



Bhagyanagar Gas Ltd.

**BHAGYANAGAR
GAS LIMITED**

Tender for Execution of Miscellaneous Civil Works in Mother
Station at Kakinada.

Bid Document No. BGL/321/2016-17

**VOLUME
II OF II**



Bhagyanagar Gas Ltd.

BHAGYANAGAR GAS LIMITED

(A JOINT VENTURE OF HPCL & GAIL)

BID DOCUMENT FOR

**TENDER FOR EXECUTION OF MISCELLANEOUS CIVIL WORKS
IN MOTHER STATION AT KAKINADA**

**UNDER LIMITED DOMESTIC
COMPETITIVE BIDDING**

Bid Document No.: BGL/321/2016-17

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SECTION – 7

SCOPE OF WORK



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1.0 SCOPE OF WORK.

The broad scope of work is essentially but not limited to the following.

PART-I: FILLING OF DUG AREA AND RESTORATION OF DAMAGED CABLE TRENCHES AT BACKSIDE OF AUXILIARY BUILDING

- 1) Back filling of Earth in the dug up area
- 2) Construction of single cable trench at the backside of the Auxiliary Building
- 3) Filling and Restoring the dislocated paver blocks besides the damaged Cable Trench
- 4) Supply and filling of sand in the cable trenches.
- 5) Removal of existing 2" thick concrete layer for the entire slab area in the Office room building.
- 6) Providing and laying cement concrete(1cement:1.5 coarse sand:3 aggregate) of requisite thickness as per site requirement over roof surfaces to maintain slope.
- 7) Water Proofing coatings for the Slab area using the high performance Acrylic waterproofing membrane.
- 8) Repair Works for the Exterior and interior Walls, Damp Proof course for the walls and painting of internal walls.
- 9) Providing and laying 15 mm thick cement plaster on walls.

02.0 DETAILED SCOPE OF WORK UNDER THE PRESENT TENDER:

Detailed scope of work is divided under different sub-heads. List of sub-heads along with different activities (with brief specification) is evolved and estimated quantities are given. The tenderer has to quote on sub-head wise per unit rate as mentioned.

Generally the following shall constitute the Contractor's scope of work but not limited to as given herein:

02.01 BACK FILLING OF EARTH IN THE DUG UP AREA

Back filling for Plot

Sweet Earth : Sweet earth is the clayey earth to be obtained from borrow areas indicated in the drawings or, prospecting to be carried out by the Contractor as per detailed specifications and direction of the Owner. Earth obtained from the excavation of the plot may be used for plot filing, if found suitable (as per relevant IS code) laboratory tests. All materials required for the backfill etc shall be obtained from the designated borrow areas to be prospected & so tested by the Contractor as per specification and as shown in construction drawings or as designated by the Owner. The depth of cut in all borrow areas will be designated by the Owner and the cuts shall be made to such designated depths only. Shallow cuts will be permitted in the borrow areas if un-stratified materials with uniform



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moisture contents are encountered. Each designated borrow area shall be fully exploited before switching over to the next designated borrow area. Haphazard exploitation of borrow pits shall not be permitted. The type of equipment used and the operations in the excavation of materials in borrow areas shall be such as will produce the required uniformity of mixture of materials for the embankment.

Note: All permission to procure borrow earth, royalties, cess and transportation, etc. shall be contractors' responsibility.

Tamping:

Earth fill shall be spread in layers of not more than 150 mm. in thickness when loose and shall be moistened to have the required moisture content as specified. When each layer of material has been conditioned to have the required moisture content, it shall be compacted to the specified density by rollers, mechanical tampers by other approved methods. All equipment and methods used shall be subject to approval based on evidence of actual performance and field compaction tests. The capacity of mechanical roller/tamper and number of passes required to achieve the specified [95% of MDD] shall be determined based on field tests [to match the OMC & MDD for the borrow material as determined at Approved Laboratory] before taking up the filling of earth

02.02. CONSTRUCTION OF SINGLE CABLE TRENCH AT THE BACKSIDE OF THE AUXILIARY BUILDING

Providing and construction of Single cable trench in brick masonry over the 100 mm thick PCC (1:4:8) base with precast SFRC cover of 400mmX500mmX 70 mm thk along with edge angle (ISA 75x75x6) and fixing of ISA 50x50x6 for supporting pipe trays @ spacing of 1000 mm c/c along the trench, including 12 mm in CM 1:5 plastering of walls of trenches complete in all respect as per scope of work, detailed construction drawings, technical specifications and directions of the Engineer-in-charge.

02.03. FILLING AND RESTORING THE DISLOCATED PAVERBLOCKS BESIDES THE DAMAGED CABLE TRENCH

Construction and handing over of CC inter locking paver block 80 mm thick, I shape, rough finish, M-40 strength with epoxy coating of approved brand laid over the sand bed of minimum 50 mm thick up to the level of the existing Paver block area. The Paver blocks will be supplied by BGL. The work should be complete in all respects as per scope of work, detailed construction drawings, technical specifications and directions of the Engineer-in-charge.

02.04. FILLING OF SAND IN CABLE TRENCHES

Supplying and filling Sand in 150mm thick layers watering, ramming, consolidating and dressing the surface including cost of sand (Zone-II/Zone-III sand only) complete in all respects as per scope of work, detailed constructions drawings as per technical specifications and directions of the Engineer-In-Charge.



02.05 REMOVAL OF EXISTING 2" THICK CONCRETE LAYER FOR THE ENTIRE SLAB AREA

Removal of the existing 2" concrete layer laid on the mother slab for the Office room building and Security room slab area. All the debris is to be removed/taken out of BGL boundary and disposed off by the contractor. Item includes all sort of required materials, labour charges, tools and tackles, transportation charges, octroi, taxes except service tax.

02.06 PROVIDING AND LAYING CEMENT CONCRETE (1CEMENT:1.5 COARSE SAND: 3 AGGREGATE) OF REQUISITE THICKNESS AS PER SITE REQUIREMENT OVER ROOF SURFACES TO MAINTAIN SLOPE

Generally the following shall constitute the Contractor's scope of work but not limited to as given herein:

Providing and laying of cement concrete of proportionate ration 1 cement: 1.5 Coarse sand: 3 Aggregate of required thickness as per the site requirement over roof surface to maintain the minimum slope of roof: 1in 100 towards the rain water drain pipes.

Material specifications and Work Specifications are as follows:

Material Specifications

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.

Aggregates

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

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.

Plain 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.



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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 fine 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.

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.

Placing

The place where concrete is to be poured should be clean and free from all loose 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



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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.

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.

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 of 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.

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.

02.07 WATER PROOFING TREATMENT WITH APP (ATACTIC POLYPROPYLENE POLYMERIC) MEMBRANE FOR THE SLAB AREA

Water proofing treatment of roofs with APP modified polymeric membrane shall be five course, course as specified in the item.

a) Materials:

The bitumen primer shall conform to the requirements laid down in IS 3384.



APP Modified Membrane: It is a polymeric water proofing membrane manufactured to high standards. It is five layered APP modified polymeric membrane with centre core as 20 micron HMHDPE/100 micron HMHDPE High Molecular High Density Polyethylene Film, is the heart of the membrane and protects against water and moisture. The centre core is sandwiched on both sides by high quality polymeric mix with properties of high softening point, high heat resistance and cold resistively to make it ideal for all water proofing treatment. The polymeric mix is protected on both sides with 20 micron HMHDPE film. The membrane is available in variable thickness and weights. Usual width is 1.0 m.

Important physical and chemical parameter of the membrane shall be as given in Table 22.1 for guidance.

TABLE 22.1

<i>Centre Core</i>	<i>Film</i>	<i>Thickness</i>	<i>Weight</i>
20 micron HMHPDE	20 micron HMHPDE	1.5 mm	2.25 kg/ sqm.
100 micron HMHPDE	20 micron HMHPDE	2.00 mm	3.00 kg./ sqm.

Where proprietary brands Atactic Polypropylene modified polymeric membrane is proposed to be used by the contractor, they shall conform in all respect to the specification in the preceding paras and manufactured by a company of repute.

Bonding Material: This shall consist of blown type bitumen conforming to IS 702 or residual bitumen 85/25 conforming to IS 73 heated to the correct working temperature of 180°C. The penetration of the bitumen shall not be more than 40 when tested in accordance with IS 1203, unless otherwise specified each coat of bonding material shall be of blown type bitumen of grade 85/25 heated to a working temperature of 180 degree C and applied @ 1.20 kg. per square metre of the surface area.

Surface Finish: Surface finish shall be with brick tiles of class designation 100 grouted with cement mortar 1:3 (1 cement : 3 fine sand) with 2% integral water proofing compound by weight of cement over a 12 mm thick layer of cement mortar 1:3 (1 cement: 3 fine sand) and finished neat, as shown in Fig. 22.11. Surface finish shall be measured and paid for separately.

b) Preparation of Surface:

The surface to be treated shall have a minimum slope of 1 to 120. This grading shall be carried out with cement concrete or cement plaster with coarse sand, as desired, to the average thickness required and finished smooth. Such grading shall be paid for separately.

Junctions between the roof and vertical faces of parapet walls, chimneys etc. shall be chased by running triangular fillets 7.5 x 7.5 cm. size, cement



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concrete. At the drain mouths, the fillets shall be suitably cut back and rounded off for easy application of water proofing treatment and easy flow of water. Cement concrete where shall be 1:2:4 mix (1 Cement: 2 Coarse sand: 4 Graded stone aggregate 20 mm. Nominal size). The provision of fillets shall be deemed to be covered by the item of water proofing and shall not be measured or paid for separately.

In existing roof where gola and drip course are provided at the junction of roof and vertical face of parapet wall, chimney stacks, etc. These shall be dressed suitably and finished smooth so as to ensure an easy and gradual turning of the flashing. Any dismantlement or forming and finishing smooth the junction for forming the base of the flashing shall not be measured or paid for separately and shall be deemed to form part of the preparation of the surface.

While the grading of roof surface is being done, it shall be ensured that the outlet drain pipe have been fixed and mouth at the entrance have been eased and rounded off properly for easy flow of water. When any pipe passes through the roof to be treated, angular fillet of shape shown in Fig. 22.11 shall be built around it for the water proofing treatment to be taken over it. These fillets shall not be measured or paid for separately. For carrying over and tucking in the water proofing felts into the parapet walls, chimneys stacks etc. a horizontal groove 6.5 cm. deep, 7.5 cm. wide section with its lower edge at not less than 15 cm. above the graded roof surface shall be left on the inner face of the same; during construction if possible. When such groove has not been left, the same shall be cut out neatly and the base at rear of the groove shall be finished smooth with cement plaster 1:4 (1 cement: 4 coarse sand). Such cutting of the groove and its finishing smooth shall be part of the water proofing or paid for separately. No deduction shall be made either for not making the groove or when the latter has already been left in the masonry by the construction agency. Tucking in the water proofing felt will be required where the parapet wall exceeds 45 cm. in the height from the graded surface. Where the height is 45 cm. or less, no groove will be required as the water proofing treatment will be carried over the top of the parapet wall to its full thickness. In the case of low dividing walls of height 30 cm. or less, outlets therein shall be cut open for full height and the bottom and sides shall be rendered smooth and corners rounded and such treatment shall not be measured and paid for separately. Where expansion joints are left in the slab the provision of dwarf walls and/or RCC slabs for covering them and finishing the surface smooth shall be the responsibility of the construction agency, which had laid the roof slab and will not be included in the operation of water proofing. The graded surface of the roof and concrete fillets and the faces of walls shall be thoroughly cleaned with wire brushed and all loose scales etc. removed. The surface shall then be dusted off. Any crack in the roof shall be cut to V section, cleaned and filled up flush with cement mortar slurry 1:4 (1 cement



: 4 coarse sand) or blown type petroleum bitumen of IS grade 85/25, or approved quality conforming to IS 702. Such cleaning of the surface or treating the cracks shall not be paid for separately.

c) **Treatment:** The water treatment shall be of five or seven course as specified.

In seven course treatment, the first four courses shall be the same as for five course treatment. The fifth course shall be a layer of APP modified polymeric membrane. The sixth course shall be a coat of bonding material and the top most seventh course shall be of specified surface finish.

d) Laying

(a) First course shall be a coat of bitumen primer @ 0.40 kg per sqmt followed by subsequent course as per treatment required.

(b) Drain outlets shall be given a four or six course treatment as specified for the roof in the description of the item in the manner specified for the flat roof surface. Water proofing treatment shall be carried into the drain pipe or outlets by at least 10 cm. The water proofing treatment laid on the roof surface shall overlap the upper edge of the water proofing treatment in the drain outlets by at least 10 cm.

(c) The APP modified polymeric membrane shall be cut to the required length, brushed clean of dusting material and laid out flat on the roof to eliminate curls and subsequent stretching. The membrane shall normally be laid in length in the direction of the slope and laying shall be commenced at the lowest level and worked up to crest. The membrane shall not be laid in single piece of very long lengths as they are likely to shrink; 6 to 8 m are suitable lengths. The roof surface shall be cleaned and dry before starting the membrane treatment. Each length of membrane shall be laid in position and rolled up for a distance of half its length. The hot bonding material shall be poured on the roof across the full width of the rolled membrane as the latter is steadily rolled out and pressed down. The pouring shall be so regulated that the correct weight of bonding material per unit area is spread uniformly over the surface. Excess bonding material that gets squeezed out at the ends shall be levelled up as laying proceeds. When the first half of the strip of felt has been bonded to the roof, the other half shall be rolled up and then unrolled on the hot bonding material in the same way. Subsequent strips shall also be laid in the same manner. Each strip shall overlap the preceding one by at least 7.5 cm. at the longitudinal edges and 10 cm. at the ends. All overlaps shall be firmly bonded with a blow lamp and leveling down unevenness. The fourth layer of bonding material in the five course treatment shall be carried out in a similar manner after the flashing has been completed.

(d) In a seven course treatment the fifth layers of membrane shall be laid in the manner already described, taking care that laps in the membrane are staggered from those in the earlier layer. The sixth layer of bonding material shall be carried out after the flashing is done (See Fig. 22.23).

(e) *High Parapet Walls, Chimney Stacks etc.:* Membrane shall be laid as flashing wherever junctions of vertical and horizontal surfaces occur. Longitudinal laps shall be 10 cm. The lower layer of flashing membrane in a six course treatment shall overlap the roof water proofing by not less than 20 cm. while the upper layer shall overlap the roofing felt by 10 cm. The minimum overlap of the flashing membrane in five course treatment over the roofing membrane shall be 10 cm. The flashing shall consist of the same five or seven course treatment as for the roof except that the final course shall be replaced by an application of 12 mm thick cement plaster 1:3 on the vertical and sloping faces only, of the flashing as shown in Fig 22.10. The overlap along the length of flashing shall stagger with those in the second layer of flashing membrane (in a seven course treatment and with the joints in the roof membrane).

The upper edge of the finishing membrane shall be well tucked into the flashing grooves in the parapet, chimney stacks etc. to a depth of not less than 6.5 cm. Corresponding applications of bonding material shall also be made. The flashing treatment shall be firmly held in place in the grooves with wood edges at intervals and the grooves shall be filled up with cement mortar 1:4 (1 cement: 4 coarse sand) or cement concrete 1:2:4 (1 cement: 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) and surface finished smooth with the rest of the wall. The cement work shall be cured for 7 days. When dry, the exposed plaster joints of grooves shall be painted with bitumen and two coats of bituminous solution shall be applied on the vertical and sloping surface of flashing (see Fig. 22.11).

After the top flashing membrane layer has been fixed, the penultimate layer of bonding material shall be applied over the roofing membrane and the horizontal overlaps and vertical and sloping surfaces of the flashing at the specified rate.

(f) *Low Parapet Walls:* Where parapet walls are of height 45 cm. or less, membrane flashings shall be provided in the same manner as for flashings in the case of high parapet walls except that the upper edge shall be carried upto the full height of the wall and taken right across the top of the parapet and down on the external vertical faces to a minimum distance of 5 cm. (see Fig 22.18).

(g) *Low Dividing Walls:* Where low dividing walls or inverted beams are met with, the same shall be covered with a four or six layer treatment as for the main roof, the latter bearing carried down both sides of the wall and



overlapping the roofing treatment as in the case of flashing of high parapet walls. Drain outlets where formed in the low dividing walls, shall be given water proofing treatment of the same number of courses as specified for the flat roof surface. The bottom and sides shall be so treated that all overlaps are in the direction of flow of drainage.

(h) *Expansion Joints:* Where the expansion joints are provided in the slabs, the joints and their cover slabs shall be suitably treated with water proofing. A typical sketch of an expansion joint with the RCC slabs on either side of the joint turned vertically up and dwarf walls by not less than 7.5 cm. and are provided with throatings on their underside along their length. The water proofing treatment shall be taken up the sloping junction fillets and the vertical faces of the walls to the underside of the cover slabs. The cover slabs are given the water proofing treatment like the roofs slabs, after the cross joints between adjacent cover slabs are first sealed with 15 cm width of roofing felt struck to them with bitumen. The water proofing treatment shall be carried down the sides of the cover slabs to their full thickness. Care shall be taken to see that overlaps if any in the roofing over the cover slabs stagger with the joints between cover slabs. The formation of the expansion joints and provision of the cover slabs shall be the responsibility of the construction agency. The formation of the junction fillets and the water proofing treatment of the joint and cover slabs shall be carried out by the water proofing agency. Nothing agency extra shall be paid for the sealing of the cross joints in the cover slab with 15 cm. width of bitumen strips.

(i) *Pipes:* Where vertical pipe outlets are met with, 7.5 x 7.5 cm fillets of lime or cement concrete of the type and section shown in Fig. 22.7 shall be provided and flashing of four or six course treatment, same as for the roofing treatment shall be laid. The upper edge of the flashing shall be laid sloping down forward and butted against the pipe and annular depression so formed shall be filled with hot bitumen. A circular metal collar in the shape of an inverted truncated cone shall be fixed on the pipe to throw off the rain water clear of the flashing and this shall be paid for separately.

e) *Measurement:* Length and breadth shall be measured correct to a cm. The area shall be calculated in square metres correct to two places of decimal. Measurements shall be taken over the entire exposed area of roofing and flashing treatment including flashing over low parapet walls, low dividing walls and expansion joints and at pipe projections etc. Overlaps and tucking into flashing grooves shall not be measured. Vertical and sloping surfaces of water proofing treatment shall also be measured under the five or seven course treatment as the case may be, irrespective of the fact that the final course is replaced by bitumen primer. No deduction in measurements shall be made for either openings or recesses for chimney stacks, roof lights and the like, for



areas upto 0.4 sqm nor anything shall be paid for forming such openings. For areas exceeding 0.40 sqm deduction will be made in measurements for full opening and nothing extra shall be paid for forming such openings.

- f) **Rate:** The rate shall include the cost of all labour and materials involved in all the operations described above. The top most layer shall be paid for separately.

EXTRA FOR COVERING OF APP MODIFIED PREFABRICATED MEMBRANE WITH GEOTEXTILE

Geo textile 120 gm. Non woven 100% polyester of thickness 1.0 to 1.25 mm manufactured by a company of repute shall be used.

Geo textile of the specified thickness is bonded to the water proofing membrane with intermittent touch by heating the membrane by Butane torch as per manufacturing recommendations.

Measurements: Length and breadth shall be measured correct to two places of decimal, measurement shall be taken over the entire exposed area of roofing.

Rate: The rate shall include the cost of all labour and material involved in all the operation described above. Final layer of brick tiles or 25 mm thick cement concrete shall be measured and paid for separately.

The whole terrace so finished shall be flooded water for a minimum period of two weeks for curing and for final test. All above operation to be done in order and a directed and specified the Engineer-In-Charge.

The work shall be executed through authorized waterproofing agency and the warranty certificate for a period of 5 years for the executed waterproofing work shall be submitted on non-judicial stamp paper of Rs.100/- only before submission of final bill.

02.08 Repair Works for the Exterior and interior Walls, Damp Proof course for the walls and painting of internal walls:

Repair works for the exterior and interior walls includes the identification of the major and minor cracks in the Control room building, Office room building and Security room and the surface preparation for the crack identified area for the external walls and internal walls removal of the existing grit wash and identification of the deepness of the walls and the same has to be filled with crack seal or micro cement as per the following specifications:

Surface Preparation

Open the cracks and widen the cracks to form a 'V' shaped groove. This will provide a strong base for adhesion of Crack Seal to the substrate. Clean the area thoroughly so that it is free from dust and loose particles. It is recommended to use a cutter for opening the cracks.

Priming:

Posts cleaning apply Primer in the opened cracks. For interior cracks, use Asian Paints Deco Prime water based Primer and for exterior cracks, uses Asian Paints Exterior Primer (as per regular dilution of 100% with water).

Product Application:

Apply first coat of Crack Seal on the crack using spatula or putty knife. Use directly without any dilution. Press the paste firmly into the crack and level with the surface. Spread 3 cm on either side of the crack for better adhesion. Apply in consecutive perpendicular layers to avoid leaving air pockets. Allow it to set for minimum 6 hours. Apply the second coat of Crack Seal in the same manner. Further finishing like POP or putty can be taken up once the coat is fully dry.

Painting of Internal Walls with Acrylic Emulsion Painting:

Preparation of Surface:

Preparation of surface shall in general any unevenness shall be made good by applying putty made of plaster of paris mixed with water including filling up the undulation and then sand papering the same after it is dry. Before starting painting with oil bound distemper, the prepared surface shall be treated with two coats of primer consisting of cement primer, whiting and the surface shall be smoothed by applying thick paste made of synthetic enamel paint, varnish (Jallo) and chalk powder with knife edged patti.

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.

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

Damp Proof Course for the Walls:

Pre-installation Measures:

Before installing chemical dpcs the measures given below are essential;

Expose the internal line of the proposed dpc by removing plaster, skirting boards and any other obstacle to effective treatment. Any timber in sound condition should be stored dry for reinstatement. Electrical circuits should be isolated to allow removal of electrical fittings (refer to electrical authorities for requirements). Confirm location of any pipe work in the walls.

Confirm the internal line of the dpc matches that of the external dpc and that the ensuing dpc installation will not be bridged. Where possible the dpc should install at least 150mm above ground level, remove any external render to expose line of proposed dpc;

Repair masonry defects, which may prevent the successful installation of the dpc, eg, loose bricks or fretted mortar. An integral waterproofing additive should be used in any mortar repairs.

Installation of Damp Proof Courses

The object of installing a chemical dpc is to create a continuous barrier to rising dampness at the correct level in a wall. The following methods are described in this standard;

- a) higher pressure injection (generally used for solvent based products);
- b) Lower pressure injection (generally used for solvent based and aqueous based products).
- c) Gravity feed transfusion (generally used for aqueous products).

In each case the procedure should consist of two distinct stages;

- a) drilling a series of holes in a pattern depending on the thickness and form of construction of the walls and the method of treatment selected.
- b) Inserting the chemical dpc material in the appropriately method described below.

Where angled holes are to be used, it is desirable that drill holes terminate in a bed joint and that the dpc material is injected into this joint to form a horizontal dpc;

If timber floors are to be reinstated, the dpc can be installed below floor level ensuring the dpc will not be bridged;

Where solid floors are installed, the dpc should be installed as close to the floor as possible. Any floor membrane should be linked to the dpc to ensure continuity



of the moisture barrier. Where this is not possible, special attention should be given to the protection of the skirting;

A vertical dpc should be installed where the dpc changes level and to isolate walls to be treated from untreated walls which are likely to have rising damp. Eg. In adjoining terrace buildings or garden walls, and should extend to 300mm above detected dampness;

Where random rubble fill walls have been identified, it is essential to treat them as cavity filled walls, ie, to treat the two masonry leaves and the cavity fill separately using the appropriate method. Specialist advice should be sought

Variable speed percussion drills should be used to ensure drill holes do not fracture the masonry

The volume of the dpc fluid used should be recorded to ensure product is not lost where masonry is cracked

Pressure Injection Techniques:

Higher Pressure Systems - Principally for Well Fired Masonry:

Drill holes 10mm to 16mm in diameter along the line of the dpc at sufficiently close intervals to ensure the injected dpc material will form a continuous barrier (approx. 100mm to 120mm apart).

The holes should be drilled into the masonry units or into a suitable mortar course provided the mortar is sound. Holes can be drilled on an angle down through the masonry units into the mortar bed. Where the masonry units are impervious (eg blue stone) the drilled holes must terminate in the mortar bed;

Use the appropriate drilling method to suit the wall thickness and type of construction as follows;

- a) single brick or solid masonry walls, drill from one side to 25mm from remote face of wall;
- b) Double brick walls, drill into header course, drill from both sides of wall or drill and inject each leaf in two stages from one side of wall. For party walls, there may be no possibility of having access to both sides of wall and all drilling must be from one side. **Note: Neighbours should be informed of works to party walls.**
- c) thicker walls treated from one side by multiple injection is treated as follows;
 1. Drill the first set of holes from one side of the wall;
 2. Inject the dpc as described in 6.2.1.3;

3. Drill through the existing holes beyond any vertical joint and repeat 2);
4. Repeat 3) penetrating the wall at incremental depths of not more than 150mm.

For cavity walls, treat each leaf as an independent wall. Where access to one side is not available, the cavity must be clear to ensure no bridging of the damp course installed to the one leaf. The multiple treatment method as described in c) above can be used to treat the remote leaf;

Injection rods with a plastic or rubber grommet are used to seal the drill holes. Inject the dpc fluid into the holes until fluid exudes out of the masonry to form a continuous band along the line of injection. Typical pressure range from 0.7 to 0.9 Mpa, however, on site performance will dictate the working pressures used to avoid blow by and wastage

When the face of the masonry cannot be observed, eg. During double injection, pump a measured amount of fluid, as determined by the initial injection into the wall. The volume of material used will depend upon thickness and porosity of the substrate.

For multiple injections, the injection nozzles must be inserted beyond the vertical joint to avoid fluid loss in the wall. At all times, monitoring of the injection process is required to avoid sudden losses through cracks or fissures. Additional injection holes maybe drilled adjacent to previously drilled holes to ensure through impregnation.

Low Pressure Systems- Generally for Weak Masonry or Mortar Joints:

Drill holes 9mm to 16mm in diameter at 120mm to 150mm centres either horizontally or an angle of depression of 25 to 45 degrees terminating in a mortar joint at the level at which the dpc is to be formed;

The holes are drilled into a convenient mortar joint provided that mortar is sound (see 4.5), or into the masonry units. Use the appropriate drilling method to suit the wall thickness and type of construction as follows;

- a) for solid walls up to 460mm in thickness, drill from one side and terminate the hole no less than 40mm from the opposite face;
- b) for solid walls greater than 460mm, but less than 920mm, treat the wall as two separate sections of equal thickness drilling either horizontal or angled holes terminating no less than 40mm from the centre line of the wall;
- c) For cavity walls, treat each leaf as a separate solid wall and proceed as described in a): if the cavity is filled with debris, ensure the debris is below the dpc line or take measures to ensure the dpc will not be bridged. **Note: For walls greater than 920mm, specialist advice should be sought.**

Carry out the injection using a single nozzle with an expanding seal. The injection equipment should have a pressure gauge fitted to monitor pressures. Injection pressures are usually 0.15Mpa to 0.3Mpa. Performance on site will determine the most appropriate pressure used to avoid blow by or fluid wastage. Inject each hole individually. The volume of fluid injected will depend on the thickness and porosity of the substrate.

Failure to maintain pressure directly after release of the operating trigger on the nozzle indicates possible fluid loss through a crack or fissure. In such cases, either drill a new injection hole adjacent to the original hole or caulk the crack or fissure before re-injecting.

Gravity Transfusion Methods:

Drill holes of 16 to 22mm dia. along the line of the proposed dpc in a convenient mortar course provided that the mortar is sound, or into the masonry at an angle of depression of 25 to 45 degrees terminating at the level at which the dpc is to be formed.

The diameter of the holes normally does not exceed 25mm and are space at no more than 170mm centres. Holes of greater diameter may be required where walls are greater than 1000mm thick.

Large diameter holes should be drilled only by rotary drill (no hammer) to avoid surface damage to the opposite face of the wall. When drilling through load bearing walls, eg. Columns, it is essential to guard against structural failure. Drill the first holes at 340mm centres transfuse as described and fill with grout. Then drill the remaining holes and impregnate before grouting. Use the appropriate drilling method to suit the wall thickness and type of construction as follows;

- a) for solid walls up to 120mm in thickness drill from one side and terminate the hole not less than 25mm from the opposite face.
- b) for solid walls greater than 120mm in thickness, drill from one side of the wall terminating the holes within 40mm from the opposite face or drill from both sides terminating the holes no less than 40mm from the centre of the wall, or a staggered drilling pattern with the holes terminating not less than 40mm from the opposite face;
- c) For cavity walls, drill from one or both sides. When injecting from one side, transfuse one leaf first and then drill through to give access to the far leaf for similar treatment.

Use a transfusion unit to dispense a measured quantity of fluid into the wall via the drilled holes. Usually, this will consist of a fluid container, which feeds to a tube inserted into the hole. It is essential to prevent fluid loss through cracks or fissures in the wall, by covering holes in the transfusion tube with a suitable dense material, caulking cracks and fissures and sealing around the transfusion tube, or drilling a new hole adjacent to the original failed hole.



Special care should be taken to seal around the transfusion tube and avoid air locks which could obstruct the transfusion process. Carefully monitor the fluid consumption to identify any defective areas and ensure satisfactory treatment. Do not remove the transfusion unit from the wall until the required volume of product has penetrated the wall. The time taken will vary from 2 to 3 hrs and may take as long as three days.

Finishing Work

Evaporation of solvent

Subject to reasonable ventilation and temperatures within a building, all solvents and smells should disappear within two weeks of the dpc insertion. Occasionally, special circumstances may cause longer solvent drying periods.

Drying of Masonry

A dpc is normally inserted into a damp wall, which will remain damp until natural drying has taken place. The drying time and extent of drying are determined by the prevailing conditions of temperature, humidity, ventilation and retained salt content. In addition some damp course fluids do not become effective for a period of some weeks. As a general rule, in a 225mm solid wall drying will take up to a year provided other sources of damp have also been rectified.

Replastering

To achieve maximum drying, and saturated wall surface finish should be removed up to 300mm above the highest point of detected rising damp as soon as possible after dpc insertion, to allow the substrate to dry. Damp surface finishes not removed will limit the amount of moisture movement to the surface for drying.

Internal finish- The function of new plaster is to hold back the hygroscopic salts and moisture introduced into the wall by rising damp and prevent the salts from migrating to the new plaster surface. In all cases, as long as possible should be given to drying out before re-plastering. With the correct "salt retardant" additive, re-plastering can be carried out as soon as the damp course fluid has dried, provided there are no other sources of moisture penetration.

Where the existing plaster surface has not deteriorated due to salts, the plaster may be left on the wall until drying out is complete. Replastering may be avoided if sufficiently dry, which may take up to one year. Maximum ventilation should be provided throughout the drying out period.

It is essential that plastering should comply with the specification of the installer. Additive is used in solid plaster to retain salts but allow drying of the wall through migration of water vapour. New plaster should not be a vapour barrier. Plasterboard of any specification is unsuitable to be applied directly to a treated wall.

Solid plaster basecoats should be at least 10mm thick. On uneven walls it may be necessary to have greater thickness of plaster which may need to be applied in more than one coat. The surface coat (hard finish) does not require any special additives.

Dry Lining- Dry lining systems can only be used where the walls are battened out to allow a vapour gap to the wall, or adhered directly over solid plaster base coats to match existing walls. Where battened, treated pine should be used or a membrane material used to isolate the battens. When applying dry linings, maximum drying time should be allowed.

Redecoration

Impervious wall coatings should not be applied until the walls have thoroughly dried, up to one year. All coatings used should allow the movement of water vapour such as water based paints. Installers recommendations should be followed.

External drill holes can be filled using a matching coloured mortar with clear waterproof additive.

Exposed brick walls will often show an accumulation of salts during the drying process. Where exposed brick walls with no covering are to be retained, washing with a weak acid solution after three monthly periods may be necessary. This should be confirmed with the dpc applicator.

02.10 Providing and laying 15 mm thick cement plaster on walls:

Work under this section shall consist of furnishing all labour, materials, equipment's and appliances necessary and required to completely for providing and laying 15 mm thick cement plaster on walls, where the existing grit wash is effected by the dampness and loosely attached to the walls to maintain level for damp proofing.

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 at least 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.

03.0 Completion Time Schedule:

All works as mentioned in the scope of work shall be completed in a time period of 120 days from the date of issue of work Order.

04.0 General Instructions to the Contractor

- Plan and prepare a schedule for execution and work implementation as per QA/QC plans to be approved by BGL.
- Get from BGL the latest revision of all documents/ drawings at the commencement of work / during the course of construction and execution of work at site.
- In case any discrepancy is found between drawings & documents, the same shall be brought to the notice of the Engineer-in-charge before execution of work and decision of the Engineer-in-charge shall be final and binding to the contractor without any extra cost implication to BGL.
- Specification and descriptions of various items are for identification of material and works to be carried out under them. No cost shall be quoted against these unless mentioned.
- Quantities as mentioned are indicative and can have a variation from the quantities actually executed. The contractor is advised to work out the breakup of individual work items and quantities at his own before quoting any rates. BGL is not liable for any discrepancies in the quantities and no extra time or cost shall be granted on this pretext.
- The contractor has to obtain all types of statutory approvals including completion certificate, approval from electrical inspector for electrical work and all other approvals that might be required to commission the station, from various relevant authorities during the course of work and after completion of works in co-ordination with BGL, without any cost implication to BGL.



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- The contractor has to arrange all tools and plants, site fencing material, lighting arrangements, store, electricity and water at his own cost.
- The contractor should quote keeping this in mind that no request for escalation in the cost shall be entertained under any circumstances by Owner after placement of order.
- The work shall be carried out in city conditions and generally close to the roads and public services conveying a considerable volume of vehicular traffic and human activity. It is deemed necessary that the tenderer considers the "SAFETY" as the MOST IMPORTANT aspect of working conditions and is required to include in his offer all costs (direct and indirect) towards observance, compliance and provision of all safety appurtenances and norms.
- Receiving SS tubes, fittings and other free issue items from BGL's stores and bringing it to site, keeping proper care of, storing the same till they are used for construction and returning the unused material to the store.
- Handing over the completed works to BGL for their operation/ use purposes.
- Any other activity(ies) not mentioned/ covered explicitly above, but otherwise required for satisfactory completion/ operation/ safety/ statutory/ maintenance of the works shall also be covered under the Scope of Work and has to be completed by the Contractor within specified Schedule of Items of Works at no extra cost to BGL.

05.0 REFERENCE SPECIFICATION, CODES AND STANDARDS

The contractor shall carry out the work in accordance with this Specification, approved construction drawings issued by BGL, Standards or relevant BIS code as might be required. Should the Contractor find any discrepancy, ambiguity or conflict in or between any of the Standards and the contract documents, then this should be promptly referred to the Engineer-in-charge (EIC) for his decision, which shall be considered binding on the contractor.

06.0 APPROVALS

Approval in principle for all work should be obtained from EIC prior to execution.

To ensure smooth execution of the work on a day-to-day basis it will be the Contractors responsibility to liaison with EIC / concerned engineer and obtain Necessary approvals.

07.0 PROGRESS OF WORK

The Contractor shall proceed with the Work under the Contract with due expedition and without delay .The EIC may direct in what order and at what time the various stages or parts of the work under the Contract shall be performed. If the Contractor can reasonably comply with this direction, the Contractor shall do so. If the Contractor cannot reasonably comply, the Contractor shall notify the EIC in writing giving reasons.



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SECTION – 8

SPECIAL CONDITIONS OF CONTRACT

SOECIAL CONDITIONS OF CONTRACT

LOCATION/ SITE INFORMATION:

It is understood that before quoting the rates, the contractor will visit the work site which is situated at CNG Mother Station at Vakalapudi in Kakinada 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 Mother Station at Vakalapudi in Kakinada 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 Mother Station at Vakalapudi, 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 contractor has to take prior approval from site-in-charge/ EIC & work station-in-charge. If any hot work like chipping, welding, cutting etc. has 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.



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8. **Validity of contract period:**

5 months from the date of award of work.

9. **Completion Time:**

Total duration for completing SOR jobs is 4 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:**

The defect liability period for this work is 12 months to be reckoned from the date of actual completion of work as certified by the Engineer-in-charge. After DLP is over; applicable warranty will enforce for waterproofing work executed. The same shall be provided by the agency before processing of final bill by the way of authorized applicator.

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 Owner'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. **Rates as per schedule of rates**

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. In case 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. In case 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 interstate 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



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- 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



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SECTION – 9
SCHEDULE OF RATES (SOR)



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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)
A)	PART-I Filling of Dug Area and Restoration of Damaged Cable Trenches at Back side of Auxiliary Building				
1	Earth work in filling with good quality imported earth from approved source in the layers of 150 mm and compacted up to 95% to its MDD up to 3.5 m depth and any plan dimension including all testing, watering, rolling each layer with 1/2 tonne roller or wooden or steel rammers, and every 3rd and top-most layer with power roller of minimum 8 tonnes and dressing / filling up ground depressions etc. complete in all respect as per scope of work, detailed construction drawings , as per technical specifications and directions of the Engineer-in-charge.	Cu.Mtrs	520		

2	Providing and construction of Single cable trench in brick masonry over the 100 mm thick PCC (1:4:8) base with precast SFRC cover of 400mmX500mmX 70 mm thk along with edge angle (ISA 75x75x6) and fixing of ISA 50x50x6 for supporting pipetrays @ spacing of 1000 mm c/c along the trench, including 12 mm in CM 1:5 plastering of walls of trenches complete in all respect as per scope of work, detailed construction drawings, technical specifications and directions of the Engineer-in-charge.	RM	36		
3	Filling and Restoring the dislocated paverblocks besides the damaged Cable Trench: construction and handing over of CC inter locking paver block 80 mm thick, I shape, rough finish, M-40 strength with epoxy coating of approved brand laid over the sand bed of minimum 50 mm thick,Paver blocks will be supplied by BGL	Sq.Mtrs	18		
4	Supplying and filling Sand in 150mm thick layers watering, ramming, consolidating and dressing the surface including cost of sand(Zone-II/Zone-III sand only) complete in all respects as per scope of work, detailed constructions drawings as per technical specifications and directions of the Engineer-In-Charge	Cu Mtrs	5		
PART-I : Sub Total(Rs.)					
Service Tax @ 6%					
PART-I :Total inclusive of all applicable Taxes and duties(Rs.)					

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)
B)	PART-II: Water Proof Treatment and Damp Proof Treatment for the Buildings in Mother Station, Kakinada				
5	Removal of Existing concrete layer above the mother slab: Removal of the existing concrete layer of thickness for the entire slab area. 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	Cu Mtrs	8		
6	Providing and laying cement concrete(1cement:1.5 coarse sand:3 aggregate) of requisite thickness as per site requirement over roof surfaces to maintain slope	Cu Mtrs	8		
7	Water Proof Treatment on Office room Bulding and Security Room: Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer, 3 mm thick water proofing membrane, black finished reinforced with glass fibre matt consisting of a coat of bitumen primer for bitumen membrane and extra for covering top of membrane with Geotextile, 120 gsm non woven, 100% polyester of thickness 1 to 1.25 mm bonded to the membrane with intermittent touch by heating the membrane by Butane Torch as per manufactures recommendation	Sq Mtrs	200		

8	<p>Repair Works for the Exterior and interior Walls, Damp Proof Course and painting for internal walls: Removal of loose concrete in the walls where the cracks are developed in the walls, Surface preparation and filling of cracks with the crack sealants or micro cement based on the deepness of the crack as stated in the scope of work. Application of damp proof course for the walls by the suitable method as per the site conditions and finishing walls with water proofing cement paint of required shade and finishing internal walls by applying 2 coats of acrylic emulsion paints of Asian paints/ Berger/ICI brand in approved colour including surface preparation, primer, putty etc. as per scope of work, detailed construction drawings , as per technical specifications and directions of the Engineer-In-Charge. 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</p>	Sq Mtrs	550		
9	<p>Plaster in CM 1:4: Providing and laying 15 mm thick cement plaster on walls, where the existing grit wash is effected by the dampness and loosely attached to the walls to maitain level for damp proofing.</p>	Sq Mtrs	50		
PART-II: Sub Total(Rs.)					
Service Tax @ 10.5%					
Part II: Total inclusive of all applicable Taxes and duties(Rs.)					
Grand Total inclusive of all applicable Taxes and duties(Rs.): (Part I +Part II)					