge. For reinforced concrete, castings, lintels or paving the material shall be broken to pass through a 20mm gauge. The material must be screened and all rubbish and dust removed before being used.

### 13.1 CEMENT CONCRETE

#### PLAIN AND REINFORCED CEMENT CONCRETE :

##### i) General :

Except where they are varied by the requirements of this specification due provision of Indian Standard Specification IS-456-1978 for plain and reinforced concrete and IS-432 part I & II for mild and medium Tensile steel bars and hard drawn steel wire for concrete reinforcements shall be held to relevant IS applicable together with the latest amendments shall be held to be incorporated in this specification. It shall be intent of these specifications to ensure that all concrete placed at various locations of the job should be durable strong enough to carry the design loads, it should wear well and practically be impervious to water. It should be free from such defect as shrinkage cracking and honey combing. Inclined slabs , beams of gallery, staircase, to be casted monolithically at a time.

##### ii) Proportioning the Mix :

In ordinary concrete, excluding controlled concrete, proportions of cement to fine and coarse aggregate shall be as specified in the respective items and shall be accurately measured . These proportions are based on assumption that the aggregates are dry. If aggregates are moist allowance shall be made for bulking in accordance with IS 2386 (Part-III).

The proportions in which the cement, fine aggregate and coarse aggregate are mixed may be 1:2:4 meaning one part by volume of cement two parts by volume of fine agg and four parts by volume of coarse agg. Thus 1 bag of cement weighing 50 kg. to be mixed with 0.067cum of coarse agg to get a mix of proportion 1:2:4 nominal mix.

##### iii) Mixing :

Concrete of 1:2:4 or richer mix shall be mixed in an approved mechanical mixer. The mixer and mixing platform shall be suitably protected from wind and rain. Aggregates shall be measured accurately and mixing shall be continued until there is a uniform distribution of the materials and the mass is uniform in colour and consistency and the mixing time may be ½ to 2 minutes.

1.mixing platform shall be suitably protected from wind and rain. Aggt. shall be accurately measured out in measured quantity and mixing shall be continued until there is a uniform of the materials and the mass is uniform in colour and consistency. All RCC job pertaining to drain slab, fencing post etc. to be carried out in prop 1:2:4.

**TRANSPORTATION :** The concrete shall be conveyed from the place of mixing to the place of final deposits as rapidly as practicable by methods which will prevent segregation or loss of any of the ingredients. If segregation does occur during transport, the concrete shall be remixed before being placed. In no case more than 30 min. shall elapse between mixing and final placement in its position.

Concrete shall be thoroughly compacted during the operation of placing and thoroughly worked around the reinforcement by punning, prodding, mechanically vibrating. The intensity and duration of vibration should not be more which may cause segregation of concrete and will be weaker in strength.

##### iv) Curing :

Concrete shall be carefully protected during first stage of hardening from harmful effects or excessive heat, drying winds, rain or running water and shock. It shall be covered with a layer of sacking, sand, canvas, hessian or similar absorbent materials and kept constantly wet for ten days from the date of placing of concrete. Alternatively, the concrete being thoroughly wetted and covered by layer of approved waterproof material which should be kept in contact with it for seven days.

##### v). FORM WORK :

a. Form work shall conform to the slope lines, curvature and dimensions of concrete and RCC structure as shown in the relevant drawings. Form work for concrete shall be plywood, steel plates, seasoned timber or other approved materials as per directions of the Engineer. It shall be sufficiently tightened to prevent loss of cement slurry and all holes and joints shall be chaulked with putty. For casting R.C.C. slab polythene sheet may have to be used to prevent leakage as advised by the Engineer Incharge for which no extra payment will be made to the Contractor.



b. **SCAFFOLDING** : The scaffolding required for brick work, plastering work etc. shall be strong enough and of approved materials by the Engineer-in-charge. Before use of scaffolding, it has to be inspected and approved by the Engineer-in-charge or authorised representative.

c. **PLANKING AND STRUTTING** : The contractor is responsible for the design, fixing and removal of planking, strutting shoring etc. of sufficient strength required for earth pressure for which no extra claim on this amount will be granted.

All rubbish particularly Chippings, shavings and saw dust, shall be removed from the interior of the forms before the concrete is placed and the form work in contact with the concrete shall be cleaned and thoroughly wetted or treated with an approved composition. Care shall be taken that such approved composition is kept out of contact with the reinforcement.

In normal circumstances and where ordinary Portland cement is used form may generally be removed after the expiry of the following periods.

- a) Walls, columns and vertical face of all structural members as may be decided by the Site Engineer # 24 to 48 hours.
- b) Slabs side (props left under ) 3 days
- c) Beam soffits (props. left under) 14 days
- d) Removal of props under slabs
  - i) Spanning up to 4.5 m # 14 days
  - ii) Spanning over 4.5 m # 21 days
- e) Removal of props under beams :
  - i) Spanning up to 6 m # 21 days
  - ii) Spanning above 6 m # 28 days

In no circumstances shall forms be struck until the concrete reaches a strength of at least twice the stress to which concrete may be subjected at the time of removal of form work. All form works shall be removed without such shock or vibration as would damaged the concrete. Form work for long span deep beams to be supported by MS props or Bhaluka Bamboo props as required based on the design for the formwork to take care the massive load of the green concrete.

#### 14.1 BRICKS:

- A) All bricks shall be of 75 class designation quality locally available as approved by the Site Engineer.
- B) Bricks shall be of 225X113X75mm size or 250X125X75mm nominal size as specified in the item of work where no particular size is mentioned. Half brick wall shall be with 250X125X75mm size bricks and walls of one brick thick, bricks on end walls and brick flat paving may be done with either size of bricks.
- C) Bricks shall be well burnt, sound, hard with sharp edges of uniform size and shape free from cracks, stones or particles of lime and other defects, shall be kiln burnt and satisfy the following requirement :
  - i) They shall give a clear metallic sound when struck
  - ii) They shall be of uniform colour and size
  - iii) They shall not be cracked, stratified or under or over burnt
  - iv) The tolerance in dimensions shall be +/- 12mm in length, 6mm in width and 3mm in height.
  - v) Keys or frogs shall be formed on one of the larger size, except in the case of machine extruded bricks where no frogs are required
  - vi) The increase in weight when soaked in water for 24 hours shall not be more than 20% of the dry weight of the bricks.
- D) If required by the Site Engineer necessary test shall be conducted at the contractor's expense to ensure quality. In general, the bricks shall be the best quality locally available.

#### 14.2 BRICK BALLAST :

Under burnt bricks shall not be used for making brick ballast. These shall be made from lump ballast or bats, Ballast that is brittle and easily crushed under beaters shall not be used.

#### 15.1 BRICK WORK :

- (i) 75 designation brick work shall consist of first class bricks laid in cement mortar and as hereinafter specified.
- (ii) No bricks may be used until after they have been soaked under water for at least one hour.

(iii) Care must be taken that the bricks are perfectly clean and free from lime, moss or dirt of any kind. If necessary they must be scrubbed before use.

(iv) Great care must be taken to masonry in progress of construction damp. When work is left off for the day troughs shall be formed, by means of fillets of mortar 51mm high all round the unfinished work and shall be kept filled with water. Vertical or inclined surfaces must be frequently watered from a rose headed can. Water should not be dashed with violence against new work as this washes out the mortar. Should the work be delayed owing to holidays or for other reason, the contractor must make adequate arrangements for keeping the work wetted, and shall continue to do so for at least ten days or such longer time as directed, after the brickwork has been completed.

(A) Brick work in cement mortar with 75 designation brick including racking out joints and curing complete as directed, in sub structure and superstructure in prop. 1:3.

(B) 112mm thick 75 designation brick nogged wall in cement mortar embedded with protruding M.S. rod 6mm dia in column including racking out joint and curing complete as directed in super structure above plinth in prop. 1:4.

(C) 112mm thick reinforced brick wall in prop. 1:5 reinforced with two lines of M.S. rods 6mm dia as specified embedded in 38mm thick concrete course in prop. 1:2:4 with coarse agg. 12mm down at every fourth course embedded with protruding rod in column including curing etc. complete as directed in super structure above plinth level.

Brick work in cement mortar with 1st class local bricks, the quality of which is to be approved by the Engineer Incharge. Bricks are to be thoroughly cleaned, soaked in fresh water for a period of atleast 6 hrs. before use. Bricks to be tested for its compressive strength as per relevent IS: code and it shall not absorb water more than 20% of its dry weight. A good bond shall be maintained both laterally and transversely. Bricks joints shall not exceed 12mm. No broken bricks shall be used except as closers.

After the days work all joints shall be raked to 12mm depth so as to provide a good grip for plastering. Brick work to be properly cured till mortar has set. Brick work in sub structure up to plinth level to be done in prop. 1:5 and 115mm thick brick wall in super structure prop 1:5 shall be reinforced with 12mm mesh chicken wire net at every 4th course and 2 Nos 6mm M.S. bars of 350mm long shall be projected from the face of column in the same line with the chicken wire net so as to give a grip with the column.

#### 16.1 FLOORING/SKIRTING/CLADDING :

##### a) Preparing of Plinth Filling :

All plinth fillings shall be properly consolidated in layers, watered, rammed and allowed to consolidate to the Site Engineer's satisfaction before any flooring is laid. When the flooring is to be laid over a foundation of sand, broken stone or brick or a combination of sand and broken stone or brick the filling shall be removed to a depth equal to the thickness of the flooring plus such foundation layers.

##### b) Foundations :

i) Sub-layer of sand : After the plinth filling has been prepared as detailed in specification above a sublayer of sand 300mm deep shall be laid watered and brought to an even surface.

ii) Layer of broken stone or brick : Over the sand a foundation course of bricks shall be laid and the interstices filled in with sand. The bricks shall be tightly packed and laid so as to break joint.

##### c) Tile floors :

i) Foundation and cement floating under tiles : Over the foundation as in (b) above 2 coats of cement plaster, 1 part of cement to 1 part of sand, prepared in a very liquid condition will be floated over it and allowed to set.

ii) Laying : After the tiles have been soaked in water for atleast two hours and the cement foundation sprinkled with water, laying work may commence and shall start from the centre of the room or area to be tiled, work being continued in both directions so that borders are laid last. Each tile will be laid in and drawn up in neat cement, care being taken to exclude air bubbles. Threads shall be stretched cross the surface, at intervals, parallel to the short sides of the area to be tiled to serve as guide lines.

iii) Cleaning : After a small area has been laid all superfluous cement will be wiped off the surface. Stains shall be removed by moistening with hydrochloric acid and rubbing with pumice stone and afterwards washing with warm water.

iv) Fixing to walls : In fixing tiles to walls the walls shall be rendered with cement plaster and the plaster scored diagonally and allowed to set. When laying the tiles work shall commence from the bottom, the back of each tile being smeared with neat cement of the consistency butter and the tile pressed into position.

#### 17.1 DOOR SHUTTERS & Frames :

i) Door frames as specified in drawing. scantling being dressed and planed to full dimensions and properly framed

and morticed together, the joints, fittings fully and accurately. The frames will be rebated on one side 12mm deep and the full thickness of the door leaf and bead moulded or chamfered on the otherside or as may be directed. One coat of wood primer to be provided on the face which is in contact with the brick wall.

Timber used shall be 1st class matured seasoned & matured Hollock timber as approved by Engineer in charge and free from large or loose knots, twists, shakes, sun cracks and sap wood.

ii) Flush door : Flush door (single leaf finished) made of phenol bonded Duratuff exterior grade (both side) plain medium density fibre board. The door should be fixed using 4 nos. of hinges 125mm long ensuring that the hinges are not fixed less than 150mm from the edges with 8 nos. parallel sunk fully threaded screws 38mm long, should be used for fixing the hinges to the flush door after drilling a pilot hole 2.50mm dia 40mm long. Screws should not be hammered. Lock, tower bolts etc. necessary, if any to be paid separately..

#### 18.1 CEMENT PLASTERING :

i) Preparation of surface : All putlog holes in brick work and junction between concrete and brick work shall be properly filled in advance. Joints in brick work shall be raked about 10mm and concrete surface hacked to provide grip to the plaster. Projecting burrs of mortar formed due to gaps at joints in shuttering shall be removed.

The surface shall be scrubbed clean with wire brush/coil brush to remove dirt, dust etc. and the surface thoroughly washed with clean water to remove efflorescence, grease and oil etc. and shall be kept wet for a minimum of six hours before application of plaster.

ii) Proportion : The cement plaster shall be in 1:4 prop of cement and sand.

iii) Mixing : The cement and sand should be thoroughly mixed in dry condition. After dry mixing the materials shall be wetted with just sufficient water to bring the mortar to proper consistency of thick paste. Mortar should be used immediately after mixing and arrangements shall be made so that not more than 30 minutes elapse between the cement first coming in contact with the moisture and laying. In all exterior plaster works waterproofing compound to be added to the mortar as per the specification of the manufacturer, if not indicated in the item rate quoted should be inclusive of the same.

iv) Placing : Plaster shall be laid over the prepared surface in one coat to the specified thickness and rubbed with #PATAS# and trowel and shall be smooth, free from waviness and trowel marks.

v) Curing the plaster must be kept wet throughout the entire process and for ten days after four hours of completion of plastering.

#### 19.1 PAINTING :

i) Oil bound distemper : The surface shall be prepared by cleaning the surfaces of the structure and making free from all dust and dirt. Interior surfaces are to be provided with 1.5mm thick acrylic water based wall putty of an approved brand make. A primer coat either of cement primer or of an approved distemper shall be applied. After the priming coat has dried the surface shall be lightly sand papered and dusted to make it smooth to receive distemper.

Distemper shall be prepared as per the directions of the manufacturers and conforming to the shade approved. It shall be applied in specified coats taking care to allow for drying of each coat before subsequent coats are applied.

ii) Water proofing cement : Providing and applying the cement based paint conforming to IS: 5410-1990 , two coats over primer or as per manufacturers including scraping , scaffolding ,curing etc. The surface shall be prepared as specified above and thoroughly wetted with clean water before waterproof cement paint is applied. The make of cement based paint shall be Snowcem or as approved by the Engineer in-charge of equivalent make . The colour and shade of the of paint shall to be approved by the architect/ site engineer.

Application of SANDEX : The PAINT shall be applied as per the manufacturers specification and instruction in two coats.

The paint shall be prepared strictly as per manufacturer#s specifications and in such quantities as can be used up in an hour of its mixing as otherwise the mixture will wet and thicken, affecting flow and finish.

The paint thus prepared shall be applied on clean and wetted surface with brush or spraying machine. The solution shall be kept stirred during the period of application. It shall be applied on the surface, which is on the shady side of the building so that the direct heat of the sun on the surface is avoided. The completed surface shall be watered after the day#s work. Number of coats shall be as specified in the item.

Painting over wood work :

a) The surface to be painted shall be thoroughly dry. All projections such as glue, all tool marks and other

irregularities shall be carefully removed by means of a stopping knife and smoothed over and all head of nails or screws set 6mm below the surface.

b) Knotting shall be carried out for all resinous woods such as pitch or red pine, an application of hot lime shall be applied to the portion to be stopped and allowed to remain for 24 hours after which it will be scraped off and the stopping completed.

c) After the surface has been prepared as described above the primary coat shall be applied. When the primary coat has dried all nails and screw holes and all cracks shall be stopped and all irregularities shall be smoothed out with sand paper or pumice stone. Water proof sand paper is to be used.

d) After the primary coat has dried out the subsequent coats shall be applied to the number specified. Each coat being allowed to dry thoroughly before the next coat is applied. Each coat when dry except the finishing coat, should lightly rubbed down with sand paper and washed before the next coat is applied. The paint shall be applied evenly and properly by means of crossing and laying off the latter in the direction of the grain of the wood work.

iii) Purchase of paint, varnish or oil : Only the best brands obtainable will be used and should the contract permit the contractor to supply any paint, oil or varnish he shall purchase only such brands as the Site Engineer shall approve of in writing. All purchases must be made direct from the manufacturers or through an agent approved of in writing by the Site Engineer. Should the Site Engineer so direct copies of all indents and receipts for purchase must be submitted for inspection.

iv) Paint etc. to be purchased in sealed containers : All paints, oil or varnishes supplied by the contractor must be produced for the inspection of the Site Engineer of the work in the manufacturers sealed and unopened containers. All containers from which the contents have been removed and are not required on the work must be destroyed and no extra payment will be granted for such destruction.

v) Only ready mixed paint to be used : Only ready mixed or varnished of the make or brand specified will be permitted to be used exactly as received from the manufacturer without any admixture what so ever unless previously authorised, in writing , by the Site Engineer.

#### 20.1 DAMP PROOFING COURSE:

It shall consist of 1:1.5:3 plain cement concrete with approved water proofing materials such as cico, impermo etc. of specified thickness. Edges of DPC shall be straight, even and vertical side shuttering shall consist of wooden or steel forms and shall be strong and properly fixed so that it is not disturbed during compaction and mortar or cement slurry does not leak through. When forms are struck the surface should be smooth without any honey combing. The surface shall be kept wet for seven days.

Before commencing the superstructure work, the top of concrete course shall be dried and cleaned of all materials. Blown type bitumen shall then be applied uniformly on the surface and the side of the concrete coming in contact with flooring on the inside shall also be painted with bitumen.

#### 21.0 ANTITERMITE TREATMENT :

21.1 The compound is 0.50% trichel (by weight), made from an aqueous emulsion having concentration 1:20 with trichel and water. This emulsion of trichel to be provided at the bottom of foundations feits and walls on either side up to a height of 30cm from bottom of the excavation made for column, plinth beam, wall, trenches etc. at the rate of 5 ltrs per sqm of the surface area before the commencement of the construction.

21.2 Pre construction anti-termite treatment with aqueous emulsion having concentration 1:20 with trichel solution and water. This provides emulsion containing 1% trichel solution (by weight) # applying in the entire levelled area after plinth filling and before laying floor, trichel solution @ 5 (five) litres per square metre of the surface to be spread with light rodding so as to ensure proper absorption by the filled up earth.

21.3 Pre construction anti-termite treatment with aqueous emulsion having concentration 1:20 with trichel solution and water. This provides emulsion containing 1% trichel solution (by weight) # applying the soil along the external perimeter of the building (after construction completed) to a distance close to the plinth wall as specified and as directed by the dept. up to a depth of 30cm making rod holes along the line @ 15cm apart to a depth of 30cm.

#### 22.1 PLASTER OF PARIS:

Surface preparation for plastered wall, ceiling etc. to be done by providing average 1.50mm thick plaster of Paris punning including clearing, rubbing with sand paper, filling gaps/depression etc. with chalk powder and POP pests to make the surface even and smooth.

#### 23.1 WINDOWS & VENTILATORS :

Providing and fixing of anodized aluminium windows and ventilators of standard sections -sliding, open-able or fixed as per drawings and of Hindalco make, or of IS approved standard make for glazing with necessary specially

designed pulling handles, locking device etc. Providing and fixing 4mm thick clear unwaved glass with clip, and special rubber gasket. All plastering and other works shall be made plain and fine to make up the gaps, if any, between the wall and frame. The job shall be finished complete in all respect and full satisfaction to the Site Engineer.

#### 24.1 WATER PROOFING :

##### (A) WATER PROOFING TREATMENT FOR SUNK FLOORS AND FLAT ROOFS

###### 1. NAFUFILL BB 2

The following operations and procedure to be carried out as per directions of the Site Engineer and the technical specification.

- i) Remove all the old treatments, loose plasters and concretes.
- ii) Cleaning the floor thoroughly by washing and wirebrushing.
- iii) Prepare cracks with 1:4 cement mortar mixed with Putz-Dichtament to fill cracks and other porous areas. And other vulnerable areas by Polymer modified cement for quick and non shrink installation. ( as recommended for waterproofing technically)
- iv) Applying of waterproofing system, which works on crystallisation, penetrates concrete even against hydrostatic pressure in 2 coats of minimum 2mm thickness and maximum 6mm thickness. Subsequent coat may be applied when the previous coat is not completely dried out subject to minimum 1 hour. Base component i.e. ppc cement 53 npa in conjunction with NAFUFILL BB2 (saponification-resistance plastic co polymer dispersion component in concentrated liquid form) could be mixed in following method.
  - a. 1 part volume (pbv) Nafufill BB2 should be diluted in 4 pbv of clean potable water, which gives 5 litre of polymer component
  - b. Appx. 2.5 to 3 pbv of ppc cement powder should be mixed with 1 pbv of the above component to obtain the desired consistency.

Once the concrete surface has dried the above bond coat is applied.

The mix can be applied with a trowel, brush, spray, Slightly dampen the surface prior to coating.

CEMENT # All cement to be used in the concreting of the sunken slabs of toilets and bath areas are to be done with P.S.C. 53 N.P.A.

- v) Protection plaster 12mm thick should be applied in the following composition 1 pbw ppc cement + 3 pbw sand 0.2mm + mixing liquid consisting of 1 pbw Nafufill BB2 + 10 pbw water.
- vi) The above laid protection plaster layer to be finished even and smooth with 20mm smooth cement finished screed concrete with putz #dichtament concentrated liquid mortar plasticiser and integral water proofing compound to be dosed @ 1% of cement weight and to provide required slope.

Finishing of the joints of parapets and roof floors up to 6 from the junction only including making of gola at the junction with above producers.

N.B. From above operations and applications the adhesion to the base is distinctly improved thus allowing structural bonds between existing mortars, concretes and fresh mortar. The hardened mortar is improved in flexibility, thus avoiding stresses and increases the compressive and flexural properties.

25.1 Roofing :Providing Trapezoidal Polyester coated Galvanised Steel Sheets Roofing of Dynatrap profile( manufactured bu Dyna Roof Pvt. Ltd.)having 38 mm crest height and 190 mm c/c pitch distance , 1060 mm width made from cold rolled low carbon steel conforming to IS :513.

Polyester coated Galvanised Sheet accessories (viz. ridges, gutters, valleys, flashings) 500 mm width made as per specification with approved colour , size and quality as per IS:14246:95 fitted with guard film.

Fitting accessories: Self drilling Tapping screws, all xylan coated conforming to AS 3566,1000h SST fitted with EPDM washers.

#### GENERAL HSE POINTS

1. It will be solely the Contractor's responsibility to fulfill all the legal formalities with respect to the Health ,Safety and Environmental aspects of the entire job (namely; the person employed by him, the equipment , the environment, etc.) under the jurisdiction of the district of that state where it is operating. . Ensure that all sub-contractors hired by him comply with the same requirement as the contractor himself and shall be liable for ensuring compliance all HSE laws by the sub or sub-sub contractors.

2. Every person deployed by the contractor in a mine must wear safety gadgets to be provided by the contractor. The Contractor shall provide proper Personnel Protective Equipment as per the hazard identified and risk assessed for the job and conforming to statutory requirement and company PPE schedule. Safety appliances like protective footwear, Safety Helmet and Full Body harness has to be DGMS approved. Necessary supportive document shall have to be submitted as proof. If the Contractor fails to provide the safety items as mentioned above to the working personnel, the Contractor may apply to the Company (OIL) for providing the same. OIL will provide the safety items, if available. But in turn, OIL will recover the actual cost of the items by deducting from Contractor's Bill. . However , it will be the Contractor's sole responsibility to ensure that the persons engaged by him in the mines use the proper PPE while at work.  
All the safety gears mentioned above are to be provided to the working personnel before commencement of the work.
3. The Contractor shall prepare written Safe Operating Procedure (SOP) for the work to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOP should clearly state the risk arising to men ,machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed.
4. The contractor shall provide a copy of the SOP to the person designated by the mine owner who shall be supervising the contractor's work.
5. Keep an up to date SOP and provide a copy of changes to a person designated by the Mine Owner/Agent/Manager.
6. Contractor has to ensure that all work is carried out in accordance with the Statute and SOP and for the purpose he may deploy adequate qualified and competent personnel for the purpose of carrying out the job in a safe manner. For work of a specified scope/nature, he should develop and provide to the mine owner a site specific code of practice in line .
7. All persons deployed by the contractor for working in a mine must undergo Mines Vocational Training, initial medical examination, PME. They should be issued cards stating the name of the contractor and the work and its validity period, indicating status of MVT,IME & PME.
8. The contractor shall submit to DGMS returns indicating # Name of his firm, Registration number, Name and address of person heading the firm, Nature of work, type of deployment of work persons, Number of work persons deployed, how many work persons hold VT Certificate, how many work persons undergone IME and type of medical coverage given to the work persons
9. The return shall be submitted quarterly (by 10th of April, July, October & January) for contracts of more than one year. However, for contracts of less than one year, returns shall be submitted monthly.
10. It will be entirely the responsibility of the Contractor/his Supervisor/representative to ensure strict adherence to all HSE measures and statutory rules during operation in OIL's installations and safety of workers engaged by him. The crew members will not refuse to follow any instruction given by company's Installation Manager / Safety Officer / Engineer / Official / Supervisor/Junior Engineer for safe operation.
11. Any compensation arising out of the job carried out by the Contractor whether related to pollution, Safety or Health will be paid by the contractor only.
12. Any compensation arising due to accident of the Contractor's personnel while carrying out the job, will be payable by the contractor.
13. The contractor shall have to report all incidents including near miss to Installation Manager / departmental representative of the concerned department of OIL.

14. The contractor has to keep a register of the persons employed by him/her. The contractor's supervisor shall take and maintain attendance of his men every day for the work, punctually.
15. If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc) the contractor will not have any objection to any such training.
16. The health check up of contractor's personnel is to be done by the contractor in authorized Health Centers as per OIL's requirement & proof of such test(s) is to be submitted to OIL. The frequency of periodic medical examinations should be every five years for the employees below 45 years of age and every three years for employees of 45 years of age and above.
17. To arrange daily tool box meeting and regular site safety meetings and maintain records.
18. Records of daily attendance, accident report etc. are to be maintained in Form B, E, J (as per Mines Rules 1955) by the contractor.
19. A contractor employee must, while at work, take reasonable care for the health and safety of people who are at the employee's place of work and who may be affected by the employee's act or omissions at work.
20. A contractor employee must, while at work, cooperate with his or her employer or other persons so far as is necessary to enable compliance with any requirement under the act or the regulations that is imposed in the interest of health, safety and welfare of the employee or any other person.
22. Contractor's arrangements for health and safety management shall be consistent with those for the mine owner.
23. In case Contractor is found non-compliant of HSE laws as required company will have the right for directing the contractor to take action to comply with the requirements, and for further non-compliance, the contractor will be penalized prevailing relevant Acts/Rules/Regulations.
24. When there is a significant risk to health ,environment or safety of a person or place arising because of a non-compliance of HSE measures company will have the right to direct the contractor to cease work until the non-compliance is corrected.
25. The contractor should prevent the frequent change of his contractual employees as far as practicable.
26. The contractor should frame a mutually agreed bridging document between OIL & the contractor with roles and responsibilities clearly defined.
27. For any HSE matters not specified in the contract document , the contractor will abide the relevant and prevailing Acts/rules/regulations/ pertaining to Health, Safety and Environment.

#### ANNEXURE FOR SPECIFICATIONS FOR ELECTRICAL WORKS

##### A. MATERIALS:

##### 1. CONDUITS, JUNCTION BOXES:

All conduits should be of medium grade MS/PVC, approved by ISI & as specified in the BOQ. All accessories like coupler, bends etc are to be ISI approved and of make as approved by engineer in- charge. Accessories like couplers, bends, outlet box for points, bush for MS conduit entry in box etc are part of conduits & no separate payment will be made for the accessories. PVC conduits shall be medium grade, approved by IS as per BOQ. MS Conduits upto 50mm size shall have wall thickness of 1.6 mm and conduits above 50mm size shall have wall thickness of 2.0mm. All MS conduits shall be ERW type and duly painted with red oxide primer and black paint. Couplers, bushes, draw boxes, bends, outlet boxes for fan light are part of wiring and shall not be paid extra. All

miscellaneous items for conduit work, not specifically mentioned in BOQ, are part of wiring and conduit laying and no separate payment shall be made for the same.

## 2. SWITCH BOXES:

MS, 1.6 mm thick sheet painted with redoxide and enamel paint or as described in BOQ.

## 3. WIRES FOR WIRING:

P.V.C. insulated, unsheathed, fire retardant, (FR) flexible copper conductor cables shall be used for all wiring from the distribution boards to the points and shall be laid in conduits. They shall be stranded copper conductors with thermoplastic insulation of 1100 volts grade. Colour code for wiring shall be followed. The wiring conductors shall be approved by IS-694 Part-II of 1964, TAC, FIA. All wires shall be without any joint in their run in conduit from DB to SB and points.

## 4. SWITCHES AND SOCKET OUTLETS:

All switches, sockets, regulators & switchboards shall be in white colour as per detail mentioned in the BOQ. The switches & fixtures shall be approved by engineer in-charge and as per BOQ.

## 5. LIGHTING FIXTURE (INTERNAL):

The lighting fixtures shall be of make and cat no. as specified and shown in the drawings and schedule of items or as approved by the Engineer-in-charge. The fluorescent fixture shall be complete with Conventional copper ballasts (as per BOQ), lamps, capacitors, lamp holders, and internal wiring. All such materials and equipments shall be suitably rated and tropic proof construction, mechanical strength with instant starting gear, high power factor, having circuit to avoid stroboscopic effect all confirming to Indian Standards.

## 6. EARTHING:

All earthing conductor shall be as per detail mentioned in BOQ & IS-3043.

## 7. JUNCTION BOX INDOOR TYPE:

Junction box shall be as per BOQ and Annexure

## 8. CABLE GLANDS:

All cable Glands for cable entry in any enclosure shall be Heavy duty, single compression cable glands of nickel plated brass suitable for PVC insulated, PVC sheathed, heavy duty 1100/650v grade, armoured, stranded cable. Size of Gland as per BOQ.

Make of Glands: GMI/ Dowells/ Baliga.

## 9. SPECIFICATION OF OUTDOOR JUNCTION BOX FOR GARDEN LIGHTS

Outdoor type MS box made from 2.0 mm thick GIsheet of size approx. 225mm (high)x150mm (width)x100mm (deep).

The top surface of the box shall be of canopy type and project 30 mm beyond front cover to prevent entry of rain water. Front cover shall be canopy type with folded sides and complete with neoprene rubber gasket. Sufficient nos. (minimum 4 nos.) of cover fixing screws with proper size flat and spring washer are required. Cover screws shall engage in threaded nuts suitably fixed to the box enclosure.

Enclosure protection- IP54

There shall be no sharp corners. All edges and corners shall be neatly finished for perfect finish. The box shall have adjustable clamp made from 25x3 mm GI strap with hardwares for fixing the box to 50mm GI light post

The following components shall be mounted inside the box.

Two no. 240v, 15 amp, rewirable type porcelain fuse base and carrier. Binani, havell's, Standard, Anchor, Allwyn



make.

One no. 4 way terminal strip suitable for terminating 6 sq mm size cable, 20 amp rated and suitable for termination of pin type cable lugs. Elmex, Connectwell, Anchor, Allwyn make.

One neutral bus for connection of cables. Termination with pin type cable lugs.

One internal earthing stud.

Terminal nos. 1 and 2 of terminal strip shall be looped to terminal nos. 4 and 5 of the terminal strip respectively on the output side with flexible PVC insulated, 1100v grade, single core copper cable of 2.5 sq mm size. This arrangement is required for loop in- loop out connection of supply cable. Output of terminal nos. 1 shall also be terminated to incoming side of both the fuse units with flexible, PVC insulated, 1100v grade single core copper cable of 2.5 sq mm size. Output of terminal 2 shall be wired to neutral bus with same type cable as used for looping between terminals.

The bottom of the terminal block shall have a clearance of 65mm from bottom plate of the box. One no. zinc passivated terminal stud of 4.0mm diameter, 50mm length complete with flat and spring washers shall be mounted on side of the box for terminating earth core of supply cables. The stud shall be available on inside the box for termination of earth cores of cables. This stud shall be directly fixed to the box enclosure. Four nos. of 25mm diameter holes with knockouts shall be provided at the bottom entry plate of the box. All wire connections inside the box shall have tinned copper crimping lugs for proper termination.

All the boxes shall be numbered for identification with enamel paint on outside and inside of the front cover, letter size 25mm high.

Sample of the box shall be supplied for approval.

Make of lugs: Dowells.

Make of Box: Any reputed make complying to above specs and approved by Engineer Incharge.

#### 10. SPECIFICATION OF POLE FOR GARDEN LIGHT: For Post top lights only.

Garden Light pole shall be made from 50mm ID, 3.5 mm thick wall medium grade GI pipe, having 3.0 mtr length (1.0 mtr below the ground and 2.0 mtr above the ground). MS base plate of 300x300x3mm shall be welded to the base of the pole. The pole shall be painted with two coats of brilliant green paint. Pole top shall have suitable reducer for fixing the post top light fitting. The pole shall have suitable sized hole at proper height for entry of power cable from junction box to light fitting. GI pipe shall be approved by ISI.

One 600mm (300mm below ground and 300mm above ground) length of 50mm ID, 3.5 mm thick wall GI pipe shall be attached with each lighting pole for guarding power cables entering the terminal box. Guard pipe shall be clamped to the post using GI clamp.

Make of GI Pipe: TATA, Jindal, Hindustan.

#### 11. DETAIL OF CABLE TRENCH IN SOIL:

The trench will be made in soil along the route decided in consultation with OIL. The trench will be 750mm deep, 400mm wide. The trench bottom will be filled with 75mm thick layer of clean sand and levelled to give flat bedding for cable. The cable shall be laid on this sand bed. After laying the cable in the trench the trench will be filled with another layer of clean sand of thickness 75mm. This sand layer will be leveled and complete trench length covered with A- Class bricks. The bricks will be placed closely without any gap. Brick length shall be perpendicular to the cable route. The trench will then filled with soil and the surface shall be dressed properly.

12. DETAIL OF ARMOURED CABLE: 3x2.5 sq mm PVC insulated, PVC sheathed, 1100v grade, stranded copper conductor, GI wire Armoured, heavy duty cable approved by IS-1554. Make: CCI, NICCO, Havells, Finolex, Asean Cables, NECAB.

#### B. INSTALLATION OF ELECTRICAL WORKS:

##### 1. CONDUIT LAYING:

The laying of conduits shall be done in accordance with drawings. The contractor shall prepare detailed layout drawing showing conduits, Junction boxes etc., and obtain Engineer-in-charge approval before carrying out work on site. All threaded parts of the conduits shall be coated with rust protective paint. At entry point in box for all MS

conduit coupler and bush shall be used for proper sealing and protection of cable. Conduits shall be fixed to the structure parts. Provisions as mentioned in NEC code, BIS shall be followed. Reference shall be made to latest publication General Specification for Electrical Works Part-1 (Internal) of CPWD for conduit laying job, not specifically mentioned in this Annexure.

## 2. WIRING ( CIRCUIT & POINT WIRING):

PVC insulated flexible copper conductor cables shall be used for all wiring from the distribution boards to the points and shall be pulled into conduits unless otherwise specified. No point wiring shall have looped neutral. No reduction of strands is permitted at terminations. No joint shall be allowed in the wiring.

SUITABLE SIZED ELECTRO TINNED COPPER CABLE LUGS ARE TO BE USED FOR TERMINATION AT SWITCHBOARDS, SOCKET OUTLETS, MCB DB, MAIN SWITCHES, FUSE DB, LOOPING OF NEUTRAL AND EARTH WIRES IN SWITCHBOARDS & JUNCTION BOXES. Lugs shall not be paid extra as their cost is included in the wiring job.

## 3. SWITCHES & SOCKETS OUTLETS:

Switches shall be connected on the live wire and controls of each circuit shall be continuous everywhere having no fuse or switch installed in the line excepting at the main panels and boards.

## 4. LIGHT FITTINGS :

Light fixture shall be fixed in a sturdy and safe manner as per best trade practice and according to the instructions of the manufacturers. Lights should be suspended from the ceiling , mounted on wall as per BOQ and as advised by engineer in charge. Down rods for lights shall be in single length, no joint shall be permitted.

## 5. FAN:

Ceiling fan should be mounted in safe manner with down rod supplied by the manufacturer or the extra long down rod as per BOQ. The length of individual down rod shall be as decided by engineer incharge. The outlet box for fans shall have 12 mm dia rod for hanging fan. All down rods shall be in single length and there shall not be any joint. The exhaust fan frame shall be mounted on wall with grouting bolts of MS. The fan shall be mounted on this frame after curing of grouting bolts.

## 6. WORKMANSHIP

All works shall be as per specification mentioned in General Specification for Electrical Works Part-1 (Internal) of CPWD

7. GUARANTEE: All electrical items, ACs must be guaranteed for a period of 12 months after commissioning. Party will arrange for repair/ replacement, as required by OIL, of defective parts within 7 days of reporting of the failure by OIL Guarantee cards for individual fans duly signed by dealer shall be submitted. Invoice for other items is required for sourcing of item from authorized stockist

8. TEST AND INSPECTION: To be witnessed by OIL's representative as required

## C: SPECIAL CONDITIONS

### 1. GENERAL

a) These special conditions of contract shall be read in conjunction with the general conditions of contract, schedule of items. Technical specification, Drawings and other documents relating to the works and shall have preference over laid down general conditions and specifications.

b) All electrical work shall be carried out in compliance with specifications given hereunder in this section and in compliance with Indian Standard Specifications, NEC and Indian Electricity Acts and Rules in force. The works shall also conform to any special requirement of local state electricity board and State Licensing Board. In any

case, the above-mentioned rules, regulations etc. are not in accord the decision of the Engineer-in-Charge regarding rules to be followed or manner of execution of work shall be final and binding.

c) All works shall be as per specification mentioned in General Specification for Electrical Works Part-1 (Internal) of CPWD

d) The work shall be executed by licensed electricians/ wiremans, under the direct supervision of electrical supervisor holding and certificate of competency issued by the State Government, Chief Electricity Inspectorate for the type of works involved, in conformity with the best methods of modern engineering practice and to the entire satisfaction of the Engineer-in-Charge. The electricians and supervisors engaged for the electrical works shall have valid electrical licence & experience in carrying out internal electrification work. Contractor shall submit the copy of licence of his electrician and supervisor to Head (Electrical) and produce the original for verification before starting the job. The contractor has to submit the test report at various stages of completion and after completion as per requirement of the Engineer in charge.

e) The contractor shall provide all equipment, instruments, labour and such other assistance required by the Engineer-in-Charge for measurement of the work, materials etc.

## 2. MATERIALS

a) All materials, equipment, fittings and fixtures used in electrical works shall conform to the detail mentioned in annexure & BOQ. All material shall be new, soundly and robust in construction and well finished. Surplus material after completion of work shall be taken back by the contractor and the cost shall be recovered if the advance payment has been made earlier by the client.

b) Two numbers of samples of all materials, fittings and fixtures to be supplied by the contractor shall be submitted to the Head (Electrical) for his approval. One sample shall be retained by the Chief engineer (Electrical) and the other shall be returned back to the contractor after due approval. The contractor shall not commence the work until the samples are approved in writing from the Chief Engineer (Electrical). The contractor shall ensure that all the materials incorporated in the work are identical in all respects with the approved sample. All samples shall be returned to the contractor after completion of contract.

c) All materials shall be procured from manufacturers or from authorised dealer and all relevant documents and test certificate and guarantee certificates to be provided by the contractor. All material shall be guaranteed for one year after completion of all works and commissioning. In case of failure of any item during guarantee period the same shall be replaced by the contractor within 15 days without any cost to OIL.

d) Any material proved to be of inferior quality or of counterfeit shall be replaced free of cost with the good quality/original material.

## 3. DRAWING:

a) The drawings, specifications and schedule of items shall be considered as a part of this contract. Any work or materials shown on the drawings but not included in the schedule of items or vice-versa, shall be executed as if specifically called for, in both without any additional cost. The contract drawings indicate the extent and general arrangement only.

b) Layout drawings for all equipment, schematic electrical drawing, wiring drawing, conduit layout drawing, and any other drawing required for execution of the job shall be submitted by the contractor 30 days before commencement of work for approval by Head (Electrical). The drawings shall be prepared in computer and shall have detail of single line, wiring scheme, loading, DB detail (Table wise)The contractor's electrical persons shall contact engineer in charge for discussion on drawings. Job shall start only after approval of drawings by Head (Electrical) in writing.

## 4. CLARIFICATION OF DISCREPANCIES:

In case of any discrepancy between specifications etc. furnished by the Engineer-in-charge (Electrical) or disputes in respect therefore the interpretation of the Engineer-in-charge (Electrical) shall be final and binding. DURING INSPECTION OF THE WORK IN PROGRESS OR COMPLETED WORK IF ANY DISCREPANCY IS NOTICED BY THE ENGINEER IN CHARGE OR HIS REPRESENTATIVE, THE SAME SHALL BE INTIMATED TO THE CONTRACTOR THROUGH LETTER OR THROUGH NOTE IN THE SITE BOOK, KEPT AT SITE. HOWEVER, IN SUCH CASE OIL SHALL RECOVER THE COST INCURRED BY OIL FOR INSPECTION OF THE JOB, LIKE

WAGES AND TRANSPORTATION CHARGES FOR THE INSPECTOR ETC, FROM THE RUNNING BILL OF THE CONTRACTOR. SO THE CONTRACTOR IS REQUIRED TO ENSURE THE PROPER QUALITY OF WORK AS PER CONTRACT.

#### 5. TEST AND DOCUMENTS:

a. A site order book will be maintained at site which will be in the custody of the Engineer-in-charge (Electrical) or his representative and all instructions given to the Contractor will be recorded in the site order book and the same has to be signed by the contractor to comply with the instruction given therein.

b. After completion of the work the installation shall be tested by the contractor in the presence of the Engineer-in-charge (Electrical). The tests shall comply the I.E. Rules regulation. Test certificate shall be submitted in proper format while handing over the installation after completion of electrification along with six copies of as built drawings and inventory list and guarantee certificates of electrical items. THE JOB SHALL BE TREATED AS COMPLETE ONLY AFTER COMPLETION OF ALL WORKS AS PER BOQ AND ANNEXURE, SUBMISSION OF TEST REPORT AS PER IE RULES AND ANNEXURE AND SIX SETS OF AS BUILT DRAWINGS FOR CONDUITS, LAYOUT, SCHEMATIC WIRING, DB DETAIL, WITH INVENTORY LIST, GUARANTEE CERTIFICATE FOR FANS, INVOICE FOR OTHER ITEMS ETC. COMPLETION CERTIFICATE SHALL BE ISSUED BY HEAD (ELECTRICAL) AFTER ALL JOBS ARE COMPLETED AND DOCUMENTS SUBMITTED AS MENTIONED ABOVE.

i) The result of the insulation test shall comply with the I.E.E. Regulations 1101 to 1108A and 1108B as may be applicable.

ii) Polarity test shall be carried out to ascertain that all the switches have been connected to the phase conductor(s).

In a 2 wire installation a test shall be made to verify that all switches in every circuit have been fitted in the same conductor throughout and such conductor shall be labeled or marked for connection to the phase conductor or to the non-earthed conductor of the supply.

In a 3 wire or 4 wire installation a test shall be made to verify that every non-linked single pole switch is fitted in a conductor which is labeled or marked for connection to one or the phase conductor of supply.

iii) The continuity test of the earthing system shall comply with the I.E.E. Regulations 1108 to 1109 to the latest addition.

If the results of the above tests does not comply with the I.E.E. Regulation the contractor shall be bound to rectify the faults so that the required results are obtained.

The contractor shall be responsible to provide all the necessary testing equipment etc.for carrying out the above tests.

c. The work will not be considered as complete and taken over by OIL INDIA LTD till all the components of the work after being completed at site in all respects have been inspected/tested by the Engineer-in-charge (Electrical) to his entire satisfaction and a completion certificate issued by the Engineer-in-charge (Electrical) to this effect.

#### 6. WORK AND WORKMANSHIP:

a. The work shall be of the highest standard, both as regard its design and workmanship. Modern tools and first class, latest techniques shall be employed for its execution. The workmanship shall be guaranteed for one year after commissioning and any defective workmanship during guarantee period must be corrected by the contractor within 7 days after reporting without any cost to OIL.

b. Any damage done to the building during the execution of work shall be the responsibility of the contractor and it shall be made good by him, at his cost, to the entire satisfaction of the Engineer-in-charge (Electrical).

c. All electrical work shall be executed by skilled and duly licensed electrician under the direct supervision of whole time electrical supervisor as defined in IE rules. Contractor shall submit the copy of licence of his electrician and supervisor to Head (Electrical) and produce the original for verification before starting the job. The contractor shall submit list and produce requisite evidence regarding the qualifications of his supervisor and other workers before the start of the work.

d. The electrical contractor shall possess all the relevant and valid licenses as per the regulations of the Indian Electricity Rules and the Local Electrical Inspector's requirements.

e. The work shall have to be coordinated with the building work and other allied jobs/trades to the entire

satisfaction of Engineer-in-charge.

f. Chief Engineer (Electrical) shall have full powers to get the materials or workmanship etc. inspected and tested by an independent agency, the Contractor's expenses in order to ascertain their soundness and adequacy.

**D. SAFETY GUIDELINES TO BE FOLLOWED WHILE EXECUTION OF ELECTRICAL JOB BY CONTRACTOR:**

1. Contractor shall follow all the safety regulations and environmental preservation points mentioned hereunder:

(i) The contractor shall engage for the wiring and supervision job only highly skilled, competent personnel having experience of at least two years in carrying out electrical wiring job and valid supervisor, wireman license issued by Licensing Board, Assam. All jobs done by the contractor's employees must confirm to all the provisions of Indian Electricity Rules, BIS, NEC and OMR.

(ii) The contractor shall ensure complete safety of the personnel engaged by him, and of all the equipment they handle and must take full responsibility for their safety. Company shall not be responsible for any work accident of contractor employees.

(iii) The contractor shall provide the necessary safety gears and personal protective equipment to his personnel engaged for the wiring job. The personal protective equipment (PPE)/ safety gear should include at least the following:

a) Safety shoes

b) Helmet

c) Safety belts.

d) Ladder with antiskid rubber shoes.

e) Switch Board with earth leakage circuit breaker for operation of drill machine.

f) Any other safety gear that may be required depending on the job nature.

(iv) It will be the responsibility of contractor and his employees to use PPE and safety gears. In case the contractor employees are found to work without PPE and proper safety gears then caution letter will be issued to contractor. In case such violation is noticed on three occasions then the contractor will have to remove the concerned employee from the service. In case contractor fails to comply with this requirement than company may terminate the contract. In case the PPE and safety gears as mentioned above are not provided by the contractor to his employees then Company may terminate the contract.

(v) Before starting electrical job, the contractor employees shall isolate the power, ensure with test lamp for no power and then discharge the circuit to earth. A danger board has to be fixed on the main switch/ DB if required.

(vi) All the packing material, cut ends of cables, casing capping, battens, damaged nails and screw, glass pieces of lamps and other waste materials shall be collected by the contractor employees from the work site and disposed in the dustbins.

2. Engineer in-charge or safety office of OIL shall visit the site every fortnight during execution of the job and compliance of safety points by the contractor shall be recorded in the following tabular form. Copy of this report shall be given to contractor and contractor shall ensure that all the requirements as per the report are complied with within 7 days of the inspection and a compliance certificate is issued by the contractor to this effect.

SL NO	DESCRIPTION	PRESENT CONDITION	SUGGESTION / REMARKS
1	PERSONS HOLDING VALID ELECT. LICENSES.		
2	PROMINENT DISPLAY OF VOLTAGE RATINGS WITH "DANGER" SIGNS.		
3	SEPARATE & DISTINCT CONNECTIONS TO EARTH GRID FOR ALL ELECT. EQUIP. OPERATING ABOVE 250 V		
4	GROUNDING OF SWITCH BOARD/EQUIP. INCLUDING PORTABLE ONES.		
5	PROTECTION OF ELECT. SWITCH BOARDS, PORTABLE TOOLS, EQUIP., ETC., FROM GETTING WET DURING USAGE.		
6	PROTECTION FROM RAIN-SWITCH BOARDS/KIOSKS AT WORK SITE AND ITS LEVEL TO AVOID CONTACT WITH WATER DURING WATER LOGGING.		
7	USE OF INDUSTRIAL TYPE EXTEN. BOARD/PLUG SOCKETS.		
8	USE OF ELCB FOR ALL TEMP. CONNECTIONS & USAGE OF 3-PIN PLUG TOPS.		
9	NEATLY/PROPER LAYING OF POWER SUPPLY CABLE TO AVOID HINDERANCE FOR WORKING PERSONS.		

- 10 TERMINATION OF POWER CABLES USING PROPER SIZE GLANDS/LUGS & CRIMPPING OF THE SAME ADEQUATELY.
- 11 NO CONNECTION OF EARTHING WIRE TO PIPELINES/STRUCTURES.
- 12 UNSAFE TEMP. CONNECTIONS, NAKED JOINTS/WIRING, ETC.
- 13 CONDITION OF TEMP. CABLES- CUTS, DAMAGED INSULATION,KINKS OR IMPROPER INSULATED JOINTS.
- 14 PROTECTION OF ELECT. WIRES/ EQUIP. FROM WATER/NAKED FLAMES.
- 15 ILLUMINATION AT WORK AREAS
- 16 SWITCH BOARDS OF MS STRUCTURE & MARKING OF INCOMING SOURCE.
- 17 FIRE EXTINGUISHERS-DCP/CO2/SAND BUCKET NEAR SWITCH BOARDS.
- 18 PROVISION OF INSULATED MATS IN FRONT/BACK NEAR TEMP. SWITCH BOARDS.
- 19 DISPLAY OF NOTICE IN CASE OF ELECT. ACCIDENT.
- 20 INSTALLATION OF RESIDUAL CURRENT OPERATED CIRCUIT BREAKER(RCCB) OR EARTH LEAKAGE CIRCUIT BREAKER(ELCB) AS PER INDIAN ELECT. RULES.
- 21 PERIODIC TESTING RECORD OF THE EFFICIENCY OF EARTH LEAKAGE PROTECTING DEVICES.
- 22 GENERAL - EARTHING OF APPARATUS,PROTECTION FROM DAMAGE, CONDITION OF CONNECTIONS, ETC.
- 23 FIRST AID KIT AVAILABILITY / TRAINED PERSONNEL

SIGNATURES:

\_\_\_\_\_

NAME:

\_\_\_\_\_

Engineer In-charge

Contractor

Safety Inspector

E. SCHEDULE OF APPROVED MAKES OF ELECTRICAL MATERIALS:

- 1. Light fittings and Lamps - Philips/GE/ Crompton.
- 2. Fans - Bajaj/Khaitan /Orient/ Usha/ Havells.
- 3. Switch/Switch Socket - As per BOQ.
- 4. Copper Flexible wires - Finolex/ Havells/L&T.
- 5. Conduits/ J Boxes- Plaza/AKG/ECW/TATA/SENCO/Finolex/Any BIS approved make with the permission of engineer in charge.
- 6. Casing Capping - Presto Plast
- 7. Make for Other Items as mentioned in specs or as per BOQ

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OTHER TERMS & CONDITIONS:

Item SI No line service No.1550,1560 & 1570 will be executed if required.For line service no. 1550 & 1560 shall be paid based on actual bill of ASEB, excluding the service charges of bidder and for service charges bidder has to quote in service no 1570 for their charges for both the items.

A. MEASUREMENT AND PAYMENT : Payments for all works done shall be made on the basis of actual work done as per the schedule of rates. For all extra work done on the advise of the Company's Engineer and which is not included in the schedule of rates, deviation order for the same shall be made on the rates as decided by the

Company's Engineer.

B. SAFETY MAESURE : Safety measure as per OIL regulations shall be strictly adhered to by the contractor. Safety belts and other measure shall have to be taken by the contractor at his own cost. If any loss or damage caused to life during the execution of work, the contractor shall be held responsible and shall bear all the expenditure required by way of compensation and any medical treatment. Necessary insurance of the persons engaged by the contractor have to be made at his cost.

C. STORAGE : Materials shall be transported, handled and stored at site carefully to the approval of Engineer so as to prevent any damage of any kind and to be kept at his own risk and cost. Cement shall be stored in a water proof shed, the floor of which shall be raised 300mm clear from the ground and 450mm away from the wall all round in order to protect from rain and moisture.

D. WATER : Water shall be clear, clean, and reasonably free from all harmful properties, which must be approved by the Engineer. Arrangement of water for construction purpose/ drinking shall be made by the contractor at his own cost. Water from the excavation shall not be allowed to be used in construction work and curing.

F. SPECIAL NOTE :

- a. Total quantity of cement will be issued based on the consumption requirement of specific jobs based on the consumption rate of APWD Schedule of items and specification.
- b. Positioning of slab, sink, basin, W.C. etc. may be re-oriented as per site requirement and as per direction of Engineer-in-charge.
- c. Drawing may be modified as per site requirement or as per direction of Engineer-in-charge.
- d. Aluminium framed doors, windows, partitions etc. will be provided as per the drawing and direction of Engineer-in-charge.

A. The Company's Internal Estimated Rates, as indicated in Part-II, are exclusive of P.F.

OIL INDIA LIMITED  
(A Govt. of India Enterprise)  
Contracts, Duliajan

**WORKS CONTRACT**

Schedule of company's Plants, Materials and Equipments

Tender No.: DCC8462P11

a) SCHEDULE OF MATERIALS AVAILABLE AT THE COMPANY'S STORES/STOCK PILES for permanent incorporation in works and

b) SCHEDULE OF COMPANY'S PLANTS AND EQUIPMENTS for use in the execution of work

i) Materials:- Cement

Remarks: Cement will be issued free of cost from Company's Stores at Duliajan.

NB: Empty cement bags must be returned to Materials Godown Duliajan failing which a sum of Rs. 8/- (Rupees Eight only) per bag will be recovered from the Contractor's bill.

ii) Plants and Equipments: - Nil

Remarks: Nil

NOTE:-

1. The Contractor is to arrange transport of the above company materials to site of work (up to 8 km.) and for safety thereof for which no extra payment will be made.
2. If the materials listed above are not available suitable substitute will be provided by the Company and Contractor shall incorporate the same in the works without extra cost.
3. Containers must be returned to Company in good condition.
4. Plants and equipments issued to Contractor must be under proper watch so that no part is pilfered. These must be handled only by Company's operators. Contractor shall be responsible for any loss or damage to these plants and equipment while these are under his/their custody.
5. Cement issued to Contractor by the Company is meant only for the specific Company work relating to the Contract. However, if any quantity of Cement is left over from the quantities issued for any reason whatsoever, on the completion / cancellation / termination of the Contract the same shall have to be returned to the Company in full within one week of completion/cancellation of the work failing which the matter will be referred to appropriate Govt. authorities for legal action as well as realization of the Cement.
6. All other materials issue to the Contractor by the Company if subsequently found to be in excess of the actual requirement will have to be returned by the Contractor within two weeks of completion of the work failing which the cost of all such materials will be recovered from the Contractor at double the value of materials without any reference to him.



To  
 RESIDENT CHIEF EXECUTIVE  
 Oil India Limited  
 DULIAJAN

SUB:SAFETY MEASURES  
Tender No : DCC8462P11

Description of work/service :

Construction of a Two Storied Executive Trainee Hostel near Hostel No-4 including plumbing & sanitation works, apron, surface drain, landscaping, approach road, boundary wall and gate including Internal & External Electrification and Telephone connection as necessary as per working drawings, specifications and item of works including supply of all materials except cement.

Sir,

We hereby confirm that we have fully understood the safety measures to be adopted during execution of the above contract and that the same have been explained to us by the concerned authorities. We also give the following assurances.

a) Only experienced and competent persons shall be engaged by us for carrying out work under the said contract.

b) The names of the authorised persons who would be supervising the jobs on day to day basis from our end are the following

- i) \_\_\_\_\_
- ii) \_\_\_\_\_
- iii) \_\_\_\_\_

The above personnel are fully familiar with the nature of jobs assigned and safety precautions required.

c) Due notice would be given for any change of personnel under item(b) above.

d) We hereby accept the responsibility for the safety of all the personnel engaged by us and for the safety of the Company's personnel and property involved during the course of our working under this contract. We would ensure that all the provisions under the Oil Mines Regulations,1984 and other safety rules related to execution of our work would be strictly followed by our personnel. Any violation pointed out by the Company's Engineers would be rectified forthwith or the work suspended till such time the rectification is completed by us and all expenditure towards this would be on our account.

e) We confirm that all persons engaged by us would be provided with the necessary Safety Gears at our cost.

f) All losses caused due to inadequate safety measures or lack of supervision on our part would be fully compensated by us and the Company will not be responsible for any lapses on our part in this regard.

(Seal)

Yours Faithfully

Date\_\_\_\_\_

M/s\_\_\_\_\_

CONTRACTOR

FOR & ON BEHALF OF