BHAGYANAGAR GAS LIMITED

(A JOINT VENTURE OF HPCL & GAIL)

BID DOCUMENT FOR

CIVIL & MISCELLANEOUS WORKS FOR CNG DBS STATION (COCO) AT SAROORNAGAR, HYDERABAD

UNDER LIMITED DOMESTIC COMPETITIVE BIDDING

Bid Document No.: BGL/235/2013-14

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SPECIAL CONDITIONS OF CONTRACT

LOCATION/ SITE INFORMATION:

a) It is understood that before quoting the rates, the contractor will visit the work site which is situated at CNG station at Saroornagar in Hyderabad and will make him/ herself acquainted fully and understand the nature and quantum of the job to be carried out. Ignorance of this will not be considered after award of work. The contractor will be responsible to complete the entire job in all respects.

1. Civil & Miscellaneous jobs for modification works at CNG station at Saroornagar in Hyderabad are to be done on urgent basis and the work shall be done continuously.
2. The bidder must mobilize adequate manpower for this site.
3. The quantities given above against individual items/ SORs are indicative and shall not be considered to be binding. The quantities may increase or decrease at site at the time of actual execution and as per the discretion of Owner/ Engineer-in-charge. The unit rate shall be operated to work out the final payment due to Contractor.
4. BGL reserves the right to operate any SOR for the full quantities or part quantities or nil quantities as per the site conditions. In this case; BGL's decision will be final and binding.
5. **Safety rules and regulation:**

   Contractor shall adopt the safety rules and regulation as per the prevailing practices. The contractor shall be executing the civil & miscellaneous jobs in the running/ already operational station, the contractor has to take utmost safety in execution of the jobs. He has to appoint one dedicated supervisor for the site at CNG station at Saroornagar, and the works should be executed during day time from 09:00 AM to 06:00 PM by taking proper cold/ hot work permit systems. If the works are to be executed beyond 06:00PM, the contactor has to take prior approval from site-in-charge/ EIC & work station-in-charge. If any hot work like chipping, welding, cutting etc. have to be carried out, which can create sparks, fire etc., have to be done only in presence of BGL official by taking proper approval from site-in-charge/ EIC & work station-in-charge by deploying proper fire & safety equipments like extinguishers/ fire hydrants etc. The sites, where works will be going on; should be barricaded by putting necessary steel/ tin cover or as suitable and directed by EIC for at least 1 meter height so that these should not affect/ hamper the operation/ running of the existing equipments. All the workers shall be provided with proper safety equipments like shoes, helmets, etc. Sign boards like work under progress, danger, etc shall be displayed at the work site. Contractor shall ensure quality supervision in the working areas. No hot works are allowed in the CNG area without proper clearance from BGL.

6. **Transportation of all material:**

   Shall be arranged by the contractor on his own and no separate payment shall be paid. it should be included in the offered rate.

7. **All manpower, machineries Tools and tackles:**
   Equipment's, tools/tackles, machinery, roller, leveler, labour , manpower etc for the work shall be in the scope of contractor.

8. **Validity of contract period**:

   5 months from the date of award of work.

9. **COMPLETION TIME**:
   Total duration for completing SOR jobs is 2 months from the date of release order and handing over of site as communicated by BGL to be intimated through letter or email by BGL EIC.

10. **MOBILIZATION PERIOD**:
    02 days from date of intimation by BGL –EIC excluding completion time.

11. **MOBILIZATION ADVANCE**: Nil

12. **DEFECT LIABILITY PERIOD** :
    One year from the date of completion of entire work for each site.

13. **Price reduction Schedule (LD):**
    The price reduction schedule to be made applicable against individual release order of each site with specific completion period of each site. In case the CONTRACTOR fails to complete the WORK within the stipulated period, then, unless such failure is due to Force Majeure as defined in article 3.12 of GCC; or due to EMPLOYER's defaults, the Total Contract price for each release order shall be reduced by ½ % per complete week of delay or part thereof subject to a maximum of 5 % of individual release order, by way of reduction in price for delay and not as penalty. The said amount will be recovered from amount due to the Contractor/ Contractor's Contract Performance Security payable on demand.
    The decision of the ENGINEER-IN-CHARGE in regard to applicability of Price Reduction Schedule shall be final and binding on the CONTRACTOR.

14. **Security Deposit:**
    10% of executed works of RA bills for civil & miscellaneous works for which the contractor has to submit BG or which may be deducted from the submitted RA bills.

15. **Water and power water charges:**
    Water and power shall be arranged by the contractor on his own. No separate payment shall be paid for arranging the water and power.

16. **Payments:**
Monthly RA bills shall be made after completion of respective works of SOR after acceptance /approval of Engineer-In Charge.

17. **Terms of Payments:**
Payment shall be made to the contractor for the actual quantities of work executed as per the schedule of rates issued along with the work order, against cenvatable invoice supported by work measurement sheets duly signed by EIC & contractor, inspection reports, material test certificate, drawings, as built drawings duly certified by EIC/ or his representative. The payment shall be released through cheque.

18. **Abnormally high rated items (AHR)** :
In then schedule of Rates (SOR) ,where the tenderer's quoted rate(s) for the items exceeds 50 % of the Owener's estimated rate such rate shall be considered as abnormally high rates (AHR) and payments of the AHR items, beyond the SOR quantity, shall be made at the least of the following rates.

19.1 Rates as per schedule of rates

19.2 **Rate of the item, which shall be derived as follows:**

A) Based on rates of the machine and labour as available from the contract (Which includes contractor supervision, profit, overheads and other expenses)

B) In case rates are not available in the contract ,rates will be calculated based on the prevailing market rates of machine ,material and labour plus 15 % to cover contractor's supervision profit, overhead and other expenses.

20. Extra items /Substituted items:
If any work to be executed relating to the contracted work and rate for the Same is not available in the schedule of the rate then the following methodology shall be adopted .

A) If **the item of work is similar to the item for which he has quoted rates in the Schedule Of rates, the rate will be derived from similar items of work in the SOR.**

B) If any item of work does not appear in the SOR quoted by the contractor in that case the rates of such items shall be derived from cost of material and labour plus 15 % to cover contractor's supervision profit, overhead and other expenses. The rate shall be derived from market rate analysis.

21. SERVICE TAX:
The Quoted price/rates should be inclusive of all taxes and duties EXCEPT SERVICE TAX. It may be noted that the responsibility of payment of Service tax lies with the Service Provider only. Incase of Service tax is applicable for

the tendered work, the contractor shall claim the service tax indicating rate of abatement/deduction allowed as per " Service Tax Act " in the 1st Invoice itself. Contractor providing taxable service shall issue an Invoice/Bill serially numbered and shall contain the following:-

a) Name and address and Service tax Registration No of service provider
b) Name and address of the taxable service receiver,
c) Description, Classification and value of taxable service provided,
d) Service tax amount

The above details are required to enable BGL to avail Cenvat credit for the service tax payment.

Payments to Service provider for claiming service tax amount will be made provided above formalities are fulfilled only. Incase of any statutory variation in Service tax during the currency of the contract, the contractor shall submit a copy of Government notification to evidence the rate as applicable on the date of submission of bid and on the date of revision. Claim for payment of service tax/statutory variation in service tax, should be raised within two(2) months from the date of issue of Government Notification for payment of differential service tax, otherwise claim in respect of above shall not be entertained for payment of arrears.

22 . Taxes, duties, octroi, levies etc.:

The quoted rates/prices shall be deemed to be including of all taxes including sales tax work contract tax ,octroi, levies ,over head charges etc till completion of the contract and contractor shall not be eligible for any compensation on this account. **Contractors are advised to quote the service tax rate, applicable at the time of submission of offer , clearly in their commercial bid/s. While arriving the lowest bidder (among the bidders who have quoted for the work), L1 , service tax shall be taken in to account while calculating the bid value.**

23 .The Engineer In charge shall have the power to :

A) issue the further necessary instruction to the contractor from time to time during the progress of the work for the purpose proper and adequate execution of it and the contractor shall carry out and be bounded by the same

B) Order the contractor to remove or replace any workmen whom the company considers incompetent or unsuitable on the opinion of the company's representative as to the competence of any workman engaged by the contractor. The decision of EIC shall be final and binding on the contractor.

24 PHOTOGRAPHS/LABOUR PERMISSION/VEHICLE PERMISSION:

The contractor shall arrange to make photo gate passes/labour permissions/vehicle passes etc. for his persons/labours/vehicles for working in site plant premises at his own cost as rules of the company.

25 RESPONSIBILITIES OF THE CONTRACTOR AND COMPLIANCE WITH LABOUR/INDUSTRIAL LAWS:

A) The contractor shall discharge obligation as provided under various applicable statutory enactments including the Employees Provident Fund and miscellaneous Provisions Act 1952, the employees state insurance (ESI) act 1948, the contract labour (regulation and abolition)act 1970, the inter state Migrant workmen (regulation of employment and conditions of service)act 1979,the minimum Wages Act, 1948 the payment of wages act 1936 ,Workman Compensation Act 1923, payment of bonus act, and various other labor legislations as in existence (at present in India) and as amended from time to time

B) The contractor shall be responsible for required contributions towards PF . ESI, Pension or any other statutory payments to be made in respect of the contract and the personnel employed for rendering the services to BGL and shall deposit these amounts on or before the prescribed dates. Every contractor shall submit the proof of depositing the employee's and employers contributions. The contractor shall be responsible to pay any administrative /inspection charges thereof, where applicable ,in respect of the personnel employed by him for the work of BGL

C) The contractor shall regularly submit all relevant records/documents to BGL representative for verification.

D) The contractor shall be solely responsible for the payment of wages and other dues to the personnel, if any, deployed by him latest by 7th day of the subsequent month.

E) The contractor shall indemnify BGL against all claims, demands, actions, cost and charges etc brought by any court, Competent Authority / Statutory Authorities against any act or acts of the contractor or his worker.

F) The contractor shall ensure regular and effective supervision and control of the personnel, if any, deployed by him and gives suitable direction for undertaking the contractual obligations.

G) The contractor shall not employ or permit to be employed any person suffering from any contagious, loathsome or infectious disease. The contractor shall deploy the workers after verification of their character

and antecedents. In case any worker is found having criminal record, he shall have to be immediately replaced without assigning any reason under intimation to Engineer-In Charge.

H) The personal to be deployed to carry –out the job should be on rolls of the contractor/contracting firm.

26. All the tender papers must be stamped and signed

SECTION – 8

TECHNICAL SPECIFICATION CIVIL WORKS

CIVIL & STRUCTURAL WORKS

00.01 **Material Specifications**

00.02 Brick

Bricks for masonry work shall confirm to IS:1077 specification for common burnt clay building bricks and shall be of 1st class. Specific requirements like dimensions, tolerances and other common requirements shall confirm to IS:1077. Bricks shall have smooth, rectangular faces with sharp corners and shall be well burnt, sound, hard, tough and uniform in color. These shall be free from cracks, chips, flaws and Florence. All tests shall confirm as per the requirements of IS 5454 and IS 3495. Water absorption shall not be more than 20% by its dry weight when soaked in cold water for 24 hours.

00.03 Cement

Cement to be used for Civil & Structural work shall be of 43 grade/53 grade ordinary Portland cement confirming to IS:8112/IS:12269 respectively.

00.04 Steel

All Steel bars, sections, plates and other miscellaneous steel materials shall be free from rust, oil, mud, paint or other coatings. Reinforcement bars to be used for Civil & Structural work shall be of High Strength Deformed Steel Bars of grade Fe 415 confirming to IS: 1786.

00.05 Aggregates

Coarse & fine aggregates for Civil & Structural work shall confirm in all respects to IS: 383 latest.

00.06 Water

Water used for Civil & Structural work shall be cleaned and free from injurious amount of oil, acids, alkalis, organic, matters or other harmful substances which may be deleterious to concrete, masonry or steel. The PH value of water shall not be less than 6. Potable water shall be considered satisfactory.

Tests on water samples shall be carried out in accordance with IS:3025 and they shall fulfil all the guidelines and requirements given in IS:456 2000.

01.00 Earthwork & Backfilling

01.01 Excavation & back filling for foundation, pits, walls e tc.

Excavation shall be carried out to true line and levels in all types of soil and shall be carried out for all lifts as required by the work.

The Contractor shall provide suitable drainage arrangement to keep the pits dry. He shall also carry out all de-watering required within the quoted rate.

If excavation is made in excess of the depth required, the contractor shall at his own expenses fill up to the required level with lean concrete of mix 1:5:10 (1 cement : 5 coarse sand : 10 aggregate) or as decided by site-in-charge.

The Contractor shall make necessary arrangements for lighting, fencing and other suitable measures for protection against risk of accidents due to open excavation at his own expense.

All shoring and strutting required holding the sides of excavation from collapse are included in the quoted rates.

No excavated material shall be deposited within 1.5M of edge of excavation.

The Contractor shall not undertake any concreting in foundation until the excavation pit is approved by the site-in-charge.

The Contractor shall not backfill around any work until it has been approved by the site-in-charge.

Back filling shall be carried out of selected earth coming out of excavation.

Back filling shall be carried out in layers of 15 cms and compacted to achieve 90% maximum dry density of the soil being used.

Any surplus earth generated shall be transported to areas designated by the Engineer-in-charge.

02.00 Plain and Reinforced Cement Concrete

The cement is in the contractor's scope of supply. Engineer-in-Charge may require tests to be carried out by the contractor as a part of his quoted rates to ensure conformity with the relevant standards.

Engineer-in-charge may reject such cement supplied in the event of either unsatisfactory tests or in the event of deterioration due to age, bad storage etc. Decision of Engineer-in-charge shall be final in this regard.

Water used for concreting work shall be suitable for drinking and shall conform to IS 456 2000. It shall be free from injurious substances.

Source of Coarse and find aggregates shall be approved by Engineer-in-Charge.

Contractor shall store each type and grade of aggregate separately. He shall maintain at site of work adequate quantities to ensure conformity of work. Wet aggregate delivered to site shall be stored for 24 hrs to facilitate drawing before being used.

Admixtures shall be used only with the specific permission of Engineer-in-charge and where used shall be conforming to the instruction of the manufacturer.

Note: for designing concrete mix; provisions of IS 456:2000 are to be followed. The contractor has to ensure that provisions of IS 456:2000 to be read with amendment No. 3 should be followed scrupulously for cement concrete and reinforced cement concrete.

I. The type of Environment/ exposure shall be mentioned and vis-a-vis accordingly the minimum cement content and the Water cement ratio. (From Table V).
   a. The Lesser the water cement ratio, the more the durability of concrete.
   b. Concrete cubes shall be taken as per the minimum sampling, a set of three cubes is one sample, and all the three cubes shall be taken from the same mix to avoid variation within the sample.

II. While checking the mix design and RMC the following shall be ensured.
   a. Grade of concrete.
   b. Minimum cement content.
   c. Degree of exposure.
   d. Workability.
   e. Standard deviation. (Used for calculating the Target strength).
   f. The concrete cube test results.

III. The minimum frequency of sampling of concrete for each grade shall be in accordance with the following:

Quantity of concrete in the work in m^3	Number of samples
1-5	1
6-15	2
16-30	3
31-50	4
51 & above	4 plus one additional sample for each additional 50 m^3 or part thereof
Note: At least one sample shall be taken from each shift.	

IV. Acceptance criteria for RCC/PCC and for making the payment.

a. Minimum number of samples of cubes, must be taken, any shortfall shall lead to other Non destructive tests. U contractor do not have enough moulds, and pl. Make it a mandatory to the contractor
b. 28 days compressive strength of RCC Cube test results shall be equal to or more than the grade of concrete.
c. The contractor shall maintain cube test results in a register; all cubes shall be properly marked, with serial numbers, date of casting and grade, structure detail.
d. The Contractor shall update the standard deviation of the results obtained on a weekly basis.
e. The standard deviation shall be equal to or more than the one considered in the design, if values are consistently below then the mix design shall be revised.
f. Additional cubes taken shall be tested on 7^{th} day, this will give a fair idea of the quality of the concrete, and initially must be taken.

02.01 Grades & Proportioning

The grades indicated in drawings and schedules shall conform to IS : 456 2000, the strengths being indicated below:

SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH

02.02 Grade strength of 15 cm cube in N/MM²

	28 days	7 days,
M – 20	20	13.5
M – 25	25	16.5

Modulus of Rupture by Beam Test at Minimum

	72 + 2 hours	7 days
M – 20	1 .7	2.4
M – 25	2.1	2.8

The water cement ratio, coarse aggregates and grading for each mix shall be predetermined from the results of cube tests of trial mixes. The mix proportions determined thus shall be followed at site and shall in no way relieve the contractor of his responsibility as regards the prescribed strength mix. The mix proportions, however, shall be revised if the results of the cube tests during the construction show consistently lower than the prescribed one. No claim to alter the rates of concrete work will be entertained due to such changes in mix designs, as the contractor will be responsible to produce the concrete of required grade. The aggregates shall be measured by volume based on the bulk density of the aggregates as per the results obtained form the laboratory.

All concrete shall be controlled concrete confirming to IS:456 2000. For mud-mat and filling purpose, ordinary concrete of 1:4:8 for proportion or as specified may be used as indicated in drawings.

02.03 **Mixing**

Mixing should be carried out in mechanical mixers. Hand mixing can however be permitted by Engineer-in-charge in specific cases subject to additional 10% extra cement without extra cost. Water cement ratio shall be rigidly controlled during mixing. Mixers shall be fitted with automatic devices to discharge measured quantity of water directly to the mixing pan. The water shall not be admitted to the drum until all the cement and aggregate constituting the batch are thoroughly mixed. Mixing shall continue for not less than 2 minutes after all the materials and water are put in the drum and until the concrete is uniform in colour.

02.04 **Placing**

The place where concrete is to be poured should be clean and free from all lose dirt, wooden pieces, dust, standing water etc. The form-work must be tight and rigid, with all holes and crevices stopped effectively, to prevent cement slurry from running out.

Walking on reinforcement layers is not permissible , Walkways of wooden planks or similar material can be placed with removable supports and should be independent of the reinforcement. The reinforcement position should not be disturbed nor should it sag during carriage and placement of concrete. For this cover blocks of specified thickness and chairs made of reinforcement steel shall be used.

Placing and vibration should not take totally more than 20 minutes from time of mixing. Method of placing should be got approved by Engineer-in-charge. Segregation during carriage and placement should be avoided if during carriage concrete segregates, it should be remixed before placement.

Concrete should not be dropped from a height of over 1.5M. If the height is more than 1.5 m, suitable chutes shall be provided for placing the concrete at specified locations.

To ensure bond and water tightness between old concrete surface and fresh concrete to be placed, the surface should be cleaned and roughened by "initial green out" by wire brushing or chipping. The initial green cutting may be done by wire brush after 6 hours of placing concrete in order to facilitate the work. Chipping can be done only after 48 hours. A layer of cement slurry with 1:1 mix (1 cement : 1 sand) should be poured to obtain a uniform coating on old concrete. Immediately thereafter, the fresh concrete should be poured.

Concrete shall be placed in a single operation to the full thickness of slabs, beams and similar members and shall be placed in horizontal layers not exceeding 1.5m deep in walls, columns and similar members. Concrete shall be placed continuously until completion of the part of the work between construction joints or as directed by Engineer-in-Charge.

02.05 Placing concrete in inclement weather condition

All precautions shall be taken for concreting in extreme weather in accordance with relevant clause of IS:456 2000. Due protection shall be provided to prevent cement being blown away while proportioning and mixing during windy weather. No concreting shall be carried out in continuous heavy rains and necessary arrangements to cover the freshly

poured concrete shall be provided, to protect it from the direct rays of the sun and from drying winds.

All concreting placements should be coordinated with placement of conduits, inserts, and embedded parts etc. executed either by same agency or separately.

Concrete in standing water shall be executed strictly as per IS : 456 2000. This shall be paid as a separate item where applicable.

02.06 Vibration

Concrete shall be compacted by means of vibrators of approved type under proper supervision as directed by the Engineer-in-Charge. The whole mass of concrete shall be well vibrated until a dense mass with a jelly like appearance and consisting and water just appearing on the surface is obtained. Over vibration and vibration of very wet mixes shall be avoided. Care should be taken to avoid segregation and formation of air bubbles.

02.07 Construction Joint

Construction joints shall be made in the position as indicated in drawings and as approved by Engineer-in-charge. Such joints shall be truly vertical or horizontal as the case may be except that in an inclined or curved member the joint shall be strictly at right angles to the axis of the member.

02.08 Curing & Protection

The concrete shall be kept constantly wet for at least seven days from the date of placing of concrete. In very hot weather precaution shall be taken to see that temperature of wet concrete does not exceed 38°C while placing.

Concrete shall not be disturbed after initial setting has started. For freshly laid concrete from work shall not be jarred. Concrete placed below ground surface shall be protected from falling earth during and after placing.

02.09 Finishes

On striking the formwork, all blow holes and honey combing observed shall be brought to the notice of Engineer-in-Charge. The Engineer-in-charge may at his discretion allow such honey combing or blow holes to

be rectified by necessary chipping and packing or grouting with concrete or cement mortar.

If mortar is used, it shall be 1:3 mix or as specified by Engineer-in-Charge. However, if honey-combing or blow holes are of such extent as being undesirable the Engineer-in-Charge may reject the work totally and his decision shall be binding on the contractor. No extra payment shall be made for rectifying these defects. All burrs and uneven faces shall be rubbed smooth by carborundum stone.

The surface of non-shuttered faces shall be smoothened with a wooden float to give a finish equal to that of the rubbed down shattered faces. Concealed concrete faces shall be left as from the shuttering except that honey combed surface shall be made good as detailed above. The top faces of slabs not intended to be surfaced shall be leveled and floated smooth at the levels or slops shown on drawings. The floating shall not be executed to the extent of bringing excess find materials to the surface. The top faces of slab intended to be covered with screed, granolithic or similar surface shall be left with a rough finish. Sides and soffits to be later covered with plaster shall be suitably roughened.

02.10 V-Bee Test/Slump Test of Concrete

At least one Vee-Bee Test/Slump Test shall be made for every compressive strength test carried out. More frequent tests shall be made if there is a distinct change in working conditions or if required by the Engineer-in-Charge .

02.11 Strength Test of Concrete

Samples from fresh concrete shall be taken as per IS:1199 and cubes shall be made, cured and tested at 28 days in accordance with IS:516.

In order to get a relatively quicker idea of the quality of concrete, optional tests on beams for modulus of rupture at 72±2 hours or at 7 days, or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength tests. For this purpose, the values as given may be taken for general guidance in the case of concrete made with ordinary portland cement. In all cases, the 28 days compressive strength as specified shall alone be the criterion for acceptance or rejection of the concrete from strength consideration. If, however, from tests carried out in a particular work over a reasonably long period, it has been established to the satisfaction of Engineer-in-Charge that a suitable ratio between 28 days compressive strength and modulus of rupture at 72±2 hours or compressive strength at 7 days compressive strength as specified, provided the expected strength values at the specified early age are consistently met. However, set of test cubes for 28 days strength test

shall always be taken and maintained to cater to any contingencies in the event of failure of 7 days strength.

02.12 Procedure

A random sampling procedure shall be adopted to ensure that each concrete batch shall have a reasonable chance of being tested, that is the sampling should be spread over the entire period of concreting and cover all mixing units.

02.13 Frequency of Sampling

The minimum frequency of sampling of concrete for each grade shall be in accordance with the following:

Quantity of concrete in the work in m^3	Number of samples
1-5 6-15 16-30 31-50 51 & above	1 2 3 4 4 plus one additional sample for each additional 50 m^3 or part thereof
Note: At least one sample shall be taken from each shift.	

02.14 Test Specimen

Three test specimens shall be made from each sample for testing at 28 days. Additional cubes may be required for various purposes such as to determine the strength of concrete at 7 days or at the time of striking the form work, or to determine the duration of curing, or to check the testing error. Additional cubes may also be required for testing cubes cured by accelerated methods as described in IS:9013. The specimen shall be tested as described in IS:516.

02.15 Test Strength of Sample

The test strength of the sample shall be the average of the strength of three specimens. The individual variation should not be more than $\pm$ 15 percent of the average.

1. The concrete test failing to attain the specified strength.

2. Suspected over loading construction of the structure.

3. Shuttering being prematurely removed and not as per time specified in IS:456 2000.

4. Concrete improperly cured.

The contractor shall carry out tests at his own cost. If the results of the loading test be unsatisfactory, the Engineer-in-Charge may instruct the contractor to demolish and reconstruct the structure or part thereof at the contractor's cost.

03.00 **Form work & Centering**

Form work in general shall conform to IS: 456 2000.

For complicated work, the contractor shall submit his proposal of formwork before starting the work for the approval of the Engineer-in-Charge. The number of props, their sizes and dispositions shall be such as to be able to safely carry the full deed load and constructional loads. However, approval of the Engineer-in-Charge to this effect shall not relieve the contractor of his responsibility for proper work and safety.

All forms of beams, slabs and similar members shall be so designed and erected that the sides can be removed without disturbing the soffit shutter and supports there to.

Beam soffit shall be provided with an upward, camber of 6mm for each 3M of horizontal span or as directed by the Engineer-in-Charge. Vertical props shall be supported on wedges or sole plates or other measures where by the props can be gently lowered while commencing to remove the shuttering. Columns shuttering shall not be over 1.5M in height apiece.

Before removal of the shuttering the concrete shall be examined and it removal order taken from the Engineer-in-Charge. In no circumstances shall forms be struck until the concrete reaches a strength of at least twice the stress to which the concrete may be subjected at the time of striking.

Shuttering shall not be removed until the number of clear days specified in IS:456 2000 have elapsed since the last day of placing concrete in the member concerned. All formwork shall be removed without such shock or vibration as would damage the reinforced concrete. Before the soffits and struts are removed the concrete surface shall be exposed, where necessary. In order to ascertain that the concrete has sufficiently hardened. The specified period may be extended if desired by the

Engineer-in-Charge on account of delayed hardening caused be low atmospheric temperature.

04.00 **Reinforcement in cement concrete**

The steel for reinforcing bars shall be as indicated in drawings and conforming to specifications.

All reinforcement at the time of concreting, shall be free from loose rust or scales, oil, grease or other harmful matter, and other castings that will destroy or reduce the bond.

The number, size, form and position of all the reinforcement shall, unless otherwise directed or authorised by the Engineer-in-Charge be strictly in accordance with the drawings. Wherever inserts interfere with the placing of reinforcement as called for, proper adjustment shall be made as directed by Engineer-in-Charge, before concrete is placed.

All reinforcement work shall conform to IS:456 2000.

The steel reinforcement shall be connected to form a rigid cage. To prevent displacement before or during concreting the bars shall be secured to one another with 16 SWG black annealed binding wire. Bars intended to be in contact at passing points shall be securely wired together similarly at all such points. Wooden planks provided for labour to move shall be supported independent from the reinforcement cage, and the cage shall never be remitted to sag or get displaced during concreting.

The vertical distances required between successive layers of bars in beams or similar members shall be maintained by the provisions of steel spacer bars inserted at such intervals that the main bars do not perceptibly sag between adjacent spacer bars.

Concrete spacer blocks shall be used to ensure cover of concrete over the bars. The concrete over the reinforcement bars shall be as shown in drawings and shall be the clean cover.

The contractor must obtain the approval of the Engineer-in-Charge to the reinforcement placed before any concrete in deposited.

Binding wires and wastages are not to be included in measurements.

05.00 **Brick Masonry works**

05.01 Cement Mortar

Cement mortar shall meet the requirements of IS:2250 and shall be prepared by mixing cement and sand by volume in a mechanical mixer. Proportion of cement and sand shall be 1:6 (1 part of cement and 6 parts of sand), or as directed by the Engineer-in-Charge/shown on the drawing, for brick masonry of one brick thickness or more, while 1:4 cement mortar (1 part of cement and 4 parts of sand) shall be used for brick masonry of half brick thickness. The sand being used for mortar shall be sieved. The mortar shall be used as soon as possible after mixing and before it has begun to set and in any case within initial setting time of cement after water is added to the dry mixture. Mortar unused for more than initial setting time of cement, shall be rejected and removed from the site of work.

05.02 Proportioning

The unit of measurement for cement shall be a bag of cement weighing 50 kgs and this shall be taken as 0.035 cubic metre. Sand shall be measured in boxes of suitable size on the basis of its dry volume. In case of damp sand, its quantity shall be increased suitably to allow for bulkage.

05.03 Mixing

The mixing of mortar shall be done in a mechanical mixer operated manually or by power. The Engineer-in-Charge may, however, permit hand-mixing as a special case, taking into account the magnitude, nature and location of work. The Contractor shall take the prior permission of Engineer-in-Charge, in writing, for using hand-mixing before the commencement of work.

05.04 Mixing in Mechanical Mixer

Cement and sand in specified proportions, by volume, shall be thoroughly mixed dry in a mixer. Water shall then be added gradually and wet mixing continued for at least one minute. Care shall be taken not to add more water than that which shall bring the mortar to the consistency of stiff paste. Wet mix from the mixer shall be unloaded on water-tight masonry platform, made adjacent to the mixer. Platform shall be at least 150 mm above the leveled ground to avoid contact of surrounding earth with the mix. Size of the platform shall be such that it shall extend at least 300mm around the loaded wet mix area. Wet mix, so Portland cement

conforming to IS:269J after addition of water. Mixer shall be cleaned with water each time before suspending the work.

05.05 Hand Mixing

The measured quantity of sand shall be leveled on a clean water tight masonry platform and cement bags emptied on top. The cement and sand shall be thoroughly mixed dry by being turned over and over, backward and forward, several times till the mixture is of uniform colour. The quantity of dry mix which can be consumed within initial setting time of cement shall then be mixed with just sufficient quantity of water to bring the mortar to the consistency of stiff paste.

05.06 **Construction Procedure**

Soaking of Bricks

Bricks shall be soaked in water before use for a period that is sufficient for the water to just penetrate the whole depth of bricks as well as to remove dirt, dust and sand. Proper soaking of bricks shall prevent the suction of water from the wet mortar as otherwise mortar will dry out soon and crumble before attaining any strength. The bricks shall not be too wet at the time of use as they are likely to slip on mortar bed and there will be difficulty in achieving the plumpness of wall as well as proper adhesion of bricks to mortar. The period of soaking shall be determined at site by a field test by immersing the bricks in water for different periods and then breaking the bricks to find the extent of water penetration. The least period that corresponds to complete soaking, will be the one, to be allowed for in the construction work.

The soaked bricks shall be removed from the tank, sufficient early, so that at the time of laying, they are skin dry. The soaked bricks shall be stacked over a clean place, wooden planks or masonry platforms to avoid earth, dirt being smeared on them.

05.07 Laying

Brick Work (one or more brick thickness)

Brick work (one or more brick thickness) shall be laid in English Bond unless otherwise specified. Half or cut bricks shall not be used except when needed to complete the bond. In no case the defective bricks shall be used.

A layer of average thickness of 10mm of cement mortar shall be spread on full width over a suitable length of lower course or the concrete surface.

In order to check and achieve uniformity in masonry, the thickness of bed joints shall be such that four courses and three joints taken consecutively shall measure equal to four times the actual thickness of the brick plus 30mm. Each brick with frog upward, shall be properly bedded and set in position by gently tapping with handle of trowel or wooden mallet. Its inside faces shall be buttered with mortar before the next brick is laid and pressed against it. After completion of the course, all vertical joints shall be filled from top with mortar.

All brick courses shall be taken up truly plumb; if battered, the batter is to be truly maintained. All courses shall be laid truly horizontal and vertical joints shall be truly vertical. The level and verticality of work in walls shall be checked up at every one meter interval.

The masonry walls of structures shall be carried up progressively, leaving no part one metre lower than the other. If this cannot be adhered to, the brick work shall be raked back according to bond (and not left toothed) at an angle not more than 45 degrees but raking back shall not start within 60 centimeters of a corner. In all cases returns, buttresses, counter forts, pillars etc. shall be built up carefully course by course, and properly bonded with the main walls. The brickwork shall not be raised more than fourteen (14) courses per day.

At the junction of any two walls, the bricks shall at each alternate course, be carried into each of the respective walls so as to thoroughly unite the work.

The courses at the top of plinth and sills, at the top of the wall just below the soffit of the roof slab or roof beam and at the top of the parapet, shall be laid with bricks on edge. Brick on edge course shall be so arranged as to tightly fir under the soffit of the roof beam or roof slab, restricting the mortar layer thickness upto 12mm, however, any gap between the finished brick work and soffit of roof slab/beam shall by suitably sealed with the mortar.

06.00 **Plastering**

06.01 Materials

The specifications for cement, sand and water as given in specification including relevant clauses for quality and testing of materials shall also apply for cement plaster materials and works.

Cement mortar shall be of grade and thickness specified in drawing or as directed by the Engineer-in-Charge, if not specified. The surface on which plastering is to be done shall be thoroughly cleaned from dust, dirt, oil,

etc. It should be washed properly and watered for 4 hours before plastering. The joints of brick work shall be raked out to a depth of atleast 12mm when plastering has to be done. On cement concrete surface shall be scarified by lines with trowel then it is still green or hacked if concrete is hard as directed by Engineer-in-Charge.

Plaster shall not in any case, be thinner than specified. It shall have uniform specified thickness. Any extra thickness of plaster done by contractor will not be paid for. When smooth finishing is required the cement plaster shall be floated over with neat cement within 15 minutes of the application of the final coat.

During the process of plastering all corners shall be rounded to a radius of 25mm unless otherwise specified.

The plaster shall be protected from sun and rain by such means as the Engineer-in-Charge may approve. The plaster shall be cured for 14 days.

Construction joint shall be kept in plastering work at places approved by Engineer-in-Charge .

07.00 **Steel Works**

All finished steel unless otherwise specified shall be well and clearly rolled to dimensions and weight as specified by ISI subject to permissible tolerances as per IS 1852-1973.

Material shall be free from cracks, surface flaws, laminations, rough and imperfect edges and other harmful defects like excessive rust, scaling and pitting etc. Structural steel work shall conform to requirements depending upon the designation of steel that is being selected to be used for particular structural function as specified in drawings.

All structural steel girders, channels, plates and other rolled sections shall conform to IS : 2062, grade-A. Pipes shall conform to IS : 1161 - YST 240 MPa

Electrodes required for metal arc welding shall be covered electrodes conforming to IS 814 – 1970.

Fabrication: Steel sections as required shall be straightened and cut to square and exact lengths. Cut ends exposed to view shall be finished smooth. No two pieces shall be otherwise welded or jointed to make up the required length of the number.

If straightening, flattening or bending is necessary, a process in a manner that will not damage the material or impair its strength shall do it. Shearing, flame cutting or chipping shall be done carefully and accurately. Finished member shall be free from undue twists, bends, wrapping, distortion or other irregularities. Holes, where required, shall be drilled to required size and not made nor enlarged by burning. Holes shall have their axis perpendicular to surface bored through. Any fabricated assembly shall be without the member being strained or forced into position and components shall meet at perfect angles. Where practicable, welds should preferably be made in flat position. Welds shall be free from cracks, discontinuity in welding, or other defects categorised as such in relevant standards. Weld should be inspected, where necessary, at no cost to owner. A defective weld, harmful to structural strength, shall be cut out and rewelded. All welds shall be cleaned of slag and other deposits after completion.

All architectural and metal work shall have butt welds between adjacent surfaces ground smooth. Items concealed from view need not require grinding of welds. Architectural metal work shall be well formed to shape and size with sharp lines, angles and true curves. Drilling and punches shall produce clean true line and surface. All site connections shall be by permanent bolts only and no site welding shall be carried out. Welding at site shall not be allowed. Exposed weld shall be ground smooth, exposed riveting shall be flush and exposed surfaces shall have smooth finish. Joints shall be milled to close fit and corner joints shall be well formed and in true alignment. Work shall be accurately fastened in place.
Gate framing shall be square with no rough, sharp and jagged edges with welds ground smooth. It shall be hung such that top of the gate is level with sufficient clearance at the bottom to allow free movement of gate. Double gates shall be hung with the gap between stiles not more than 5mm. Fittings shall be as per requirement of Architect/Site Engineer.

All fixing shall be done as per standard practice, if not indicated on drawings. Contractor shall be responsible for correct fitting of all members for elevation and alignment of finished works, their level and plumb and also for necessary adjustment of steel work because of discrepancies in other works. Painting shall be as described under the head “Painting”.

Roof Covering: Canopy roof sheeting shall be of 0.6mm. galvalume colour coated sheets and shall have trapezoidal profile with 28-32 mm deep crest and 186-250 c/c profile width with minimum two ribs at centre for stiffening. The sheet shall be of minimum fy = 345 MPa and shall be coated with hot dip metallic Zinc aluminum alloy @ 150 gsm coating mass total on both sides.

False Ceiling: False ceiling panels on the under-side of the canopy shall be of 0.6mm thk. cold rolled colour coated steel of profile as per drawings of approved colour and make. False ceiling panels shall be fixed with stainless steel screws in such a way that they are not visible from below after completion of work.

Painting on Metal Work: Painting shall be as done to meet the following specification for canopy:

A. ON COILS

SUBSTRATE:

i) Cold Rolled Steel Coil

ii) Galvanised Coil IS 227

COATING	**NORMAL**	**MAXIMUM**
Zinc	120 gms/ sqm	8 microns
Epoxy Primer	5-7 microns	10 microns
Alkyd Backer	5-7 micron	10 micron
Polyster top-Coat	12-16 micron	15-22 micron
Normal Total Coatings	22-30 micron	40 micron

TYPICAL PROPERTIES

	PROPERTY	APPLICABLE SPECIFICATION	DATA
1	Normal organic coating thickness	ECCA-T-1(BS-3900/C-5)	23 micron
2	Specular gloss (60 Deg.)	ECCA-T-2(ASTMD- 523)	30-80%
3	Pencil Hardness	ECCA-T-4 (ASTMD-3363)	2H
4	Scratch Resistance	BS-3900/E2(IS-101)	1500g
5 5.1	Flexibility : Reverse Impact	ECCA-T-6 (BS-3900)	5mn/mm 40”/lb
5.2	Bend Test	ECCA-T-7 (BS-3900/E1)	2-T
5.3	Frichsen	IS-10175 (52)	>5mm

B. **ON ALL OTHER STEEL MEMBERS**

i) 1ST one Coat of Acrylic Epoxy Primer Sprayed after cleaning and surface preparation.

ii) Two coats of Acrylic Epoxy Paint Sprayed.

08.00 **White Washing with Whiting**

Preparation of mix : Whiting (ground white chalk) shall be dissolved in sufficient quantity of warm water and thoroughly stirred to form a thin slurry which shall then be screened through a clean coarse cloth. Two kg of gum (DDL) and 0.4 kg of copper sulphate dissolved separately in hot water shall be added for every cum of the slurry which shall then be diluted with water to the consistency of milk so as to make a wash ready for use.

08.01 **Preparation of surface**

Before new work is white washed, the surface shall be thoroughly brushed free from mortar droppings and foreign matter.

08.02 **Application:**

The white wash shall be applied with moonj brushes to the spcified number of coats. The operation for each coat shall consist of a stroke of the brush given from the top downwards, another from the bottom upwards over the first stroke, and similarly one stroke horizontally from the right and another from the left before it dries.

Each coat shall be allowed to dry before the next one is applied. Further each coat shall be inspected and approved by the Engineer-in-charge before the subsequent coat is applied. No portion of the surface shall be left out initially to be patched up later on.

For new work, three or more coats shall be applied till the surface presents a smooth and uniform finish through which the plaster does not show. The finished dry surface shall not show any signs of cracking and peeling nor shall it come off readily on the hand when rubbed.

09.00 **Acrylic Emulsion Painting**

09.01 **Preparation of surface**

Same as mentioned in Oil Bound Distemper.

09.02 **Preparation of Mix**

Plastic emulsion paint shall conform to IS:5411 (Part 1) and shall be of approved shade. Preparation of mix shall be as per manufacturer's instructions.

09.03 **Application of Paint**

The Paint mix shall be continuously stirred while applying for maintaining uniform consistency number of coats shall be 3 or more coats. The painting shall be laid evenly and smoothly by means of crossing and laying off. The crossing and laying off consists of covering the area with paint, brushing the surface hard at first, then brushing alternately in opposite direction 2/3 times and then finally brushing lightly in a direction at right angles to the same. In this process no brush marks, no hair marks, no clogging of paint puddles shall be permitted. The full process of crossing and laying off will continue 1 coat. The paint shall be applied by means of brush and roller.

Plastic emulsion paint shall start only after the proceeding coat has become sufficiently hard to resist the brush marking. Subsequent coats of plastic emulsion shall also be started after the preceding coat is dried by evaporation of water content.

Plastic emulsion paint shall start only after the proceeding coat has become sufficiently hard to resist the brush marking. Subsequent coats of plastic emulsion shall also be started after the preceding coat is dried by evaporation of water content.

The surface of finishing shall present a flat, velvety smooth finish, even and uniform shade without patches, marks, paint drops etc.

10.00 **Synthetic Enamel Paint**

The shop coated surface shall be rubbed down thoroughly with abrasive paper to remove dust, rust, other foreign matters and degreased cleaned with warm fresh water and air dried.

Primer coat of red-oxide zinc chromate primer conforming to IS:2074 shall be applied by brushing/spraying over the shop coat in a manner so as to ensure a continuous and uniform film throughout.

10.01 **Final Paint**

After the primer is hard dry the surface shall be dusted of and one coat of synthetic enamel paint of approved color and shade (conforming to IS:2932) shall be applied by brushing/spraying. The coats are applied after drying one after another to give a uniform surface. Paints can be diluted / thinning by means of thinner only as per the requirements of the finished paint surface.

11.00 **SFRC PRE-CAST SLAB**

Brief description of main items shall be follows :

Heavy duty 75 mm to 100 mm thick precast SFRC Slab in trenches of KK make or equivalent (size 450 x 600) shall be provided and fixed as per instruction of Engineer-in-Charge.

LIST OF APPROVED MAKES FOR CIVIL WORK

Cement	Portland cement	L&T Raymonds ACC Ambuja DLF
Steel	Tor Steel	SAIL TISCO RATHI Vizag steel
	Structural Steel	SAIL TISCO Vizag steel
Sheeting		Interarch Metacolor Supertech (india) Pvt. Ltd.
Bolts		Unbrako TVS GKW
Electrodes		ESAB Advani D&H

Paint	Asian Paints ICI Shalimar Berger
External Finish	Sandtex of ACC Spectrum Murotex Unitile
Construction Chemicals	CICO FOSROC ROFFE STP MC Pidilite Vam Organic
Grout	ACC Roffe Fosroc Unitile
False Ceiling	1. Tiger Steel Engineering India Ltd. 606, Devarrata Building, Sec. 17, Vashi, New Mumbai – 400 705 2. Metalex Engineering & Consruction Pvt. Ltd. E-165, Greater Kailash Part-I, New Delhi 3. Interarch 4. Lloyd Insulation Pvt. Ltd.

Note: In case of equivalent standard available as substitute of the above mentioned vendors, it shall be at the discretion of the Engineer –In-charge for such approval. Unless approved by the EIC contractor shall not use such equipments/material other than the makes mentioned.

SECTION – 9

SCHEDULE OF RATES (SOR)

SCHEDULE OF RATES(SOR)

S.No	Description of item	Unit	Qty.	Unit Rate Inclusive of all Taxes & Duties except Service Tax (Rs)	Total Amount Inclusive of all Taxes & Duties except Service Tax (Rs)
	Earth work in excavation/site grading				
1	Earth work in excavation in all kinds of soil, PAVERS/ flexible pavements/ WBM except rock in any plan dimension up to 2.0 M depth including disposal of excavated earth up to any lead in all conditions, and disposal of surplus and unserviceable earth. Soil to be leveled and neatly dressed complete in all respect as per scope of work, detailed construction drawings, as per technical specifications and directions of the Engineer-in-charge.	Cum	26.01		
	(The Contractor shall take into account in his rate, the provision for excess excavation for necessary working space, slope etc., required for excavation and other allied works and refilling the side slopes and working space)				
2	Supply, laying of 40mm down metal and filling in the gaps with chips to fill the voids and as per directions of EIC	Cum	1.44		
	Note: Contractor to include the rates of all tools,tackles,labour charges etc., No extra payment made except filled and executed quantity at the site				

3	**Supplying and filling Sand in 150 mm thick** layers watering, rolling, ramming, consolidating and dressing the surface including cost of sand (zone-II/Zone-III sand only) complete in all respect as per scope of work, detailed construction drawings as per technical specifications and directions of the Engineer-in-charge.	Cum	2.7		
	Note				
	[1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, all leads, transportation, loading/unloading, levies towards disposal of surplus/unserviceable earth, borrow earth including compaction and making required slopes and berms, working space etc. with all bye works and sundry works.				
	[2. Only plan dimensions as per drawing and true levels & net volume after compaction are measurable for payment purpose.]				
	PCC				
4	Providing, laying in position, construction and handing over of PCC in foundations, and under floor, etc complete in all respects as per scope of work, detailed construction drawings, technical specifications and direction of Engineer-in-charge.				
	a) PCC 1:4:8 [1 Cement : 4 coarse sand : 8 stone aggregate 40 mm nominal size]	Cum	3.16		

	[1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as minimum 43 grade cement, coarse sand and coarse aggregates, other minor construction materials, shuttering, curing,staging, shoring/strutting, finishing, etc. with all bye works and sundry works.]				
5	**RCC in foundation**				
	Providing, laying in position, construction and handing over of RCC 1:1.5 :3 in foundations etc, including shuttering inserts/ anchor bolts, sleeves, two coats of bitumen paint on surfaces in contact with soil etc complete in all respects as per scope of work, detailed construction drawings, technical specifications and direction of Engineer-in-charge.	Cum	8.33		
	[1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as minimum 43 grade cement, coarse sand and coarse aggregates, other minor construction materials, grouting, insert steels, pipes, shuttering, staging, shoring/strutting, bitumen painting, finishing, testing etc. with mudmat excavation & backfilling all bye works and sundry works.				
6	**Reinforcement steel**				
	Supplying and Fabricating and Fixing in position HYSD Steel Reinforcements/ TMT Grade Fe-415 conforming to IS1786-1985 at all levels and positions including the Cost of transport, Straightening, Cutting, Bending, Cranking, Binding, Welding, Provision of necessary Chairs and Spacers, Preparation of bar bending schedule Drawings, getting the same approved etc., as	MT	0.65		

	per Drawings and Specifications and including Cost of binding wire, Labour etc., all complete in all respects as per scope of work, detailed construction drawings, technical specifications and direction of Engineer-in-charge. The chairs and spacer bars provided will not be Measured for payment.				
	[1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as steel Reinforcement, binding wire and other minor construction materials, testing etc. all bye works and sundry works.				
	2. Chairs, laps, spacers, wastage etc. shall be to contractor's account.]				
7	**Brickwork**				
	Providing and constructing 230mm thick Flyash Brick confirming to IS12894:1990, flyash brickwork with Cement Mortar 1:6 (1 Cemnt : 6coarse sand) using cement solid blocks of size 290 x 225 x 140mm for manufacturing of flyash of 80 kgs, cement of 15 kgs.Gypsum of 5 kgs,and stone dust including designation in super structure plain or curved on plan including cost of nessessary scaffolding works ,cutting bricks to required shape, racking away the joints, curing, labour and all other incidental charges.complete at all heights and depths above & below the plinth level as directed conforming to IS-1077,1986 for commpressive strength of 50 Kg/Sqm.Bricks shall be first class from approved source to the site including cost of seigniorage charges with good dimmentional characteristics etc, complete job.	Cum	2.484		

8	**Plastering 12mm thick** in two coats with base coat of 8mm thick in CM (1:5) and top coat of 4mm thick in CM (1:3) with dubara sponge finishing including cost and conveyance of all materials like cement, finesand(screened), water, etc., to site, cost of seigniorage charges and all other taxes on all materials, and operational, incidental charges and all labour charges for mixing mortar, finishing, scaffolding, lift charges, curing, including cutting grooves etc. as directed by Engineer-in-charge, complete for finished item of work (APSS No. 901 & 904) for internal even faces of walls	Sq.m	9.4		
Painting (ACE/ Weathercoat / Weathershield)					
9	Supplying and applying 2 coats of Ace paint of Asian paints / Weathercoat of Berger paints / Weathershield of ICI paints on external walls surfaces in approved colour at all heights as per scope of work and recommendations of manufacturer including surface preparation, primer putty etc. detailed construction drawings , technical specifications and directions of the Engineer-In-Charge.		3.4		
	[Rate to include priming coat of putty, scaffolding, tools & tackles consumables etc complete.]				
Dismantling Works					
10	Dismantling of existing constructed brick work in the SS tube trench and disposal of unservicable of bricks away from the working site	Cum	3.486		
	Note: Contractor to include the rates of all tools,tackles,labours and for disposal of unservicable material away from the working site				
Structural works					

11	Supplying,Fabricating & Erecting in position Steel structures fabricated out of Angles, Chequered plates,flats, plate etc. ,confirming to IS:2062 and/or from pipes confirming to IS:1161 and modification of existing drain culvert covers as required and placing them on eixisitng tube trench etc . including cutting, welding, bolting, hoisting, fixing in position, including application of one coat of primer at shop and second coat of primer at site after erection and two coats of synthetic enamelfinish paint with colour approved by BGL at site. The work is to be completed in all respect as per specification, scope of work, detailed construction drawings and directions of the EIC.	MT	0.27		
	[Rate to include cost of all labour,nut,bolts,tools,tackles,hire charges royalties,levies,transportation,scrap value,gas cutting,welding,other consumables,paints,compressed air,water,electric power etc, all complete]				
12	Supplying and providing PVC outdoor bathroom door with necessary fittings like handles,stays,hinges,screws, nuts,bolts and accessories etc., required. The rate to include tools,tackles,labour,installation etc.	Sq.m	3		
				Sub Total(Rs.)	
				Service Tax @.....%	
				Grand Total inclusive of all applicable Taxes and duties(Rs.)	